PHYSICAL GROWTH AND DEVELOPMENT OF SOUTH AFRICAN RURAL BLACK CHILDREN

Stranger Jacob Kgamphe

A thesis submitted to the Faculty of Science, University of the Witwatersrand, Johannesburg, in fulfilment of the requirement for the degree of Doctor of Philosophy.

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DECLARATION

I declare that this thesis is my own, unaided work. It is being submited for the Degree of Doctor of Philosophy in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other University.

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A B S T R A C T

Growth rates of children are sensitive indicators of their health and well being. In developed countries, longitudinal growth studies have allowed the development of growth rates and growth charts used to monitor the normality or otherwise of a child's growth and development. They have only been recently undertaken in the AfrIcan countries. We initiated a mixed-longitudinal study at Vaalwater, Limpopo Province, and at Ubombo, Kwa-Zulu Natal province. We involved 7-18 year old subjects attending rural schools and they were compared with the National Centre of Health Statistics, World Health Organizations Reference (2007) charts, Frisancho's (1981) MUAC centiles, and Cole et al. (2007) BMI cut-off points for thinness.

Measurements were taken using standard anthropometric methods and tools as recommended by the WHO.

Local, rural, distance reference charts for healthy schoolgoing children of height, weight, sitting height, biacromial diameter, biiliac diameter, relaxed upper arm circumference, head circumference and skinfolds from the triceps, biceps, suprailiac and sub-scapular sites, particularly for the 7-18 year olds, were constructed and smoothed by polynomials. WHO reference (2007) showed:

Weight-for-age: Vaalwater girls were severely underweight(1.9%(0.6%, 5.7%)95%CI) with mean(-0.89) and SD(1.09) and boys severely underweight(33.3%(1.1%, 9.2%)95%CI) with mean(-1.1) and SD(0.98). Ubombo girls(1.5%(0.2%,10%)95%CI) severely underweight with mean(-0.38) and SD(1.05) and boys(1.4%(0.2%,9.7%)95%CI) with mean(-0.66) and SD(1.02).

Height-for-age: Vaalwater girls were severely stunted(5%(2.7%,8.9%)95%CI) mean(-0.91) and SD(1.2) and boys(3.3%(1.7%,6.6%)95%CI) severely stunted with mean(-1.21) SD(1.07), Ubombo girls were(2.2%(1.2%, 4.1%)95%CI) severely stunted mean(-0.66) and SD(1.11), and UB boys were(3.3%(1.9%,5.9%)95%CI) severely stunted mean(-1.08) and SD(1.11).

BMI-for-age: Vaalwater children were severely wasted(3%(1.8%,5.2%)95%CI) with mean(-1.44) and SD(0.93) and (2%(0%,0.7%)95%CI) of all the UB girls were obese. BMI indicate that these children are severely thin particularly VAL boys. MUAC results indicate that both UB and VAL children are severely undernourished at almost all ages.

Peak Height Velocities for Vaalwater and Ubombo girls were 6.02 cm/yr and 10.73 cm/yr at 14.5 and 13.5 years respectively and 6.35 cm/yr and 5.97 cm/yr at 13.5 years and 15 years for Vaalwater and Ubombo boys respectively.

Vaalwater and Ubombo children are at severe risk of undernutrition and at risk of premature death.

DEDICATION

In memory of my late wife:

Patricia Dimakatso Kgamphe,

my late daughter :Lerato Aggrinnette

and

my remaining two girls:Nthabeleng

and Tswelopele(Mpumelelo).

I thank them for the inspiration they gave me

during my Ph.D. studies.

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My latest exposure to international anthropometric study in craniofacial morphology was through my involvement with Prof Leslie Farkas's research team in Canada. I thank him and his team for this unique opportunity and the joint paper that was subsequently produced.

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ABBREVIATIONS

BCP	-	Biceps
BMI	-	Body Mass Index
BAZ	-	BMI-for-age z-score
CAD	-	Computer Aided Designs
CDC	-	Centre of Diseases Control
CDCP	-	Centres for Disease Control and Prevention
CSS	-	Central Statistics Service
CV	-	Coefficient of Variation
FFM	-	Fat Free Mass
GBP	-	Great Britain Pounds
HAP	-	Height-for-age percentile
HAZ	-	Height for age Z-score
HEAD CIRC.	-	Head Circumference
HDI	-	Human Development Index
KGA	-	Kgamphe
KIDS	-	Kwa-Zulu Natal Income Dynamics Study
LBM	-	Lean Body Mass
MGRS	-	WHO Multicentre Growth Reference Study
N/A	-	Not Available
NAW	-	North American Whites
NS	-	Nutritional Survey Module
NCHS	-	National Centre of Health Statistics
NHANES 11	-	National Health and Nutrition Examination Survey
NNSDP	-	National Nutrition and Social Development Program
NPA	-	National Program of Action
PNSS	-	Paediatric Nutrition Surveillance System
PHV	-	Peak Height Velocity
RACE	-	Social construct with biological impact
RELUAC	-	Relaxed Upper Arm Circumference
MAITISO	-	Traditional Tswana evening gatherings

A B B R E V I A T I O N S cont.

SCP	-	Sub-scapular
SD	-	Standard Deviation
SES	-	Socio Economic Status
SPR.-ILIAC	-	Supra-iliac
TRCP	-	Triceps
TBF	-	Total Body Fat
UB	-	Ubombo
USHES	-	United States Health Examination Survey
VAL	-	Vaalwater
WAP	-	Weight-for-age percentile
WAZ	-	Weight for age Z-score
WHO	-	World Health Organization

CHAPTER 1

PHYSICAL GROWTH AND DEVELOPMENT OF BLACK SCHOOLCHILDREN

1.0 INTRODUCTION

1.1 The importance of Physical Growth and Development studies

Measurements of height, weight, skinfolds, head-circumference, and many other body measurements have been carried out fairly extensively in many countries of the developed world. These studies have formed the basis for anthropometric reference charts used to establish the normality or otherwise of human growth in these countries. Their findings serve as informational data in the shaping of national health policies and public programmes. The term Anthropometry or Auxology, describes the study of physical body measurements.

Anthropometric measurements have been widely used to distinguish children who are "normal" from those who are "malnourished" in order to select those in need of priority attention. Measurement of the physical growth and development of the child is a sensitive indicator of the health or otherwise of the community.

Literature on growth and development indicate that differences between populations in the size and shape of adults may be due to differences in their gene pools, or both, in their environment, and in the interactions between the two. A child's growth and physical development are also determined by an interaction of genetic and environmental factors.

Where environmental factors such as food, clothing, housing, recreation, emotional and proper parental care and a stimulating environment are all entirely favourable and ill-health is absent, an individual should attain the maximum growth of his/her potential. If the diet is deficient, the environment unfavourable, or prolonged ill-health occurs, the full growth potential is not realized and the child's body measurements fall in the lower part of the range and below the normal range of values found in other populations.

This wide range in the body measurements of children may be expressed graphically according to age, by means of percentile charts based on the measurements of large numbers of healthy children. In the last 40 years, many countries have drawn up child population growth charts. These charts are used to compare the growth patterns of children from disadvantaged or advantaged communities against the reference charts as agreed by international experts who study human growth and development and lately, by well researched standard charts of normal children, either from their own communities or from internationally accepted growth charts.

In this way individuals and groups of children can be physically diagnosed as normal or otherwise. The health and well being of children can hence be effectively monitored by their growth and measured by anthropometry (Tanner, 1962). Some 50 nations have drawn up national programmes of action (NPA's), which aimed at reaching certain targets. They agreed that child malnutrition, effective control of major childhood diseases, the reduction in under five death rates, reduction in maternal mortality, provision of safe water to the communities, the universal availability of family planning services, and a basic education for all children, is key priorities (The State of the world's children, 1993). To reduce malnutrition, many countries started a growth-monitoring programme with the aim of reaching all preschool children.

The great bulk of the research on this subject has been done in the most developed communities and less so in the underdeveloped communities. Recently most of the studies have been performed in a wide range of contemporary developing societies in Africa, Asia, and South and Central America (Eveleth and Tanner, 1976), (Tanner, 1978). Yet information on birth weight for example, has been gathered in Europe and North America for well over a century. These measurements provide an opportunity to examine the relationship between actual measurements taken and socio-economic factors in circumstances dramatically different from those of the recent past. For health professionals, this evidence permits an examination of the effects of long-term economic development and social change upon birth weight, height or any other metrical character.

1.2 Standard Charts

There has been a debate amongst human biologists and public health workers generally, about the desirability or otherwise of a single universal "reference" or "standard" for growth (Eveleth and Tanner, 1990). (Van Loon , 1986), criticised the use of such standards in Africa because of different socio-economic conditions between Africa and the developed countries where these standards were generated.

It is important to distinguish between a reference and a standard. While a reference may be defined as a tool for grouping and analysing data and that it provides a common basis for comparing populations; no inferences should be made about the meaning of observed differences. A standard, on the other hand, embraces the notion of a norm or desirable target, and thus involves a value judgement, (WHO, 1995). The WHO expert committee also went as far as recommending a body mass index cut-off of greater or equal to 30 as a provisional standard of grade 2 overweight applicable to all adults, mainly because available data on risks of morbidity and mortality supports this fact.

"….Clearly what is needed, and what is very actively in progress, is for countries or at least broad regions, to generate their own standards" (Eveleth and Tanner, 1990). A lot of data in this direction are available in South Africa although some are not published, for example, those of (Turner, 1910-1916). Most of the studies done, however, were cross-sectional in their design with few metrical trails, mostly height and weight only, (Tobias, 1971).

A National Centre for Health Statistics (NCHS) task force has constructed growth charts for infants and children in the United States showing weight, length (recumbent or upright), and weight by length and head circumference (U.S Dept. of Health, Education and Welfare, 1976). Clinical use of the charts made it possible to compare any child with the rest of the U.S child population of like age and sex. These charts also helped to detect malnutrition and growth disturbances among infants and children. These international reference data were recommended by the World Health Organization for comparing, monitoring and evaluating populations (Waterloo , 1977). Deviations from NCHS data may be expressed in three ways: (1) as standard deviation scores (SDS), usually called Z-scores or SD's, (2) as a percentage of the NCHS median for the appropriate age and sex, and (3) as percentile values of the age and sex distribution.

These NCHS/WHO international reference data for assessing growth in children and adolescents above 5 years of age had several drawbacks; The BMI reference data starts only at 9 years of age with a limited percentile range of 5^{th} – 95^{th} . The NCHS reference curves were also constructed using a different and now an outdated method compared to what was used for the WHO standards.

In order to develop new recommendations for the appropriate uses and interpretation of anthropometry in infants and young children, The WHO constituted a Working Group and their report was tabled in 1994 (WHO, 1994). This report led to the conclusion that the NCHS/WHO "…international reference was flawed and failed to depict physiologic growth adequately." This was identified as a scientific weakness and would interfere with the sound nutritional management of young children. The Working group then concluded that new growth curves were needed.

The pooled sample from the six countries (Brazil, Ghana, India, Norway, Oman and the USA) that participated in the Multicenter Growth Reference Study (MGRS), allowed the development of a truly international standard, and hence "…reiterating the fact that children grow similarly when their health care needs are met". Two growth curves have since been constructed from the MGRS data, the birth to 5 years (de Onis et.al. 2004) and the WHO Reference 2007 for the 5 to 19 year old boys and girls (de Onis et.al. 2007).

A major characteristic of the new standard is that it makes breastfeeding as the biological "norm" and establishes the breastfed infant as the normative growth model.

In this PhD research study, it was hypothesised that the South African rural Black children grow similarly to all other "normal" children and hence compared the NCHS results to those of the newly constructed growth curves emanating from the WHO Multicenter Growth Reference Study (MGRS), particularly the WHO Reference 2007 for the 5 – 19 year old boys and girls.

The US National Health and Nutrition Examination Survey (NHANES), published in 1990 by Frisancho and the National Centre of Health Statistics (NCHS, 2000), were among the most popular survey data published in America and are based on a national sample of children, (Cameron and Kgamphe, 1992). Comparative studies from the rural samples from Kenya were those of Turkana pastoralists and Kamba children reported by (Little and Johnson, 1987) and (Kulin , 1982) respectively. Other data for rural Tswana children from Botswana were reported by (Corlett and Woollard, 1988).

1.3 Types of Research Studies

There are three main types of research studies: Cross-sectional, Longitudinal and Mixed-longitudinal studies:

1.3.1 Cross-sectional studies

Studies that are characterized by a single measurement occasion are called Cross-sectional Studies. These studies are relatively cheap, easy to conduct and take less time to execute and analyse. They provide good estimates of the central tendency and variation of the population. While they are the most effective in estimating the mean value of any given measurement they do not, however, allow for the estimation of individual variations in the rate of growth. Population “standards” and growth charts for clinical application are based largely on cross-sectional data (Marshall, 1977).

1.3.2 Longitudinal studies

These studies are characterized by the taking of measurements from the same subjects on more than one measurement occasion, hence they are said to be longitudinal by design. Data are therefore collected at repeated measurement occasions using the same individuals. They thus allow for the estimation of individual growth rates and variation (Marshall, 1977). They are extremely difficult to conduct, time consuming and not cheap.

The first longitudinal studies of human growth began in the United States of America between 1920 and 1930, (Bock , 1973). Data collected in these studies makes possible the quantitative genetic studies of parent-offspring resemblances in the pattern of growth. When stature is measured in each age group, “distance stature” and “stature velocity” graphs can be plotted. Distance stature is the height attained at each age group and stature velocity is the rate of change of stature per period between measurements that is the growth rate. The maximum height velocity achieved during the adolescent spurt is termed “peak height velocity” (PHV) and is an important landmark in the growth of all normal children. The PHV reached by children varies widely and it is related to the adolescent growth spurt.

1.4 Adolescent Growth Spurt

Adolescence is the process or condition of growing up i.e. the period between childhood and maturity. Puberty on the other hand is the condition of having become physically and functionally capable of procreation. While puberty is an end result of sexual maturity, adolescence is a process during which physical, sexual, psychological and emotional changes in an individual take place.

In a sample of British girls, (Marshall and Tanner, 1969), observed a mean age at peak height velocity of 12.14 (+/-) 0.14 yrs (SD = 0.88 yr). Adolescent girls may reach their maximum growth rates at any time between their 10th and 14th birthdays (Marshall, 1977). For boys, the mean age was 14.06 (+/-) 0.14 yrs (SD = 0.92). Most boys reach their PHV between their 12th and 16th birthdays (Marshall, 1977).

A small and marginally significant correlation between the timing of the adolescent spurt and mature length, with a later spurt weakly associated with stature was shown by (Bock , 1973). They also showed that in girls, there appears to be some relationship between the rate of growth in years 1 to 4 and mature length. Their figures for average age for maximum velocity in adolescence were 13.0 years in boys and 11.0 years for girls.

There are five stages of breast development in girls during puberty (Marshall, 1977). Pubic hair development may also be described in five stages. Menarche, or the onset of menstruation or menses takes place at an average age of 13.0 years (SD = 1.0 year), in the southern parts of the United Kingdom. However, this may vary per country, race (social category not as well defined genetic or biological groups) and socio-economic group (Marshall, 1977). These are the measurements to be observed in girls. In boys, the five stages of pubic hair development are based on the same criteria as are used for girls with allowance for anatomical differences. Testicular volume in boys may be measured by "Prader Orchidometer" (Marshall, 1977). In pre-adolescent boys, the volume is usually 1.2 or 3.0 ml and a volume greater than this usually indicates the beginning of puberty (Marshall, 1977). The development of the male genitalia like that of the breasts in girls has also been divided into five stages (Tanner, 1962).

Although the WHO Reference 2007, provides a smooth transition from the child growth standards for 0-5 years, to the older age groups and that the data charts and tables cover the broader percentile than the NCHS, i.e. the 1st to the 99th percentile and from -3 to +3 standard deviations(SD) instead of only the 5-95th percentile range provided by the NCHS reference charts, the weight-for-age(WFA) in older children, above 10 years , is not a good indicator as it cannot distinguish between height and body mass in an age period where many children are experiencing the pubertal growth spurt and may appear as having excess weight (by weight by age) when in fact they are just tall. Body Mass index(BMI)-for-age is the recommended indicator for assessing thinness, overweight and obesity in children 10-19 years. In this thesis, the data analysis will indicate prevalence for thinness, overweight and obesity using BMI-for-age indicator as recommended by WHO Reference 2007.

1.5 Mixed Longitudinal Studies

These studies are characterized by repeated measurements of the same individuals together with single occasion measurements. The original design of longitudinal studies almost always leads to the mixed-longitudinal studies because of the difficulties inherent in sustaining the same subjects over a period of time. Data collected from these studies need careful and different analysis from pure results in cross-sectional or longitudinal studies.

Individual children's data, irrespective of whether they have been measured on each successive occasion, one after the other or once off or even at alternate occasions, their individual data needs to be analysed together. Towards this end, WHO developed WHO AnthroPlus software to facilitate the application of the WHO Reference 2007 for 5-19 years to monitor the growth of school-age children and adolescents. Geneva: WHO, 2009 (www.who.int/growthref/tools/en/)

1.6 Deciding on the Type of Study

The choice and application of the type of study to adopt depends entirely on the type of question to be answered by the research if the question requires a single measurement of impact due to a long-term intervention, a cross-sectional study will be suitable. If on the other hand, a continuous monitoring of a process is sought, longitudinal studies will be suitable. The choice of study to be adopted will depend also on whether the information needed for decision-making will benefit the analysis of the whole population or of individuals within that population. Where individual variation needs to be understood, longitudinal studies will apply, whereas the need for average statistical data can be easily provided by the cross-sectional studies. Most nutritional surveys involve the cross-sectional assessment of the absolute nutritional status of a group. Such data may be used to determine the baseline values and may enable the identification of groups or individuals who are at risk. Nutritional surveillance on the other hand involves the continuous monitoring of the nutritional status of selected population groups, hence the need for longitudinal studies. The latter studies may be used to formulate and initiate intervention measures at the population or sub-population level.

1.7 Sample Size

Lack of bias in the sample selection, randomness and external validity of the sample is recommended and sometimes required. The sample validity will be the extent to which a chosen instrument or tool must obtain the required results. Most growth studies are concerned with the growth of normal individual children or with the setting up of “Standards” which will give the normal variation of a population of children at different ages.

The “power” of the sample is important in determining the effective results from the study. Boys and girls grow differently; hence separate standards for girls and boys will apply. Sexual dimorphism shows girls maturing two years earlier than boys (Marshall, 1977). Ideally, each age and sex should be represented in the sample by at least 30 subjects per age group.

1.8 Timing of the Study

Differences in height and weight amongst high socio-economic status (SES) urban school children, born in the different months of the year were reported (Henneberg and Louw, 1993). These seasonal effects on growth and development have to be taken into consideration during the design phase of the study. Other studies on this subject include “seasonal variation in pre- and post-partum maternal body measurements and infant birth weights”, (Adair and Pollitt, 1983). The “seasonality” of births and birth weights in Tanzania was also reported (Bantje, 1987). Seasonal variations in growth rates of normal and blind children were reported by (Marshall and Swan, 1971).

1.9 Decision on What Variables to Measure

The traditional practitioners of anthropometry were physical anthropologists and human biologists. The pioneer in the methods used and the analysis of growth variation, (Franz Boas 1895), demonstrated how the environment can shape the growth process. Other leaders include Matiegka, Skerlj, (Todd, 1937), (Krogman, 1941) and (Tanner, 1962), (Brozek et al., 1965), who are independent leaders in terms of new approaches to the study of growth, body composition and biological maturation.

Anthropometric evaluations of the upper limb are widely used in the nutritional assessment of children, and in recent years they have also been found valuable in assessing adult nutritional status. Standards for adults aged 25 years and over, were derived by (Jelliffe, 1966), who based arm circumference standards on the population median taken from (1) 3,357 military men from Turkey, Greece and Italy, (Hertzberg , 1963) and (2) 10,042 women from the USA, (O’ Brien and Shelton, 1941).

Skinfold measurements and arm muscle circumference have been used to assess depletion of protein and energy reserves in the developed world, (Bistrian , 1974), (Bistrian , 1976), (Mullen , 1979). Nutritional status can be assessed by weight for age, height for age, weight for height and middle upper arm circumference (MUAC) (Rees , 1987).

Weight-for-age and height-for-age appear to be the best for identifying long and medium term factors; weight velocity for identifying short-term factors (Bairagi, 1987). Weight-for-height is third in the identifying of long and medium term factors, second for identifying short-term factors. Height velocity identifies short-term factors only (Bairagi, 1987).

WHO Anthro, a software developed by the WHO, was developed to facilitate the application of the WHO Reference 2007 for 5-19 years to monitor the growth of school-age children and adolescents and was published in 2006 together with the first set of the WHO Growth Standards (i.e. weight-for-age, height–for-age and BMI-for-age and windows of achievement for six gross motor milestones). In 2008, WHO Anthro was updated to include the second set of attained growth indicators: Head-circumference-for-age, arm-circumference-for-age, triceps and sub-scapular skinfold-for-age. With the launch of the WHO Reference 2007 for children 5-19 years, users expressed the need for a software to facilitate data analysis for this age group and hence the AnthroPlus was developed. More details will be provided under the Materials and Methods section on how AnthroPlus WHO software was used in this thesis.

The principles and the rationale behind this research are based on the international recognition of the use of anthropometric measurements in assessing the impact of environment on human growth and development, particularly on those health policies and public support for breastfeeding that must be strengthened by having breastfed infants as the reference for normal growth and development. The importance of monitoring growth in underdeveloped countries is well documented. The fulfilment of the desire of the new governments to prioritise socio-economic needs and the allocation of resources can be aided by available information on health issues as related to available anthropometric measurements. These local measurements can be compared to the internationally accepted growth standards or to the local charts.

1.9.1 Rationale and background of this study

The approach adopted in this thesis covered a general literature review comparing the international application of anthropometric studies, African studies and South African studies. Of specific focus, were the gaps in knowledge and differences in available data on body measurements between developed countries and developing or underdeveloped countries. This focus highlighted the degree and the frequency of cross-sectional surveys as compared to longitudinal or mixed longitudinal studies in different countries.

Urban and rural studies, and the age groups of children surveyed, were reviewed to indicate the gaps in knowledge and available anthropometric data especially in African and South African surveys. Lack of local charts and the popular use of international reference charts, reinforce the need for more human growth and development studies in those countries with the highest mortality rates due to malnutrition.

Relationships between anthropometric data and the health and well being of communities were discussed. Lack of precise “age” in those studies done in underdeveloped countries was highlighted. The restriction of most growth studies to schoolchildren to the almost total exclusion of pre-school and adult subjects was debated. Studies have shown that pre-school children demonstrate that growth rates in the first year of life are not significantly different between blacks, whites, coloureds and Asians. Many studies cover few body measurements. In this study, height, weight, head circumference, relaxed upper arm circumference, sitting height, biceps skinfold, triceps skinfold, suprailiac skinfold and sub-scapular skinfold and the two diameters, bi-acromial and bi-iliac were measured in all the children studied.

These measurements, together with the assessment of secondary sexual characteristics of one of the rural groups studied, and the longitudinal nature of the study, make it comparable to one of the other few longitudinal studies that covered more anthropometric measurements e.g. that of Cape Coloured children (Henneberg and louw, 1989), where twenty anthropometric measurements were taken from about 4000 Cape Coloured children.

Following the extensive literature review of human growth and development at international level, in Africa and particularly in South Africa, it became imperative to investigate, and enlarge our understanding of the impact of environment on growth and development of the two rural populations of schoolchildren from Ubombo (UB), Northern Kwa-Zulu Natal, and Vaalwater (VAL), Limpopo Province, both provinces forming part of South Africa.

This interest on Growth and Development studies by the author, was stimulated by being involved in other studies that highlighted e.g. the importance of accuracy of data, timing of the research undertaken, frequency of visits to projects and reliability of data generally obtained from research studies and hence the type of interpretation that would follow. Amongst other projects, the main experience was gained from the Birth to Ten studies outlined below.

1.9.2 Background of growth studies by the author

1.9.2.1 Birth to Ten (name changed to Birth to Twenty)

The Birth to Ten studies aimed to follow children's growth and development for ten years. The study has been extended to follow the children's growth milestones in their natural environments for twenty years and has since been coined Birth to Twenty. Several initial publications at the beginning of the studies reported on the accuracy of data and sampling techniques. (Cameron, 1992a, 1992b; Cameron and de Wet, 1995; Cameron and Kgamphe, 1993).

Birth To Twenty (BTT) formed one of the few pure longitudinal studies in South Africa at the time. The BTT study included information covering maternal health, socio-economic status and child health. While involved in the founding process, training of local professionals and the calibration of scientific instruments in order to standardise the process and involved in taking of growth measurements of these children, I developed an understanding of the use and application of growth and development measurements. The process adopted in the approach and the initial findings have since been published (Fonn, De Beer, Kgamphe JS, McIntyre J, Cameron N, Padayachee GN, Wagstaff L, Zitha D, 1991) during the initial stage of "Birth to Ten" - pilot studies to test the feasibility of a birth cohort study investigating the effects of urbanisation in South Africa. The group found the accurate monthly birth rates, the timing, frequency of visits to well-baby clinics and the accuracy and reliability of routinely collected growth data including the appropriate use of birth data collection form. Many children studies in Africa do not have accurate birth records and hence difficult to translate the important data collected into useful information.

In partnership with the Canadian group, we published "International Anthropometric Study of Facial Morphology in Various Ethnic Groups/Races" (social category not as well defined genetic or biological groups). The background to this study was that Anthropometric methods were introduced into clinical practice to quantify changes in the cranio-facial framework. For this to happen, surgeons require accurate cranio-facial databases. In order to contribute to this need, Anthropometric measurements of the face from various ethnic groups were gathered by an international team of scientists. I collected data from the local Zulu population group as a contribution and co-author (“Journal of Cranio-facial Surgery, 2005). The study group consisted of 1470 healthy subjects (18 to 30 years), 750 males and 720 females. The largest group was that of (780 subjects, 12.2%), five from Asia (300 subjects, 20.4%) and four from peoples of African origin (210 subjects, 14.3%). (Farkas , 2005).

Their morphological characteristics were determined by 14 anthropometric facial measurements. The overall findings on the comparison of the ethnic group’s databases with the established norms of the North American Whites (NAW) offered the most suitable way to select a method of successful treatment. The orbital regions exhibited the greatest variations in identical and contrasting measurements in comparison to NAW. Nose heights and widths contrasted sharply between sexes of Asian and Black groups and among Caucasians, nose height significantly differed from NAW in three ethnic groups with one shorter and two greater.

These data are urgently needed by medical professionals but have been lacking up till now in western and northern Europe, Asia and particularly in Africa.

1.9.3 Approach to the presentation of the thesis

The approach adopted in this thesis was such that, aims of the study were followed by specific hypotheses to be tested by the research. The three null hypotheses tested were firstly, that rural black children have their normal growth pattern due to adaptation and hence a local distance reference charts needs to be generated and secondly that they have the same pattern of growth, in terms of magnitude and timing, as that of those of the NCHS reference data and the WHO Reference 2007 and thirdly, that rural children from Vaalwater, have the same pattern of secondary sexual development as that of white European or American Children. The analysis will test if there is any growth deficiency in the rural South African children as compared with International standards, and that the findings will allow for recommendations for the implementation of effective health policies as a long term corrective action.

Professor Noel Cameron started the growth and development programme in the Department of Anatomical Sciences and trained Stranger Kgamphe, the Senior Research Officer in that Department at the time, and the author of this thesis, on the research aspects of growth and development monitoring. A further study, ten years after the initial study at Vaalwater (VAL), undertaken by Kgamphe (KGA) together with the third year science students from the University of the Witwatersrand, aimed to assess the possible impact of the new government's policies on the growth and development of South African rural black children in the Limpopo Province. The sample sizes were unfortunately too small for a comprehensive comparison, but by using the WHO AnthroPlus software that allows for individual analysis (IA) by age, Z-scores were generated to give an indication of their growth status as compared to WHO Reference 2007.

An extensive overview of growth studies was critically assessed in the literature review, covering major world studies on rural and urban factors affecting growth. International, African and South African studies were compared and the gaps in knowledge were identified. The objectives of the study were tabulated at the end of chapter 2, followed by an account of Materials and Methods in chapter 3. Data editing, the type of information collected and the characteristics of the sample were discussed in Chapter 4 and statistical analysis techniques, particularly Coefficient of Variations (CV) of all measurements from both Ubombo (UB) and Vaalwater (VAL), were dealt with in Chapter 5.

In Chapter 6 the results were presented as follows:

1.9.3.1 Distance data

Attained measurements of height, weight, sitting height, head-circumference, bi-acromial diameter, bi-iliac diameter and thicknesses of the four skinfolds from the triceps, biceps, supra-iliac and sub-scapular sites were tabled. The generation of the local rural Distance reference charts forms the basic estimation of how the "normal' local children from both UB and VAL who attends school and may have adapted to their local environments.

1.9.3.2 Comparison of rural data to both NCHS and WHO Reference 2007

The release of the WHO Reference 2007 multi-country growth charts has recently generated a sigh of relief to many human biologists. It highlighted the gaps and compromises that had to be endured in using other reference data including the NCHS reference data, that provided a basis for making comparisons only and didn't enable evaluation and judgement. The limitations of NCHS reference have now been highlighted even more so after the WHO comprehensive review of child growth references. The new standards show how children should grow in all countries rather than merely describing how they grew at a particular time and place.

Standards set benchmarks and therefore are more effective guides to, and evaluators of, interventions to improve healthy development and growth. An ideal international standard show how children should grow and allows for comparison across countries that can guide policy making and support child health advocacy efforts.

The use of the WHO Reference 2007 would help in the estimation of both sub-optimal or excessive weight gain in both Ubombo and Vaalwater children, prevention of under-nutrition, overweight and obesity and the health problems that arise from both.

Literature on growth and development shows that infants and children from geographically diverse regions of the world experience very similar growth patterns when their health and nutritional needs are met. We can then assess, in an objective manner, compliance with a child's right to grow, including measurement of health goals and indicators such as the Mellenium Development Goals (MDG's). The standards will also serve to further the UN Convention on the Rights of the Child, which recognizes the duties and obligations to children that cannot be met without attention to normal human development.

Prevalence rates and estimates of disparities of physical growth in the rural children from Ubombo and Vaalwater, based on the reality that environmental differences rather than genetics are their principal determinants are reported.

1.9.3.3 Assessment of sexual characteristics from Vaalwater boys and girls

Sexual characteristics are observed during puberty. Puberty is one of the most important life transitions particularly in human life. Comparatively speaking, there is no other period in the life cycle in which there is such significant, rapid, and simultaneous transformation in biology and social and psychological development. Most changes at puberty are both dramatic and universal, yet there are relatively few researchers who study this important stage in the course of life. In this thesis, we assessed the growth and development of rural children during those age ranges that cover the puberty period (6 to 19 years). Estimates of menarche and breast development in girls, the pubic hair development in both boys and girls and the testicular volumes of both right and left testicles were estimated in boys.

In Chapter 7, the summary of the key findings of the research is outlined. A conclusion and recommendations are made on the key aims of this thesis.

1.9.4 Summary Findings: Aims of the research

- To generate local distance reference charts for rural children from both Ubombo and Vaalwater on height, weight, sitting height, head circumference, relaxed upper arm circumference, biacromial and biiliac diameters, and skinfolds from the biceps, triceps, Sub-scapular and suprailiac sites, through a mixed-longitudinal study design for 6-18.99 year old boys and girls

- To generate estimates of prevalence rates for disparities in physical growth, particularly weight-for-age, height-for-age and BMI-for-age and estimates of underweight and overweight including obesity, wasting and stunting percentages using WHO Reference 2007
- To assess secondary sexual development of Vaalwater and estimated growth rates at puberty e.g. Peak Height Velocity (PHV).

In chapter 8, the comprehensive methodology applied in the cleaning of data and comparison with other several reference data highlighted several significant issues in Auxology. There was a need to remove small sample sizes from the final analysis. The number of 6 year olds from both UB and VAL samples were too small for comparative analysis and their mention throughout the thesis may be ignored as they were not part of the final conclusions. Chapter 8, is an indepth comprehensive and integrative discussion of the results. It covers key questions on the achievements of the thesis and the value it has added to the understanding of the growth of local rural children. Detailed discussions on the differences in the pattern of the growth status and development of UB and VAL children are covered, particularly in terms of height, weight, BMI and sexual dimorphism. Further comparison with Frisancho (1981) MUAC reference data, and comparison with the BMI cut-off points for thinness as developed by Cole and colleagues in 2007, helped in the assessment of the nutritional status of the subjects studied, and the impact of their environment.

CHAPTER 2

AVAILABLE RESEARCH AND IDENTIFIED GAPS

2.0 LITERATURE REVIEW

2.1 International Studies

The report of a WHO Expert Committee in the WHO Technical Report Series No. 854, on the Physical Status: The Use and Interpretation of Anthropometry, indicated that "Anthropometry is the single most universally applicable, inexpensive, and non-invasive method available to assess the size, proportions, and composition of the human body" (WHO, Geneva: 1995). International studies, from different countries, indicate that the growth pattern of boys and girls living in privileged communities show characteristic differences (Eveleth and Tanner, 1976). These differences result from varying rates of growth during childhood, and also from the earlier attainment of sexual maturity by girls. The usual trend is for boys to be slightly taller and heavier than girls until the ages 10 to 11 years. From 11 to 14 years the earlier female growth spurt is manifested by mean heights and weights that exceed those of boys in the comparable age groups. By the age of 14 years, the majority of girls have passed their period of maximum growth and may have attained their maximum height.

The majority of boys are in their phase of maximum growth at 14 years of age, so that the mean height for boys becomes greater than that for girls and therefore, boys are on the average taller. Mean weight findings follows the same pattern, except that mean values for girls exceed those for boys until 14 - 15 years. This is due to the female tendency to lay down fat at puberty. Only at 15 years, do boys deposit little fat, sufficient muscle mass for their mean weight to exceed that of girls.

The growth curves of children and the heights, finally achieved by adults provide valuable indices of the health of the community, particularly in terms of nutritional status, infection and psychological stress (Eveleth and Tanner, 1976). The developed countries have over time, collected data that are recognised as representative data for children's growth and development in those countries. In America, the National Centre of Health Statistics (NCHS) has achieved an international reputation as a repository for standard measures for the growth and development of children. Other countries have developed their own standards. Debates on whether to use growth standards from other countries have gone on for a long time. Many governmental and United nations agencies rely on growth charts for measuring the general well-being of populations, formulating health and related policies and planning interventions and monitoring their effectiveness.

From as early as the 1990's, the origin of WHO Child Growth Standards culminated in the appointment of experts to conduct an evaluation of the NCHS/WHO growth reference which has been recommended for international use since the 1970s. The WHO has since developed new charts that are consistent with "best" health practices, e.g. breastfeeding and not smoking. Between 1997 and 2003 the WHO Multicenter Growth Reference Study(MGRS) was implemented. The data was from diverse countries, Brazil, Ghana, India, Norway, Oman and the USA and the study had considerable built-in ethnic or genetic variability. The eventual WHO Reference 2007 provide a technically robust tool for assessing the well-being of infants and young children and now replaces the NCHS/WHO growth reference that is based on children from a single country.

It has long been recognised that the health of a population is most accurately reflected in the rate of growth of its children, (Eveleth and Tanner, 1976). This recognition was realised by the formation of the International Biological Programme (Human adaptability) that took place from 1967-1974 (Eveleth and Tanner, 1990). Contemporary data on the growth and physical maturation of children were over time, gathered by doctors and anthropologists from all over the world.

The growth velocity curve in body weight shows two peaks in primates but only one peak in the other mammals, and that the first peak in primates corresponds phylo-genetically to the peak in the other mammals (Tanner, 1962). Many reports on the physical growth of primates have been accumulated in the past 70 years, (Lwamoto, 1998). Using some of them as a basis, Lwamoto illustrated the normative velocity curves (increment curves) of the weight of monkeys, chimpanzees and humans, and reconsidered Tanner's conclusion.

The original London growth surveys started in 1904. Regular surveys were realised and the data were used to generate standards. The British National Child Development survey has since been implemented and serves as one of the major contributors of growth data internationally. The Cuban National Growth survey of 1972 provided a model suitable for many workers undertaking to construct national standards, (Jordan , 1975).

A large number of investigations have been carried out in Europe and it is for this reason that Europeans have been chosen, certainly during the 1990's, as the base line population against which to compare data from other parts of the world. Major studies were carried out in the United States, e.g. the results of the United States Health Examination Survey (USHES) have also been used as reference data, (Hamill , 1970). Other anthropometric standards for the assessment of growth and nutritional status by (Frisancho, 1990), were also used for comparison purposes in this thesis and have since been compared to the WHO Reference 2007.

The Frisancho data of 1990, were based on a cross-sectional sample of 6,954 subjects aged from 1 to 74 years. They were derived from the first and second National Health and Nutrition Examination Surveys (NHANES 1 and II) of the United States conducted during 1971-74 and 1976-80.

Comparative studies have also been used to assess the environmental impact on the same group of people under different conditions. There is evidence that Indian children from the upper income groups compare favourably with the National Centre of Health Statistics (NCHS) norms, while the poorer South African Indian tend to be lighter and shorter (Van Rensburg , 1977). There is evidence that the height and weight of both urban and rural black children have increased over the last forty years in the case of schoolchildren, (Richardson , 1984), but not in pre-school children.

Despite these positive secular trends in schoolchildren, these findings have since been disputed by (Tobias, 1986) who maintained that, 'Third World' communities have not manifested a positive secular trend towards increased adult mean stature, they are overall still considerably smaller than their white counterparts, this may be due to heredity or environmental factors.

Some countries like Hong Kong have looked into the use of body measurements (anthropometry) for enhancing performance and reducing musculo-skeletal problems during their computer-aided designs (CAD), (Chan and Jiao, 1996). They measured eleven anthropometric dimensions from shoulder, rest height, elbow-fingertip length, and shoulder breadth, hip breadth, sitting eye height, elbow rest height, third lumbar disc-pan length, thigh clearance height, popliteal height, buttock popliteal length and stature. With the aid of the derived statistics such as mean, and standard deviations, and relevant percentiles of all the measured dimensions, a new work-place for CAD operators was designed which improved performance substantially.

Given that growth is retarded by adverse environmental factors such as nutritional habits, infections or disease, lifestyle, family structure, health care, education and sports opportunities, it is important to establish to what extent, adverse environmental factors, are responsible for the smaller stature of the South African black children? A general overview of growth and of major world studies on rural and urban factors affecting growth, was given specific focus, especially, based on these environmental factors.

Other studies have indicated associations between the amount of physical activity, energy and macro-nutrient intake, smoking behaviour, alcohol intake, and a central pattern of body fat (sub-scapular skin fold thickness and waist circumference), (Van Lenthe , 1998). The Amsterdam longitudinal Growth and Health study undertaken by Van Lenthe, indicated that alcohol intake was positively associated with sub-scapular skin fold thickness in males, and negatively associated with physical activity in females.

A large urban cohort of 6000 children in the city of Pelotas, southern Brazil, was studied by (Barros , 1990). Up to 700 variables were determined on each child. Changes in body composition during growth in healthy school age children, indicated that bone-mineral-free lean body mass (LBM) and fat mass (FM) were different for each sex, (Molgaard , 1998). The main sex difference was the earlier flattening of the LBM according to age curve for girls, compared to boys, and the higher increase in FM with age in girls. There were a later and a higher peak in LBM accretion in boys compared to girls and a nearly constant increase in FM throughout puberty in girls, while boys had no increase in FM during puberty.

International urban and rural studies were compared and contrasted to African and South African studies. The gaps in knowledge were then highlighted and an explanation as to how this research, provides some of the information necessary for further surveys in growth and development in South Africa is provided. These gaps were discussed in terms of the differences in age range of studies undertaken in these countries, the number of anthropometric measurements taken and the availability or lack of data on secondary sexual characteristics. Prevalence rates of weight and height for age and BMI for age were estimated and compared to the WHO reference 2007.

The evaluation of the nutritional status of man with regard to emaciation, obesity, growth, skeletal and muscular development was recognised as a major neglected area of human nutrition in the early fifties (Brozek, 1956). Such evaluation was primarily to depend on physical measurements of the body and comparisons with suitable standards for selected items of measurement. Since then, data on growth and development of children has been extensively collected in the developed countries. The Health Examination Survey (HES) of the National Centre for Health Statistics (NCHS) and Nutrition Examination Surveys

(HANES) in America, and others in Europe and Asia were used to construct reference growth charts that are extensively used in developing countries as "standard" charts.

In this study, the focus was on the two most impoverished provinces in South Africa, one universe (Vaalwater), was from farm workers children of school going age group and the other group (Ubombo) was from natural rural environment of in the mountainous area. The intention was to assess the impact of their environment. Hence these were “normal” children in that they were attending school and not sick but their home environment was far from ideal. The Report of the WHO Expert Committee of 1995, highlighted four definitions of what constitute a healthy population from which a sample for developing references or standards can be chosen viz; i) the population must live in a healthy environment ii) the population lives in a healthy environment and contains no overtly sick or very few clinically sick individuals iii) the population lives in a healthy environment and contains only individuals whose present good health will be demonstrated by longevity or at least by survival for some years after measurements are taken iv) the population lives in a healthy environment and contains only individuals who live healthily according to present prescriptions e.g. breast-fed infants. Many studies focus on the children below five years on the measures of nutritional status of “normal" or "malnourished" children.(Rees , 1987).

Height for age, weight for age and middle upper arm circumference (MUAC) are the most common measurements taken in the assessment of nutritional status, (Rees , 1987). Stunting (less than 85% height for age) and wasting (less than 70% weight for height) were reported in most cases (Rees , 1987). Although height for age and weight for height were the most useful measures of nutritional status, MUAC were considered the best.

Extensive reports on the adolescent growth spurt have been published in many countries (Frisancho, 1978). Comparison between La Paz and Santa Cruz European children, for example, suggested that growth and development at high altitudes result in a delay in median age of menarche of about 0.8 years.

2.1.1 Cross-sectional studies

Studies that are characterised by a single measurement occasion are called Cross-sectional Studies. These studies are relatively cheap, easy to conduct and take less time to execute and analyse. They provide good estimates of the central tendency and variation of the population. While they are the most effective in estimating the mean value of any given measurement they do not, however, allow for the estimation of individual variations in the rate of growth. Population "standards" and growth charts for clinical application are based largely on cross-sectional data (Marshall, 1977). The Report of WHO expert Committee, 1995, stipulated that if reference data are to be used as standards, the criteria for the reference population are of critical importance.

The following criteria have been established as desirable;

a) "the sample should include at least 200 individuals in each age and sex group"
b) "the sample should be cross-sectional since the comparisons that will be made are of cross-sectional nature". This is no longer essential as longitudinal data can be presented cross-sectionally with minor adjustments. The WHO report, 1995 also states that growth charts derived from cross-sectional data should not be used to monitor longitudinal data.
c) "sampling procedures should be defined and reproducible" "measurements should be carefully made and recorded by observers trained in anthropometric techniques, using equipment of well tested design and calibrated at frequent intervals"
d) "the data from which reference graphs and tables are prepared should be available for anyone wishing to use them, and the procedures used for smoothing curves and preparing tables should be adequately described and documented"

The cross-sectional studies have been used to demonstrate clear differences between "population groups" in South Africa, with white children exhibiting "superior" growth status compared to "Asians", "Cape Coloureds" and "Blacks" in that order (Cameron, 1992).

2.1.1.1 Urban rural differences

In a detailed paper on the "Urban-rural differences in the growth of South African black children", (Cameron, Kgamphe , 1991), reported on the high rates of urbanization which are characteristic of developing countries, with rates varying between 3.0% and 8.4% per annum (UNICEF, 1988). The advantages of an urban environment to children living in developed countries are universally recognised as being associated with greater absolute heights and weights and accelerated maturation (Eveleth and Tanner, 1976), (Meredith, 1979).

(Vlaoras and Laros, 1969), (Cristescu, 1969) and (Backstrom-Jarvinen, 1964), demonstrated such differences between urban and rural children in the relatively developed countries of Greece, Rumania and Finland, respectively. Improved rural environments have led, in some countries to a lack of difference between urban and rural children in, for example, Australia, (Jones , 1973) and the USA, (Hamil , 1972). It is also well recognised that children living in the informal urban areas or “shanty towns” or “squatter camps” of developing countries may not reflect improved growth as a result of their relatively poor urban environments.

In both Nigeria and Costa Rica, urban slum children had heights and weights that were not significantly different from those of rural children (Morley , 1968), (Janes, 1970), (Villarejos , 1971).

(Phadke and Kulkarni, 1971) did, however report larger urban slum children compared to rural children in Bombay. Earlier menarcheal ages have been reported for urban girls from a variety of menarcheal age studies in Finland, Poland, Rumania, India and South Africa (Eveleth and Tanner, 1976, Cameron and Wright, 1990).

A comparative study of the nutritional status of a representative sample of rural schoolchildren from Chile’s Metropolitan region between two periods 1986-1987 and 1989 by (Santana , 1996) indicated that percent age Weight for Height (%W/H) should be a better indicator of nutritional status due to the high incidence of growth failure (47.4%) which was detected in 51.9% and 30.9% in low-low socio-economic status (SES) and medium SES respectively (p (0.001)). These authors concluded that it is necessary to increase the covering of the School Feeding Programme in the rural area of Chile’s Metropolitan Region, (Santana , 1996).

Two key features that are characteristic of the new WHO standards are that they explicitly identify breastfeeding as the ‘norm’ and they also include windows of achievement for six gross motor development milestones. This new standard is attractive in that it include diverse set of countries and surveys were conducted to identify socioeconomic characteristics that could be used to select groups whose growth was not environmentally constrained (WHO, 1995). The well-off and the not so well-off populations were represented in that even the low-birth-weight (<2500g) were not excluded.

2.1.2 Longitudinal studies

Studies that are characterised by more than one measurement occasion are longitudinal in design. Data are collected on the same individuals at repeated measurement occasions. They thus allow for the estimation of individual growth rates and variation (Marshall, 1977). They are extremely difficult to conduct, time consuming and are not cheap.

The Fels longitudinal study has shown that patterns of change in body composition from 8 to 20 years of age indicate a continual increase, but a declining rate of change with age in total body fat (TBF). For percentage body fat (%BF), the same pattern as for TBF exists for females, but for males the pattern of change in percentage body fat reflects the concurrent changes in fat free mass (FFM), and (Guo , 1998). Key to any longitudinal study is the frequency of the visits.

The MGRS design of the WHO reference data was a longitudinal cohort of children who were examined in a sequence of 21 visits. Such frequently collected and well-controlled data are highly unusual. The principal rationale was to develop velocity growth charts. I this thesis only 4 visits to both Ubombo and Vaalwater were selected for analysis. Proponents of the use of growth velocity consider it a superior quantitative measure of growth compared to attained size for age (Roche and Himes, 1980). Examining velocity should lead to earlier identification of growth problems than would the examination of attained growth only. Despite their hypothesised advantage, there are far fewer velocity references than there are for attained growth due to scarcity of appropriate longitudinal databases (WHO, 1995).

2.2 African Studies

Malnutrition, disease and poverty in general are the most obvious factors affecting the growth of African children. Frequently, the ages, particularly of rural children, are estimations on the part of the investigators who at most times do not know the languages of the indigenous people. Even parents may not always know the ages of their children since no birth records are in most cases not available (particularly during the last ten to twenty years).

Twenty-six studies reviewed the growth of "Africans in Africa" between, 1949 and were published between 1960 and 1972 (Eveleth and Tanner, 1976). Another 27 recent studies were published between 1977 and 1987 (Eveleth and Tanner, 1990). Many growth studies done on the African continent were confined to the study of infants at birth, birth weights and growth and nutritional status in the first five years of life. Very little research has been conducted on adolescents and specifically on the relationship of maturational level to growth (Cameron, 1991).

2.2.1 Cross-sectional studies in Africa

Most studies done in Africa are cross-sectional in nature due to the laborious conditions and high cost of longitudinal studies. This logistical difficulty presents us with problems of obtaining accurate and detailed steps taken during the taking of measurements. Some data were obtained from records, (Higman, 1979) and these were reliant on the faith of the “slave masters” of the time. Higman obtained height data for African slave populations in Trinidad, Guyana and other British Caribbean colonies in the early nineteenth century and these were compared with those of Cuban and United States slave populations of African descent.

Slaves born in Trinidad, and Cuban and United States slave populations were compared and the findings indicate that slaves born in Trinidad and Cuba achieved final heights greater than their African born parents, but those born in Guyana were shorter, (Higman, 1979). Menarche occurred in United States two years earlier than in Trinidad. These differences in growth cannot be explained adequately by genetic variations in growth potential, but were most probably a result of differences in nutrition, infection and work regime. Modern Afro-Caribbean adult populations are about 10 cm taller than their pro genitor slave population, (Higman, 1979).

In their critical analysis paper titled “Data on birth weight in developing countries: are surveys useful? “ (Boerma , 1998) maintained that the main source of data on birth weight in developing countries is statistics from health facilities. These represent a subgroup that is markedly different from the overall population of neonates.

Cross-sectional surveys can provide a useful data source for making national estimates of mean birth weight and the incidence of low birth weight (Boerma , 1998).

Head circumferences of rural Nigerian children and the effect of malnutrition on brain growth were assessed by (Oyedeji , 1998). They concluded that the mean head circumference values of malnourished children of both sexes fell mostly below the values for their well-nourished age counterparts by over two standard deviations below Tanner’s 50th percentile curve. For the boys, the curve for the malnourished children fell by over one standard deviation below the curve for their well nourished age mates. The reduced head circumferences found in malnourished children may have serious implications for their future performance and achievement. The authors maintain that sufficient community concern and appropriate world action aimed at eradicating protein energy malnutrition should be solicited.

Another cross-sectional study assessing the nutritional status of Nigerian adolescent girls living in two areas of South Eastern Nigeria compared rural girls to urban girls in terms of menarche, (Brabin , 1997). Mean heights and weights of rural girls were around (-1) Z-score below the British reference median. About ten percent of rural and five percent of urban girls were stunted or were placed at 2nd centiles British 1990 reference values.

A study done in the highlands of Lesotho, a neighbouring country in the South-Eastern part of South Africa, was aimed at evaluating the nutritional status of the population of the Mohale Dam catchment area before the construction of the dam commenced. These village children from about 395 households indicated stunting and 17.5% prevalence of goitre in 10 - 14 year old children (Jooste, , 1997). Dietary evaluation showed high initiation rates of breast-feeding, as well as long duration of breast-feeding.

In Kenya, (Njokah, 1997), determined height and weight factors over the ages. The intention was to contribute the search for a simple and easily reproducible formula for assessing fitness and growth of the human body.

2.3 South African Studies

2.3.1 Cross-sectional studies in South Africa

(Tobias, 1985), in a detailed analysis of the history of physical anthropology in Southern Africa, cites 49 publications from 1821 to 1985 on the growth of black children in South Africa. Of these 49 studies only five were related to rural children (Leary, 1968); (Richardson, 1977); (Richardson, 1984); (Kustner , 1984) and of these, three assessed infants (0-5 years) and two (Leary, 1968) ;(Kustner , 1984) assessed school children.

(Leary, 1968), maintained that a review of South African literature showed that there had been very few surveys of body measurements and nutritional status among rural black children. He undertook a survey of Pedi schoolchildren in order to obtain objective data concerning their physical development, state of nutrition and diet. The measurements taken were weight, height, cristal height, pelvic breadth, biacromial width, ulnar length, arm circumference, midcalf circumference, head circumference, upper arm skin fold, sub-scapular skin fold and para-umbilical skin fold. The findings demonstrated that Pedi children were, age for age, smaller and lighter on average than children from England and America. The Pedi boys were heavier than Pedi girls until the age of 15.0 years. From the age of 13.0 years in the boys and 12.0 years in the girls, Leary found mean values for weight and height to fall from approximately the Boston 10th. centiles to below the 3rd. centiles. The height/weight curve of the Pedi girls was significantly lower than that of Boston girls.

(Kustner , 1984), launched their investigations in response to what seemed to be a crisis situation where a quick and reasonably reliable method was required to test children for evidence of acute malnutrition resulting from severe and prolonged drought conditions during 1982/1983 in rural Kwa-Zulu Natal, one of the nine provinces in South Africa. Children were selected at random from drought-stricken areas and compared against controls with regard to their respective weights and heights. On the basis of the predetermined sample sizes employed, (Kustner , 1984) found no significant difference between the groups and no difference was found when these children were compared with urban white children attending crèches in the capital city.

These two studies had the limitation in that they were cross-sectional. Thus no determination of growth rates could be made from the data. Longitudinal studies are necessary to investigate growth rate and individual variability. Only three longitudinal studies had been reported in South Africa by then. Few more studies have since been undertaken, for example those of (Bowie , 1980), (Cameron , 1985), (Chaning-Pearce and Solomon, 1986) and that of (Henneberg and Louw, 1989).

(Bowie , 1980) published the first prospective 15-year follow-up study of kwashiorkor patients and their sibling controls. In their analysis, the data were analysed cross-sectionally, the authors ignoring the longitudinal aspect of the study. Thereafter, (Cameron , 1985) used the longitudinal curve-fitting techniques to investigate the long-term effects of childhood kwashiorkor in Cape 'Coloured' children. They demonstrated that, provided proper treatment is available, children experiencing an early nutritional insult show few differences from their peers who live in the same socio-economic conditions, but that the process of maturation is affected in that pubic hair development and menarche are delayed in girls, while the timing of the adolescent growth spurt and the initiation of breast development are not dramatically affected.

(Chaning-Pearce and Solomon, 1986) investigated the height and weight of black and white Johannesburg children. Their findings were that, in both height and weight, white children experienced greater increments and earlier, more intense growth spurts than black children. Black boys were found to be similar to white boys up to the age of about 13.0 years. In contrast black girls were found to be shorter than white girls. The data showed that in both groups males started and completed their height spurt much later than females. White males were growing at an average rate of 1.5 cm/year and black males at 2.8 cm/year for the age range 13-15 years.

The study of menarche and growth by (Richardson and Pieters, 1977) was the only one during that time to record menarche and breast development of urban and rural black South African girls from the lower socio-economic group. Their findings were that the weights of the non-menstruating girls were significantly lower than those who menstruate, their percentage body fat was greater than 17.0% and half of them were older than 15.5 years. The mean menstrual age of black urban girls was 13.0 years and that of black rural girls 14.1 years, compared to that of United States girls at 12.7 years. The commencement of breast development was found to be 11.1 years in urban and 11.0 years in rural girls compared to that of British girls at 11.2 years.

From 1986-1995, one of the largest mixed longitudinal studies of child growth in South Africa included the study of 4000 Cape Coloured children by (Henneberg and Louw, 1989, 1993, 1995, and 1998). These authors also reported on the effects of month of birth on the body size, estimated average menarcheal age in the higher SES of the Cape Coloured girls and the relationship between anthropometry and functional tests. Their assessment of the average menarcheal age of higher socioeconomic status of the urban cape coloured girls provided the most comprehensive data for comparison with other local studies.

A pilot study on body fat estimation in black South Africans was performed on healthy black volunteers by (Oosthuizen , 1997). They compared the use of estimating body fat by underwater weighing (using three different equations), skin fold thickness measurements and bioelectrical impedance. They concluded that skin fold thickness measurements and bioelectrical impedance are unproblematic means for estimating percentage of body fat and suggested that further research is needed to develop ethnic specific equations within racial parameters.

The author was offered the Senior Research Scientist Fellowship to study the estimation of human body composition using the Biological Impedance Analysis (BIA) techniques at the University of Chicago, USA. This technique deployed the use of labelled water (using deuterium) to estimate total body water and the electrical impedance techniques to estimate Lean Body Mass (LBM) and the Fat Free Mass (FFM). These techniques involved computations of measurements as a function of height and weight of the subjects. Although these estimates were suitable for animals at abattoirs, the results in humans were not conclusive.

2.3.2 Conclusions

Our current knowledge of the growth of rural black children from cross-sectional studies is that they appear to grow below the American or British norms and perhaps delay in some aspects of their secondary sexual development. Such knowledge is limited by the cross-sectional study design and the lack of internationally accepted assessment methods for secondary sexual development.

It is desirable to know the exact ages of subjects under study. (Kahn and Freedman, 1959) argued that in under-developed areas, the exact age of children is often unknown and that this may be one of the reasons why few attempts have been made to establish height and weight standards for African children.

In this thesis, exact ages were obtained from school registers and where there was doubt, the children were asked their birth dates in their own language. When they did not know, they were referred to their parents at home who usually confirmed dates. In his cross-sectional study, (Leary, 1968) studied Pedi schoolchildren and stated, “As in other primitive communities, exact age is not always known, though it is usually possible to determine the year in which the child is born. Age was reckoned as on 1 July 1965, by calculating 1965 less the year of birth".

(Leary, 1968), concluded that height and weight give an index of the nutritional status of the children and that head circumference contributed little valuable information after the age of 5 years. He placed great value in the combination of mid-upper-arm circumference and upper arm skin fold measurements in the calculation of the proportions of muscle and subcutaneous fat and suggested dispensing with other measurements.

In all parameters, mean figures for Pedi children were well below the mean figures of the reference Boston data. Studies in sub-Saharan Africa have shown the relationship between climate and weight/height ratio (Hiernaux , 1975). They compared two populations, one from the rain forest and the other from the open country. They concluded that the shorter mean stature of the rain forest populations seems to be due to the selective pressure exerted by thermal stress in the hot and wet biome. (Slome , 1960) compared the weight, height and skin fold thickness of Zulu adults residing in the housing scheme in Durban, Kwa-Zulu Natal province. They concluded that schoolgirls were taller and heavier in the housing scheme than rural girls not in the housing scheme.

A growth and development monitoring programme in South Africa is necessitated by the fact that an infant mortality rate of 90/100 live births in 1982 translated into a death rate of 0.4% of the population per year as opposed to 0.01% of the population of a developed country like the United Kingdom (Cameron, 1992). This rate, which is 40 times greater than in a developed country means a loss of 127,000 children per year before they reach the age of 5 years, which translates to 350 children dying per day or 15 per hour.

The other need to monitor human growth is the general lack of data relating to the pattern of human growth in the African continent. This is also supported by the trends in urbanization which was estimated as 3.5% coupled with a population growth rate of 3.0% (Cameron, 1992).

2.3.3 South African longitudinal studies

2.3.3.1 Longitudinal studies

(Cameron and Kgamphe, 1993) analysed the studies of the growth and development of South African black children. At the time, there have been relatively few studies which were longitudinal in design. (Tobias, 1985) in a characteristically comprehensive review of the history of physical anthropology in Southern Africa listed only 49 published studies from South Africa up to 1985. Almost all of these were cross-sectional in design and related to the growth of children under 5 years of age. Yet studies of the growth and development of children over 5 years of age are absolutely essential for the effective monitoring of environmental impact on the growth, and thus the health and well being, of children (Goodall, 1979). In addition, there has been much debate in South Africa on the rationale underlying the use of “international” as opposed to “national” or “local” growth standards or norms (Goodall, 1979), (Okeahialam, 1975).

Regardless of the argument for or against the use of national standards, the South African proponents of the “international school of thought” have resisted the introduction of national norms, presumably from a belief that the international norms are clinically effective in the assessment of child growth. The result of this resistance is a relative paucity of growth studies on children over 5 years of age. However, in order to effectively reach some degree of consensus as to which growth norm is most appropriate, it is essential to have baseline data on the growth and development of South African black children. In this thesis, the baseline database is also compared to the WHO Reference 2007.

In 1985 and 1986, in an effort to counteract this lack of information, the Human Growth Research Programme of the University of the Witwatersrand, under the leadership of Prof Noel Cameron, with the author as the research officer of the Programme, was initiated as two mixed longitudinal studies of the growth and development of rural black children. Since then a number of publications have detailed the growth of such children in comparison with that of American and British children (Oyedeji, 1984); (Waterson, 1982); (Moodie, 1961); (Robertson, 1960); (Wittman, 1967); (Snedcor, 1967); (Lentner, 1984); (Potgieter, 1990); (Coulter, 1988) and (Henneberg and Louw, 1989) among others. Prevalence rates for low weight-for-age, height-for-age and BMI-for-age were calculated using the new WHO standards.

Even though black urban areas in South Africa, such as Soweto, are relatively well developed, comparisons of urban and rural children are few in number. (Richardson, 1978) documented the separation of height and weight curves after the childhood period in urban and rural black children, with urban children being superior throughout adolescence although there was a convergence of growth curves towards adult ages. (Chaning-Pearce and Solomon, 1968), found height and weight increases during growth to be more rapid in white than in black urban children from Soweto and Johannesburg and for adult heights and weights, to be significantly greater for whites. (Wagstaff, Reinach, Richardson, Mkhasibe and De Vries, 1987) on analysing of the growth of “average” Soweto children demonstrated their poor growth when compared to the American National Centre for Health Statistics (NCHS) reference charts. These studies were, however, all “average” or “representative” samples of black children.

A more comprehensive longitudinal study by (Henneberg and Louw, 1989, 1995, 1999) included twenty anthropologic variables and a sample size of 4000 Cape Coloured children. This study provided valuable comparative data and the estimations of the timing of menarche in this population as compared to their western counterparts.

More studies with increased sample sizes are needed in order to generate national growth charts. As part of the second year science and medical students’ programme at Wits Medical School, University of the Witwatersrand, the author collected more data, as a follow-up on the data collected by Prof. Cameron and his team from 1986-1992.

The new sets of measurements, Kgamphe (KGA) data, were compared to those of Cameron-Kgamphe (VAL) in order to determine if there was evidence of any improvements in the growth and development of Vaalwater children particularly under the new political dispensation in South Africa. Although sample sizes were small individual assessments of height-forage, weight-for-age and BMI-for-age were possible. Thanks to the new WHO Reference 2007 database and its AnthroPlus software for analysis. Chapter 3 of this thesis covers the universe and the data cleaning process.

CHAPTER 3

MATERIALS AND THE SAMPLE USED IN THE STUDY

3.0 MATERIALS AND METHODS

3.1 The Universe

The samples consisted of two groups of rural children from Ubombo, Kwa-Zulu Natal, and Vaalwater, Limpopo, South Africa. The studies were initiated by Prof. Noel Cameron, the then head of the Human Growth Programme, in the department of Anatomy and Human Biology, University of the Witwatersrand Medical School. He played a major role in the provision of expertise and the techniques for the taking and standardization and accuracy of the measurements taken. These studies started in 1985 at Ubombo (UB) and in 1986 at Vaalwater (VAL) and were of mixed-longitudinal nature by design. Children were examined twice a year (January and July) in Vaalwater and once a year (September) in Ubombo.

The reasons why the two communities were selected were because the VAL community was a farm dwellers community with the entire children resident within the farms and having a supply of 80 kg mealie meal per family per month. The families had stable jobs within these farms and had one of the owners as the paediatrician providing medical services to the farm dwellers children. The assumption was that these children would should the improved growth conditions due to the available health care. These children were hence representative of the local children as all local children were farm dwellers children.

All school children who were at school on the day of measurements were all measured. There was no selection of a random sample. Children who were absent were not followed up and would miss the visit.

The UB children were children of a rural setting where parents were having their own houses in a mountainous area without any infrastructure. Most parents of these children were migrant labourers who worked in the cities around the province or in other provinces where they could find employment. Their natural environment provided an opportunity to compare the growth and development of rural children in a controlled setting (VAL) as compared to an uncontrolled setting where the children depend solely on their parents and environment for survival. All children present at school on that particular day of measurement were also measured as it was the case at Vaalwater.

The logistical difficulties encountered in longitudinal growth research in rural areas entail problems of follow-up. Most of the time, it was virtually impossible to be certain that the same children would be present for measurement on each occasion.

Thus, once the site of the investigation had been selected, every child was measured, regardless of whether they had previously been involved in the study or not. Therefore some children were present on all occasions and others only on some occasions. Such a sample is referred to as a “mixed-longitudinal” sample and can be analysed by means of a variety of a priory statistical strategies to overcome the problems of missing data.

Consent forms were sent to the schools and parents were called to come to the schools and the study was explained to them in their local mother tongue. The children were sent back to discuss with other members of the family and return signed forms the next day. It was easier at VAL as the farm workers were more organised and were having a communication structures through their work environment. There was 100% compliance and parents were very supportive in ensuring that each time measurements were taken, all children attend school that day. The UB sample was dependent on available parents and some children were helped by their neighbours and some submitted their signed forms much later when parents have been to visit them.

There were nine regular measurement occasions at Vaalwater and six at Ubombo. Fixed dates were set and these were maintained each year. Measurers were the University of the Witwatersrand medical and science students who would on weekly basis take measurements from each other and determine their measurement errors per type of measurement taken.

The training of taking of measurements took place for a month before each group of measurers were taken on site each year. Methods were standardised by ensuring that each tenth measure were repeated and checked for consistency. This was checked against the measurements taken by Prof. Noel Cameron as an expert auxologist and each two students taking the measurements from the same child would compare their results for consistency. If the tenth measurement were not the same or similar to the first set of measurements, that batch of ten children would be measured again. Otherwise the error range was determined and used to correct that batch of ten children. This practice was common especially on the calibration of the bathroom weighing scale. See next section on each method used in order to see the exact limits set before measurements were repeated.

Subjects whose birth-dates were suspect or not known, those who had names changing at each visit and those with measurements that are extreme outliers, those younger than 6 years of age and beyond 18.99 years were excluded.

3.2 Sample

The relationship between all anthropometric variables from one individual necessitates them being edited together. After data collection, the normal procedure involved recording, which may lead to number transposition errors, computerisation, which may lead to punching errors and ideally, should be followed by editing.

Data cleaning employed in this study, helped to ensure that the final data used in the final analysis was free of errors and fully representative of the true measurements taken. Detection and correction of these errors was an important procedure for several reasons; to give an indication of the quality of data collected, and adequate Sample size.

3.3 Literature Review of Data Editing

Many studies do not clean all their data but select all data outside predetermined limits for editing. The major reason is that mean and variability can be accurate if only few data are edited. (Jordan et al., 1975) in their Cuban studies analysed only 21 % of their subjects. (Cameron, 1977), looked at only 8.58% of the London County Council's 1966-1967 Growth Survey. (Duquet , 1977) described a method of cleaning data in growth studies. He effectively looked at 5.8% of his data for editing and detected 5.5% of data that needed correction. (Karlberg , 1976), in Sweden, screened all his subjects and produced scatter-plots of all individuals' measurements and then selected a few which required scrutiny.

(Cameron, 1977) and (Duquet, 1977) concluded that, an anthropometric value forming part of a measurement set should not be edited without regard to the other measurements in that set i.e. in isolation. Also, that editing limits in terms of Standard Deviation Scores (SDS) or Z-Scores is an effective technique for specifying subjects for scrutiny. (Jordan, 1975) used the 3rd and 97th. centiles editing limits.

In this study a cut-off point of (+-) 2SD was used to isolate the suspects for scrutiny followed by plotting the Z-scores per variable to assess the Z-score profile. Uneven undulating profile was further tested at (+/-) 3SD for each age and sex. This wide range was chosen in order to be as inclusive as possible because smaller ranges affect means and sample size. Many large scale cross-sectional surveys however, have been published devoid of all mention of editorial procedures (Cameron, 1977). Local studies by (Kark and Le Riche, 1944), (Kahn and Freedman, 1959), (Smit, Potgieter and Fellingham, 1967) and (De Villiers, 1987) for example, make no mention of the editing procedures.

Editing procedures have been considered by (Freund and Hartley, 1967), to be in two stages: i) detecting errors, and ii) deciding what to do with data which are found to be in error. (Stuart, 1966) indicated some of the procedures that have been developed. Some are based on simple “one item at a time" internal consistency checks. Others employ complex logical networks of interlocking checks and balances that may serve for the checking procedures. The problem of the detection of erroneous data was dealt by (Morice and Fermanian, 1979) in their attempt to detect patients outside the specified groups

(Wenneberg, 1988) rejected data if either weight or height fell outside the reference standard value (+/-) 6SD or if the relation between weight and height was outside (+/-) 6SD. (Karlberg , 1976) who’s preliminary editing methods were based on the longitudinal nature of their design, formed a basis for the technique used in this study.

The use of standard deviations as cut-off points has been reported extensively in the literature even in major reference studies. For example, (Dibley, Goldsby, Staehling and Trowbridge, 1987), they stipulated specific critical criteria for the selection of the database to be used as an international growth reference and the National Centre of Health Statistics (NCHS) and the Centre of Diseases Control (CDC) international growth reference data was identified as being the most suitable. They proposed the Z-scores as the new method to overcome the problems associated with expressing anthropometric indicators as a percentage of the reference median. Anthropometric indicators, when expressed as standard deviations or Z-scores, reflect the reference distribution and are comparable across ages and across indicators (Keller, Filmore, 1983). The WHO recommended that z-scores or standard deviation(SD) scores be the default classification system used to present child nutritional status including at the extreme ends of the distribution and allow derivation of summary statistics (means and SD’s of z-scores), (WHO,1995).

3.4 Editing Longitudinal Data

Longitudinal data provide information on the increments of each variable thus giving the rate of change of measurements over time, the velocity. Individual velocities and mean velocities can be computed and compared to the international velocity norms in two ways, as i) Individual velocities and as ii) mean velocities.

Among technical issues discussed by the WHO advisory group that met in March 2007, was to review the uses of growth velocity standards in clinical practice, public health programmes, and research setting and to discuss available strategies and related methods for the construction of velocity charts (WHO, 1995). In terms of whether increments (using measurements) would be used in modelling or using changes in z-scores would be used in generating standards, the complexity in applying growth velocity using available presentation formats associated with the z-score scale was recognized. Editing of longitudinal data included editing of outlier measurements and not their z-scores.

3.4.1 Individual velocities

Velocity is a change in value expressed in units per time period, while an increment is a change in value expressed in units e.g. g/time and grams respectively. Individual's variable velocity is the difference between a measurement on that individual at one occasion and the measurement on the same individual on the subsequent occasion over the duration between measurements. The age at that velocity is the average midpoint between age at measurement one and at measurement two respectively. This velocity may be compared to the accepted international velocity reference charts by plotting the individual's value on the reference charts.

The lack of correlation between growth measurement increments makes it difficult to define what constitutes a normal or abnormal sequence of increments (WHO, 1995). The recommendation is that velocity be examined always in conjunction with related measures of attained growth. The new WHO velocity standards obtained at www.who.int/childgrowth/en were used for comparison in this thesis.

3.4.2 Mean velocities

Individuals who share the same average age and of the same sex are grouped together and their variable means determined. The mean age of a velocity may be determined as the average age between the two age groups. Subjects between ages 5.0 and 5.99 i.e. age 5.0 years on one occasion and subjects between ages 6.0 and 6.99 i.e. age 6.0 years on the next occasion, will have a mean age of 5.5 and 6.5 years respectively.

3.5 Standards

3.5.1 NCHS, WHO, CDC and London data

NCHS reference data was used to compare the distance measurements from UB and VAL against the 5th, 50th and 95th centiles of NCHS. WHO and CDC data were used to plot the BMI-for-age per sex for UB and VAL and then compared to the CDC BMI-for-age 5th, 50th, 85th and 95th percentiles. London data was obtained from (Cameron, 1977), in his PhD thesis of London County Council, 1966-7 Growth survey. Height and weight standard deviation parameters were compared to those of Ubombo (UB) and Vaalwater (VAL) and those of Sweden, and NHANES. The prevalence rates (%) for weight-for-age, height-for-age and BMI-for-age for both boys and girls expressed as z-scores; viz; WFAZ,HFAZ and BAZ were computed against the WHO Reference 2007 data using the WHO AnthroPLUS software.

Different international growth charts compare relatively favourable because of the large sample sizes used in their construction. They nevertheless had small differences for different variables, only height and weight were used for comparison. Swedish data compared well with London data but the latter did not have four skinfolds that were needed as reference data for the analysis in this study. SD's from this study were used to compute SDS in the final determination of SD profiles in suspect subjects, this allowed for smooth limits for editing.

3.6 Editing UB and VAL data

The editorial procedure applied to Ubombo (UB) and Vaalwater (VAL) data involved five stages: firstly a cleaning stage involved a gross check to isolate repeats, subjects without birth-dates and subjects without data. These were excluded and removed from the files. This process was achieved using STATGROW program, a dedicated growth research computer package. In this way twins and other duplicate subjects or those with unconfirmed birth-dates were singled out. Secondly, the mean and the SD's of the cleaned data were computed and Thirdly, SD scores (SDS) were subsequently realised. This was followed by manual computation of mean (+/-) 2SD in order to list the outliers for scrutiny. Scatter-gram plots were made to confirm the outliers and also to pick up new outliers. The fifth stage was to plot the SDS for each suspect subject for all eleven variables. This critical stage determined the exclusion or inclusion of single variables or whole subject. In other cases number transpositions were corrected and variables were then included.

(Cameron, 1977), pointed out that in order to accept and take account of the relationship between anthropometric parameters on one individual, it would mean that each measurement must be compared with appropriate norms or standards, but by changing all the values to SDS an across-the-board comparison was possible. The SDS in the normal child would not be very different from each other and hence a flat Standard Deviation Profile (SDP) would result. This was demonstrated by (Ross and Wilson, 1974) in their attempt to devise a stratagem for proportional growth assessment. In this way, subjects with uneven SD profile were singled out for further investigation. This was accompanied by specifying limits within which the SD profile would oscillate. The final limit of (+/-) 3SD was used to exclude variables beyond this point in order to give a final clean data.

Taking accurate and reliable measurements can only be possible if training is provided to those who will take them. The following methods and techniques were applied.

3.7 Methods

3.7.1 Standardization

Standard growth measurement procedures were followed. Before any site visit, thorough training sessions of science and medical students from the University of the Witwatersrand were undertaken to make sure that they are familiar with recommended measurement protocols, as well as ensuring that standardization sessions by Prof. Cameron as an expert reference point was attended. Each student was made aware of their error range per variable, the permissible error of less than 100 grams in weight and less than 10 mm in height was applied. The importance of obtaining correct birth dates and hence the correct ages of all the subjects were also emphasized. All children were measured standing except for sitting height measurements. The following methods and techniques were directly taught by Prof. Cameron as reflected in his publications (Cameron, 1978) and (Cameron, 1984), and his personal participation in taking of measurements used in this thesis.

3.7.2 Height

Harpenden Stadiometer is used to measure stature. A portable form of the stadiometer was used to take height measurements in centimetres. All children were measured standing and without their shoes on, heels together and flat on the ground such that, heels, buttocks, and shoulders are in contact with the vertical backboard of the stadiometer, facing the measurer, and the head position and the line of vision in Frankfurt plane. Shoulders should be relaxed, and where possible a weight be put on top to apply pressure on the hair. The subject is advised to take a deep breath and stand tall. Stretching of the spine is assisted by gentle upward pressure applied beneath the mastoid process by the measurer the subject is again told to stretch up and keep heels on the ground and stature is read counter to the nearest completed unit.

3.7.3 Sitting Height

Sitting height is a measure of the length of the trunk and head taken in a sitting position. The subject sits on the sitting-height table so that the head is in a Frankfurt plane, the back is straight, thighs horizontal such that the tendons of the biceps femora are clear of the table. The feet are supported on the footboard and the hands are rested on the subjects lap. The subject is told to sit up, and following the same technique as those on taking the height measurements, readings are taken. The subject is stretched up to reduce the effect of diurnal variation and aids in the reproducibility of measurement.

3.7.4 Weight

A bathroom scale, calibrated with known weights was used to take weight measurements. The subjects were weighed with minimum of standard clothing e.g boys with under wears only and girls with panties only, in a protected setting far from boys. Boys are measured by boys and girls by girls. Under wears were weighed before and corrected for by adjusting the machine to zero when clothing is placed on it. The presence of visible oedema was not recorded.

3.7.5 Circumferences

3.7.5.1 Head

The subject stands sideways to the measurer with the head in the Frankfurt plane and arms relaxed. A Tape Measure is used and if one is right-handed, the body of the tape is held in the left hand, with some 6-8 cm of tape extending from it. This part of the tape is then placed behind the head(most posterior protuberance of the occipital region) and grasped with the index finger and thumb of the right hand; keeping the left hand still, the tape is pulled out from the housing and brought around the outside of the head; the left hand then comes around from opposite direction(most anterior protuberance of the forehead) to meet it; the tape housing and end are exchanged-housing to the right, end to left hand and the tape pulled into contact with the head. Enough tension is applied so that the tape rests against the hair but does not compress the tissue.

3.7.5.2 Relaxed upper arm

The subject is positioned as for the measurement of head circumference with the left arm completely relaxed and extended by the side without contraction of the biceps. A mark is drawn on the lateral side of the upper arm, midway between the acromion and olecranon. The tape is then passed around the arm as previously described so that it is touching the skin but not compressing the tissue, and the measurement read to the last completed unit. The tape must be in a plane perpendicular to the long axis of the limb.

3.7.6 Diameters

3.7.6.1 Biacromial Diameter

Using an Anthropometer, it is imperative to ensure that maximum shoulder width is being obtained. Errors of 2-3 cm may be encountered by the subject trying to broaden the shoulders by standing too stiffly. The subject needs to relax the shoulders, then, sitting or standing directly behind the subject, the observer runs the palms of the hand along the lines of the shoulders from the base of the neck outwards, feeling their natural forward and downward slope and relaxing any tension. The most lateral borders of the acromial processes are then identified by palpation and, holding the anthropometer so that the blades rests medially to the index fingers and over the angle formed by the thumb and index finger, the blades are applied to the most lateral borders of the acromial and each pressed firmly against these protuberances. Sufficient pressure is applied to minimize the thickness of the overlying soft tissue and the diameter is read to the last completed unit of the counter.

3.7.6.2 Biiliac Diameter

This is a relatively difficult measurement to take. With the subject heels together, back to the observer and arms folded or stretched out, the anthropometer blades, held in the same manner as when measuring biacromial diameter above, the blades are brought into contact with the iliac crest from behind and at a slight downward angle to ensure clearance of subcutaneous fat deposits immediately behind the crest and buttocks. By “rolling” the blades over the crests, it will be seen on the digital counter that at a particular point the distance between them is greatest; this is the pint of measurement.

3.7.7 Skinfolds

3.7.7.1 Triceps Skinfold

Using the Harpenden skinfold calliper to take measurements, the subjects stand with their back to the measurer and the arm should be relaxed with the palm facing the lateral thigh. The tips of the acromial process and olecron are palpated and a point halfway between is marked on the skin. The skinfold is picked up over the posterior surface of the triceps muscle 1 cm above the mark, on a vertical line passing upwards from the olecranon to the acromion, and the calliper jaws are applied at the marked level is held face up and the fingers of the right hand relax their grip to ensure that the calliper exerts its full pressure of 10 g/mm2 . the left hand maintains the pinch throughout the measurement, a firmer grip usually prevents to stabilise the reading, and otherwise the reading should be taken two seconds after the calliper is applied. The dial of the Holtian calliper is calibrated to 0.2mm but the measurement can be estimated to the last completed 0.1mm

3.7.7.2 Biceps Skinfolds

The subject faces the measurer with the arm held relaxed at his side and the palm facing forwards. The skinfold is picked up over the belly of the biceps and I cm above the line marked for the upper arm circumference and triceps skinfold on a vertical line, joining the center of the antecubital fossa to the head of the humerus. The calliper jaws are applied to the marked level.

3.7.7.3 Sub-scapular Skinfold

The subject stands as for triceps skinfold with the shoulders and arms relaxed. Determine the inferior angle of the scapular below which the skinfold should be taken. To locate this point on the obese subject palpate the medial border of the scapular and run the fingers of the left hand downwards along its full length until the inferior angle is located. The skinfold is picked up immediately below the inferior angle of the scapular with the fold either in the vertical or slightly inclined, downwards and laterally, in the natural cleavage of the skin.

3.7.7.4 Suprailiac Skinfold

The subject stands sideways with arms folded and the skinfold is picked up vertically about 1 cm above and 2 cm medial to the anterior suprailiac spine. The caliper is applied just below the fingers. This site varies, depending on the position of the superior anterior iliac spine and may be in the mid-axillary line or anterior to it.

3.7.8 Secondary Sexual characteristics

3.7.8.1 Males

3.7.8.1.1 The Testes

Prader Orchidometer was used to measure testicular volumes of both the right and left testicles by palpation. The volume of adult testis varies between12 and 25 ml when measured by this technique

3.7.8.1.2 Pubic Hair

The increase in distribution of the pubic hair, like the development of the genitalia may be described in five stages. The stages are based entirely on the distribution of the hair and not its density. The observer must not classify sparse hair as being in a lower stage than its over-all distribution allows;

Stage 1: there is no true pubic hair.

Stage 2: sparse growth of light pigmented hair which is usually straight or only slightly curled.

Stage 3: the hair spreads over the pubic symphysis and is considerably darker and coarser and usually more curled.

Stage 4: the hair is adult in character but covers and area considerably smaller than in most adults without spreading to the medial surface of the thighs.

Stage 5: the hair is distributed in an inverse triangle as in the female and has spread to the medial surface of the thighs but not up the linea alba or elsewhere above the base of the triangle.

3.7.8.1.3 The Breast

During puberty the horizontal diameter of the male areola increases on average from about 14mm to about 20mm. the vertical diameter increases from about 11.3 to 17.0 mm. in many boys enlargement of underlying breast tissue, although temporarily, does occur.

3.7.8.2 Females

3.7.8.2.1 The Breasts

For descriptive purposes, breast development can be divided into 5 stages:

Stage 1: the infantile stage which persists from immediate postnatal period until the onset of puberty.

Stage 2: the “bud” stage. The breast and papilla are elevated as a small mound and the diameter of the areola is increased.

Stage 3: the breast and areola are further enlarged like a small mammary gland with a continuous rounded contour.

Stage 4: the areola and papilla are further enlarged and form a secondary mound projecting above the corpus of the breast.

Stage 5: adult stage with smooth rounded contour without the secondary mound present in stage 4.

3.7.8.2.2 Pubic Hair

The five stages used to describe pubic-hair growth in girls are essentially the same as those for boys.

3.7.8.2.3 Menarche

Age at menarche was estimated using the status quo method. Each subject was asked her exact age at the time of the questioning and whether or not she has yet began to menstruate. Questions were asked by female measurers who recorded “yes” answers for each age.

3.8 Nature of the Population Studied

Ubombo (UB) and Vaalwater (VAL), are situated in the two most impoverished provinces in South Africa, Kwa-Zulu Natal and Limpopo respectively. They are similar in terms of poverty and rural setting. They both did not receive water and electricity services and had very little infrastructure. Both areas had no public toilets and were characterised by high unemployment rates, small households, high number of children per household, few families owning homes, without telephone, no stoves, either electric or gas but used wood as main source of heat, few TV’s, few with radio or stereo, few owning a car or bicycle and generally with minimum assets owned. Eating was minimal, this was only in the evening as they would skip other meals particularly breakfast and lunch. Those with education were few.

3.8.1 Ubombo (UB)

Table 3.1

Table of Key indicators for Kwa-Zulu / Natal province where Ubombo is located (1996) (these are provincial indicators)

Indicators	Kwa-zulu/ Natal (%)	% of SA
Functional Urbanization	77.9	65.5
Literacy rate, (1) 1991	58.7	61.4
Pupil-teacher ratio, 1993	37	32.0
Non-School attendance, (2) 1991	11.3	9.6
Unemployment rate, 1994	32.2	32.6
Male absenteeism rate, 1994	-14.5	-5.0
Life expectancy	62.6	63.4
Infant mortality (3) rate, 1991	44.7	41.8
Hospital beds per 1000,1992	5.8	5.1
Medics officials per 1000,(4) ‘92	0.5	0.6

Central Statistical Report: (CSS) 1996

(Brendan, 2008), analysed South Africa’s provinces and indicates that KwaZulu-Natal has special challenges, and scores the worst amongst the nine provinces in terms of HIV/Aids and TB. Adult and child mortality are the highest in the country but with no access to private hospitals by the current 8.6 million people living there. The education system has ultimately produced good results (64% Matriculation) and 14% university entrance pass rates and with 0.25% of the people holding matriculation certificate.

Government intervention (R2.6-billion) in the provision of houses indicates that houses are being built faster than in any province other than Gauteng, but behind in the provision of water and electricity inside their homes. The province ranked 6th in the business Times analysis based on the Provinces’ score-card with Economy, Education, Health, Living, Crime and overall score as the indicators.

The significance of different living conditions i.e. reflected by the Gross Domestic Product, different health care facilities indicated by life expectancy for women and infant mortality rate as well as quantitative and qualitative differences in the diet of the local communities of UB and VAL, were assumed to account for the differences observed in their growth patterns. In the study on the Menarcheal age in Europe, (Danker-Hopfe, 2005), concluded that the Northwest-Southeast gradient in mean menarcheal age in Europe, cannot be explained in terms of the environmental factors mentioned above but these differences were mainly due to genetic variation. This conclusion calls for studies with standardized multifactor design, including as many parameters as possible because indicators of social stratification may vary in sensitivity from one country to another and from one location e.g. (UB) to another e.g. (VAL).

3.8.2 Vaalwater (VAL)

Table 3.2

Table of Key indicators for Vaalwater (VAL)

Indicators	Vaalwater (%)	% of SA
Functional Urbanization	12.1	65.5
Literacy rate(1).* 1991	52.7	61.4
Pupil-teacher ratio, 1993	35	32
Non-School attendance,(2) 1991	8.6	9.6
Unemployment rate, 1994	47.0	32.6
Male absenteeism rate, 1994	-28.1	-5.0
Life expectancy	62.7	63.4
Infant mortality (3) rate, 1991	57.0	41.8
Hospital beds per 1000,1992	4.7	5.1
Medics officials per 1000,(4) ‘92	0.2	0.6

Central Statistical Report: (CSS) 1996

(1) Literacy rate: The percentage of persons thirteen years and older with at least a Standard 5 qualification.

(2) Non-School attendance: The percentage of children aged six to fourteen years not attending school

(3) Infant mortality rate: The number of live born children who die under the age of one year per 1000 live births.

(4) Medics officials per 1000 population: Includes all medical officials in private practice and government service.

Limpopo was regarded as the safest place to live (Brendan, 2008). It is one of South Africa’s poorest provinces with an average household income of R4 550.00 a month (about 22 USD per day), and with the highest unemployment rate at 52% as compared to

47% in 1996. Mining is the main source of earnings and employment. The HIV/Aids infection rate is at 7.3% is less than half that of Kwa-Zulu Natal. Life expectancy in Limpopo is about 55.6 which show a dramatic decrease from 62.7 in 1996 as per CSS statistics of 1966. More than 80% of the families live in formal housing schemes with the lowest number of shanties. Although 85% of people still live in rural areas, Limpopo province ranked 5th in the Business Times analysis.

3.9 Ubombo

3.9.1 Demography and geographical location

Ubombo is a traditional rural area which was called the “homeland” of Kwa-Zulu Natal during the height of Apartheid. It is about 50 km south of the Mozambique border.

The subjects lived in rural homesteads (kraals) and were almost exclusively Zulus (98% as estimated by the South African Central Statistical Services 1990).

Kwazulu-Natal contains 66 magisterial districts, and has a land area of 91481 square kilometres or 7.5% of the country’s total surface area. It is a province with a relatively high potential for development and possessing abundant natural resources with fertile soil, a variety of mineral resources and relatively more water than in most of the other provinces in South Africa, but hosting the largest population of all nine provinces (CSS, 1996).

The province has common boundaries to the south (Eastern Cape), west (Free State and Lesotho) and north (Mpumalanga, Swaziland and Mozambique). The Indian Ocean forms the eastern boundary. During the period of this study, this province had a population of 7955000, representing 22 percent of South Africa’s total population with a population growth rate of 2.3%. Persons in the age group 0-14 years represented 39.1 per cent of the total population.

The region had a population density of 87% per square kilometre which formed 31.0% of South Africa’s population density.

3.9.2 Ethnicity

isiZulu, one of the eleven recognized official languages in South Africa, was the most commonly spoken language (83%) followed by English (16%) (CSS, 1996). The people of the region are however a mixture of amaZulu, amaThonga and amaSwazi groups, with the amaThonga group having origins from Mozambique and the Zulu / Swazi, from the southward migration of the Tekela Nguni from Central Africa (Robinson, 1989). One branch of the Tekela Nguni, the Bendo-Nguni, followed the borders of what is today Swaziland until they settled in the area between Lebombo mountains and the sea south of Delgoa Bay. They lived here for about two centuries and were collectively called the Bembo, Embo Nguni or Amabambo. One of the largest subscribes of the Amabambo, the Amalangeni, split into three with the Ngwane leader of the first splinter moving west to found Kangwane (Swaziland). Langa, the leader of the second splinter colonised the area south west of Maputaland and the leader of the third faction remained on the old site below the Lebombo mountains and became known as the Abakwa Gumede or Matsebula (Robinson, 1989).

The Gumede clan is still one of the largest in the region, with splinter groups from it such as Jobe, still resident in the area. One of the major clans in the area are the Khumalo who are said to originate from the Ntunjwa who came south around the western border of Swaziland and wedged themselves between the Embo Nguni and the Thonga Nguni.

The region became officially known as Thongaland in 1897 after the Thembe queen regent Zombili and her son, Ngwanase engineered the incorporation of the territory to become part of the British protectorate. The name Thongaland was subsequently changed to Maputaland which has its origins in the Maputa or Maputdja clan. More recently it has been decided to refer to the region as the Ubombo-Ingwavuma region as Maputaland was not acceptable to the people of the region.

The population was predominantly black (82.4%) followed by Asians (9.1%), White (6.9%) and coloured (1.3%). amaZulu (83%) and English (16%) are the most widely spoken languages.

3.9.3 Socio-economic status

Early trade and hunting in the 1800's indicates that trade was an important factor in the formation of the Zulu kingdom in the early 19th Century. Dingiswayo, the Zulu king of the time appropriated the trade routes through Maputaland to Delgoa Bay and controlled the European goods.

The amaZulu elite dominated the production and means of production. The trade routes were important until the end of Dingaan's reign and European trade commodities became associated with exclusivity and the power of the monarchy and were used to enhance and dominate. In the early 20^{th} Century the tributary system was reinstated and paid to the crown, with no return on the taxes going back into the area in the form of infrastructure. This process not only further eroded the productive base of the area, but also forced many people into migration to the wage economy. The dominant developed sector of the economy was designed to generate cheap labour, in particular for the Natal sugar industry (Robinson, 1989).

Of the official economically active population in Kwa-zulu, Natal 77.4% was blacks, 10.8 % were Whites and 11.8% were Asians. The official unemployment rate was 32.2%. Of this, the highest unemployment rate occurred amongst blacks 32.2%. Asians followed with 18.1% and Whites with 7.4% (CSS, 1996). In terms of Gross Geographic Product (GGP), Kwazulu/Natal hosted the second largest economy, after Gauteng. The manufacturing sector was the largest contributor to the GGP (29%), followed by the Commerce sector (17.2%). Other notable sectors included Government / Social services (13.8%), Finance (15%), and Transport (11.1%).

The population relied mainly on subsistence farming and financial support from the men of the family who work as migrant labourers on cotton, sugar or corn plantations or within the major industrial areas near Johannesburg, some 600 kilometres to the west. Supplies of both food and money were seasonal and migration to urban areas was common.

Almost 19 per cent of the labour force resided in the province. The province was the largest singular provider of employment opportunities in the agricultural sector (15.6 %) and second largest in Manufacturing (22.6%), commerce, catering and accommodation (21.3%); and Transport and communication (21.3%), thus providing formal employment opportunities to a less than proportionate number of workers(CSS, 1996).

The measure of life expectancy, income and literacy, i.e. the Human Development Index (HDI) of Kwa-Zulu Natal was 0.602. It ranked together with other provinces, with the Free State (0.657), Northern Cape (0.698) and Mpumalanga (0.694). The underlying principle of the HDI is that it indicates a country’s or provinces relative position on a scale between 0 and 1, in terms of life expectancy, income and literacy.

In UBOMBO specifically, the distribution of formal employment indicated that 23.7% are in Agriculture, Manufacturing (3.5%), Mining (3.0%), trade and catering (10.7%) and most are in Services (48.3%). (CSS, 1996)

3.9.4 Water supply

Rivers and bore holes for those that can afford them formed the main source of water supply. There were developed isolated areas near hospitals and towns that provided clean water to nearby kraals. Water and electricity contributed 2.1% to the GGP (CSS, 1996).

3.9.5 Agriculture

The agricultural sector together with the Foresting economic sector contributed 5.6% of the GGP. Sugar cane is the common commodity whereas mining and quarry formed a mere 1.9% of the GGP.

3.9.6 Quality of life

The majority of the population were children 0-18 years (56%), Adults formed 32% of the population and the older people (over 50 years), formed about 12%. Most of the people were female 51.3% (Robinson, 1989). The majority of the people were not literate (52.7%), while the semi-literates formed some 25.1% and the rest (28.2%) were literate. The selection of projects in the area has affected people in one or other social category. Some of the most significant social groups in the region are: the political elite, entrepreneurs, farmers, civil servants, members of school committees. Breast feeding is common in this population.

3.10 Editing Methodology

All subjects' data were plotted on the scatter-gram to observe the extreme values. This enabled easy detection of data with erroneous birth dates to start with. For example, Thandazile Nyathi, Studyno: 900 had a wrong date of birth on occasion two (2). This date of birth estimated her age as 7.2 years old. Her height was 139.5 cm and she weighed 32.1 Kg. This height corresponds to 95th. centiles of NCHS reference charts. The corrected date of birth placed her between the 25th. and the 50th. centiles for height which tallied with other children of her age that was confirmed by her parents and subsequent data on other occasions.

3.10.1 Specific Exclusions per Variable

3.10.1.1 Height

Raw data from Ubombo area on occasions 2, 3, 4 and 5 had a total of 1525 cumulative measurements of height taken. Out of these, 34(2.22%) were isolated as suspect data and were scrutinised for either inclusion or exclusion for analysis. A plot of the Z-scores for each variable was made and their profiles assessed.

On occasion 2, alone 589 height measurements were taken and 14(2.38%) were out of the specified range of (+/-) 2SD and were also singled out for scrutiny. Subject number 768 had both of her height measurements on occasions 2 and 3 out of range. On investigation, her SDS profile showed that on occasion 2, 7 other variables were isolated as out of range. On occasion 3 her other combination of seven variables were also out of range. Because this subject was measured only on these two occasions and no further verification could be made she was excluded from the analysis.

3.10.1.1.1 Reasons for excluding certain data for analysis

Subjects with 4 or more variables which could not be verified in terms of errors or number transposition and were out of specified SD range were excluded in the final analysis. Two subjects, study numbers 913 and 516 had 6 unverifiable variables outside the SD cut off range. Study numbers, 46, 269 and 451 had 5, measurements out of set SD cut off range and the following study numbers, 596, 540, 881, 809 and 540 had 4 out of SD range measurements while 171 had 3 variables that could not be confirmed. The following study numbers 710, 636, 516, and 571 had two variables out of SD range each.

On occasion 3, out of 400 height measurements taken, 11(2.75%) were excluded. Two subjects, 768 and 913 had 7 variables out of range and were hence excluded in the final analysis. Study number 881 had 5 variables excluded and 6 variables for study number 29 respectively. The following had three outliers, 807, 269, 451 and 540 respectively. Only those specific variables and not whole subjects were excluded in the final analysis.
Occasion 4 had only 5 height variables excluded from a total of 292 i.e. (1.71) %. These were from study numbers 803 and 807. They had 7 variables outside the range. Study numbers with height measurements out of range were 101 and 328 respectively. Whole subjects of study numbers 807 and 803 were excluded in the final analysis. Only 4 height measurements from subject’s number 284, 801, 807 and 591 were isolated for scrutiny.

3.10.1.2 Sitting height

From occasions 2, 3, 4 and 5 of Ubombo, 584, 400, 292 and 244 total measurements of sitting height per occasion were taken. From each occasion, 2.04%, 2.50%, 1.74% and 1.24% measurements were excluded using the (+/-) 2.5 SD criteria.

3.10.1.3 Weight

All measurements excluded in the skinfolds above were also excluded for weight. The exclusion supported the well documented relationship between skinfold measurements and weight in the literature.

3.10.1.4 Head circumference

Subjects whose head circumferences were consistently out of range for all occasions, for example study numbers 46 and 343 (occasions 2 and 3) were scrutinised. The original data were checked and due to significant fluctuation of measurements between occasions they were excluded in the analysis. Other outsiders appearing once on each occasion as outside the initial (+/-) 2SD and final (+/-) 3SD range were excluded.

3.10.1.5 Relaxed upper arm circumference

Out of Occasions, 2, 3, 4, and 5 respectively, 1.87%, 2.50%, 3.09% and 0.82% of all measurements were excluded. These few error percentages highlight the ease and accuracy of taking the relaxed upper arm circumference measurements.

3.10.1.6 Bi-acromial diameter

Measurements from bi-acromial diameters are relatively difficult to take. They require accurate location of both acromial landmarks as compared to the measurements taken from the head circumference. Bi-acromial measurements isolated for scrutiny were 28 (4.75%), 30(8.00%), 10(3.42%) and 47(23.04%) from occasions 2, 3, 4 and 5 respectively.

3.10.1.7 Bi-iliac diameter

This variable had one of the highest percentage exclusions because of the technical difficulty inherent in taking the measurement from the site. From occasion 3 (28.30%), 4 (3.42%) and occasion 5 (19.61%) measurements were excluded.

3.10.1.8 Four skinfolds

Measurements from triceps, sub-scapular, biceps and supra-iliac sites were transformed by converting the original measurements into logarithmic values. There was a wide range of exclusions on all occasions ranging from 1.25% up to 27.42%, mainly due to the high variation between measurements.

3.10.1.9 Ubombo data

Table 3.3

Cameron-Kgamphe (UB) boys and girls data highlighting total number of subjects, before editing (NI) and total numbers after the editing of data (N2) per variable

Occasion	1		2		3		4	
Variable	N1	N2	N1	N2	N1	N2	N1	N2
Height	587	575	400	389	292	287	244	241
Weight	588	569	400	388	294	285	244	240
SitHeight	584	572	400	390	292	287	244	241
BiacDiam	582	567	387	364	293	288	241	204
BiilDiam	586	572	334	259	292	282	241	201
HdCirc	578	566	396	395	290	287	244	240
Reluac	581	570	398	388	294	285	243	241
Sscp-Skf	583	567	302	243	291	285	244	239
Trcp-Skf	582	564	391	381	291	287	244	241
Bcp-Skf	581	561	391	378	290	285	244	237
Spil-Skf	581	564	302	244	293	285	244	239
% Diff.	2.59		6.88		2.15		4.2	

N1= before editing N2= after editing

3.10.1.10 Discussions and conclusions

Table 3.3 above, highlights the remaining total number of subjects per variable after the data cleaning process. The mean % variance was highest at occasions 2, 4, 1 and 3 in that order. Bi-acromial and Bi-iliac diameters are consistently the highest in terms of total numbers edited for each of the occasions particularly on occasion 4(241 to 201 and 241 to 201 for BiacDiam and BiilDiam respectively) . Although there are several combinations of looking into the most effective translation of the variances per occasion, it seems clear that weight and its related measurements from the four skinfolds are the most eco-sensitive variables that fluctuates the highest.

3.10.2 Editing effects: Percentage losses per variable and occasion

3.10.2.1 Excluded measurements

Table 3.4

Cameron-Kgamphe (VAL): percentages of excluded measurements per occasion per variable (boys and girls)

	Occasion			
Variable	2	3	4	5
	%	%	%	%
Height	2.04	2.75	1.71	1.23
Weight	3.23	3.00	3.06	1.64
Sitheight	2.05	2.50	1.71	1.23
BiacDiam	2.58	5.94	1.71	15.35
BiilDiam	2.39	22.46	3.42	16.60
HdCirc	2.08	0.25	1.03	1.64
Reluac	1.89	2.51	3.06	0.82
SscpSkf	2.74	19.54	2.06	2.05
TrcpSkf	3.09	2.56	1.37	1.23
BcpSkf.	3.44	3.32	1.72	2.87
SpilSkf	2.93	19.21	2.73	2.05

3.10.3 Discussions and Conclusions

A total of 13(2.21%) whole subjects were excluded from occasion 2, from occasion 3 5(1.25%), from occasion 4(1.37%) and none from occasion 5 respectively.

3.11 Exclusions per occasion

3.11.1 Occasion 2

Table 3.5

Table of excluded individuals per study number and measurements falling outside the accepted range

Study Number	No. of outliers	Occasions measured
451	5	4*
46	5	3
269	5	2
881	4	2
809	4	4*
124	5	3
770	5	4*
141	7	4*

3.11.2 Discussions and conclusions

Accuracy was chosen above frequency of data available i.e. although it is difficult to always see and measure all subjects at all occasions, where there was a decision between the accuracy of measurements and the frequency of measurements, the accuracy of measurements superseded the frequency of measurements. Subjects seen on all 4 occasions marked with an asterix were hence excluded.

3.12 Further editing

3.12.1 Occasion 3

Table 3.6

Table of excluded individuals per study number and measurements falling outside the accepted range

Study Number	No. of outliers	Occasions
124	7	3
768	5	2
29	6	4
881	5	2
46	7	3

3.12.2 Occasion 4

Table 3.7

Table of excluded individuals per study number

Study Number	No. of outliers	Occasions
803	7	3
807	7	4
261	5	4
487	4	3

3.12.3 Discussions and conclusions

All excluded subjects were assessed for number transposition, correct age, Z-scores and the standard deviation profiles. Subjects who were measured on more than one occasion were checked for the consistency of measurements and where no pattern emerged the whole subject was isolated as suspect. When more than 4 variables per subject were found to be out of range, the whole subject was rejected. This information was checked against other occasions.

3.12.4 Effects of data cleaning

3.12.4.1 Ubombo data

A total of 631 subjects were measured on occasions 2, 3, 4 and 5. Measurements with the highest number of exclusions using the (+/-) 3SD criteria were; the four skinfolds – triceps 18(3.06%), 20(3.4%) biceps, sub-scapular skinfold 16(2.72%) exclusions and 17(2.89%) from the supra-iliac.

Almost half of subjects or variables isolated for scrutiny were excluded. The highest exclusions were for bi-iliac diameter, 83(31.3%) measurements were isolated for scrutiny and about 75(28.30%) were excluded.

The lowest exclusions occurred on head circumference measurements. 14(3.5%) measurements were scrutinised and only one (0.25%) was rejected. The smallest sample size available for analysis was from the sub-scapular and supra-iliac skinfolds with totals of 243 and 244 measurements, respectively. The highest numbers of rejected outlier measurements from the bi-acromial diameter sites were 37, (18.14%) and those from the Bi-iliac diameter site were 40 (19.61%) in total. The lowest exclusions due to editing were from relaxed upper arm circumference which was only 2, (0.82%), height 3 (1.23%) and from sitting height and triceps skinfolds were both 3 (1.24%).

3.12.4.2 Conclusions

The above results highlight the critical high number of errors from the bi-acromial and bi-iliac diameters sites. 18% and 19% of data were excluded from these sites respectively.

3.13 VAALWATER (VAL)

3.13.1 Demography and geographical location

Vaalwater is situated in the Limpopo province of South Africa close to the Botswana border. Geographically it is almost in the centre of the sub-continent. It is a farming area, some 113 Km. South of Ellisras in the Waterberg region of South Africa. It lies between 24 degrees, 30' longitude and 25 degrees 30' latitude south of the equator. The majority of the rural black population in pre-colonial times were pastoral cultivators and were turned by subsequent laws and acts into sub-subsistence rural dwellers. It is about 9-10 hour drive due west from the Indian Ocean. It comprises an area of 116 824 square kilometres. Only 14 per cent of the total area is potentially arable land.

The province’s population of about 4.3 million in 1991 represented 11.2 percent of South Africa’s population. The average number of persons per square kilometre was 36.4, but varied from a low of 2.5 in Soutpansberg district to a high of 450.7 in the district of Namakgale. This province recorded a population growth rate of 3.6 percent per annum between 1980 and 1991, which was well above the national average of 2.3 per cent per annum. The population thus increased by 391 people per day in 1991 owing to natural growth and natural migration. (CSS, 1996).

In 1991, 58.5% of people in the 15 to 64 year age group were female, since a large number of males of working age group had migrated to other areas in search for job opportunities. Persons in the 0-14 years of age group represented 48.1% of the province’s total population. The official level of urbanisation of the province, 9.5%, was the lowest of all the provinces. The Northern Province provided jobs to only 5.4% percent of the total formal employees in South Africa. The unemployment rate rose from 9.0 to 24% during the period 1980-1991, three years before the new political order in South Africa.

Vaalwater is a farming community populated mainly by families from the Tswana and Pedi nations who are predominantly sub-subsistence rural dwellers unable to support themselves except by being dependent for survival upon wages earned in the cities or on farms (Bundy, 1970). Those who could not get jobs resorted to squatting on the farms. The 1908 Natives Tax act imposed a levy of two Great Britain Pounds (GBP) on the farm squatters and one pound on the tenants. Bundy further states that in the northern region of Limpopo, rent squatters were moved from some farms by direct Apartheid government action and rents rose sharply in all areas. This action was followed by the introduction of the 1913 Native Land Act. The main function of the act was to reduce the number of squatters and share-croppers to the level of labour tenants. At Vaalwater, families were allowed to stay on the farms provided one member of each family worked on that particular farm.

The farm where this study was undertaken was owned by a paediatrician who supplied medical care, basic foodstuffs (80 kg maize meal per month per family) and some housing aid. The agricultural community and social services sectors provided 21% and 36.7% total number of formal jobs respectively. Families were stable in that most had been resident on the farm for two or more generations. Income and food supply were not subjected to major seasonal fluctuation.

3.13.2 Characteristics of the population of Vaalwater

3.13.2.1 Ethnicity

The majority of the people of Waterberg region are the Northern Sotho and Tswana that together comprised 92.16% of the total African population in that area. The total white population of the non-urban region of Waterberg was 6 750 (GPC, 1980). There were 48.55% males and 44.37% white females at Waterberg in 1980 of predominantly Afrikaans extraction. The English speaking group formed the next majority with 1.93% of the total population being English speaking males and 1.48% English speaking females respectively. The rest of the language affinities were very low in comparison to these two major groups.

At the time of this study, out of a total population of 55 657 Africans in Waterberg region, 34 480 (61.95%) had either never been to school or were of unknown educational background (GPC, 1980). Only 30 (0.05%) passed their national matriculation examination (STD 10). There was only one female in the whole region who had a degree.

3.13.2.2 Socio-economic status

Sixty-five percent of the Northern Province's labour force fall in the production and farm worker categories. The professional and managerial component constitutes 10.3 per cent, which is in line with the national average of 10.4 per cent. The share in the GDP increased from 2.4 % in 1980 to 3.7% in 1991 mainly owing to sharp increases in its contribution to production in the mining sector, from 3.5 to 8.7%, and in the electricity sector from 0.7 to 7.0 % of the national value. (CSS, 1996)

The province's economy registered the highest growth performance index of all the provinces, namely 174.8, reflecting an average annual growth of 6.6% per annum between, 1980 and 1991. Mining and electricity recorded the highest growth performance indices. Agriculture's relative contribution to the Province's GGP declined from 17.9 in 1980 to 10.5 in 1991 and Mining's contribution from 30.2 to 21.7 %. The combined contribution by the secondary and tertiary sectors increased from 51.9 to 67.8 per cent.

The province has a human development index of 0.47. This figure ranks together with countries like Lesotho and Zimbabwe with the low HDI scale of (0 - 0.5). The actual HDI value of the province increased from 0.367 in 1980 to 0.47 in 1991 (CSS, 1991). The province remains the poorest, with personal income per capita only 27% of the South African average. Its economy also has the lowest labour absorption capacity, the largest number of males absent from the province and the highest unemployed rate in the country. Social indicators point to well below-average levels of social development (CSS, 1991).

The growth of the province's GGP and GGP per capita as indicators of improvement in the welfare of the inhabitants of the province should be viewed with caution since the development was largely geographically as well as sectorially concentrated. Growth recorded in the other regions stemmed mainly from growth in Community and Social services, which in itself is a rather alarming phenomenon since it is largely government-supported with little if any, self-sustaining growth. The province registered the highest growth of all nine provinces in its labour force whilst its economy's ability to absorb the growing number of workers decreased from 80.5% in 1980 to 57.4% in, 1991. The province thus faced a need for urgent job-creating programmes which could entail, inter-alia, the beneficiation of its vast array of primary products.

3.13.2.3 Water supply

The people of Vaalwater have access to clean water from the local farming community who uses bore holes. The patterns of rain seasons in this area are not dependable as a source of water throughout the year but serve as a better source during summer.

3.14 The Universe

3.14.1 Vaalwater Data

3.14.1.1 Effects of data cleaning

There were 483 subjects in total for this area and a full complement of all subjects was measured for all the 11 measurements including the sub-scapular and supra-iliac skinfolds respectively. Out of these particular skinfolds, 6(2.02%) and 8 (2.70%) were excluded. The lowest number of exclusions was for sitting height 1(0.34%), for both bi-iliac diameter and height 2(0.67%); bi-acromial diameter and head circumference had 3(1.00%) measurements excluded from the final analysis.

Vaalwater had more occasions than Ubombo. The relationships between measurers and subjects at Vaalwater were hence much closer than the relationship between measurers and their subjects from Ubombo. The rate of measurement error, attrition rate and the total outliers identified for scrutiny were much lower than they were at Ubombo. The most probable explanation for this reason was that the measuring team went twice a year to Vaalwater and once a year to Ubombo. As a result the frequency of measurements also improved the quality of measurements and the relationship between the subjects and those people that took the measurements. These are the two vital factors in any research involving people, particularly the school children.

3.14.1.2 Sitting height

Only one subject from occasions 2 (0.34%) and from occasion 4(0.33%) was isolated and deleted.

3.14.1.3 Weight

Subjects with study numbers 299, 153 and 115 were isolated for scrutiny. Six variables were excluded from subject number 153 and 3 from subject number 115. From occasion 2, only 7 weight variables (2.42%) and 3(0.99%) from occasion 4 and none from occasions 6 and 8 were excluded.

3.14.1.4 Head circumference

There were 978 measurements of head circumferences taken on occasions 2,4,6 and 8 from Vaalwater and 1.02% of them were excluded. The bulk of the exclusions were from occasion 4(1.97%).

3.14.1.5 Relaxed upper arm circumference

None of the scrutinised values from occasion 8 were found to be out of the set limit. Occasions 2,4 and 6 had 4(1.35%), 3(0.99%) and 3(1.3%) exclusions.

3.14.1.6 Bi-acromial Diameter

Only 3 measurements from study numbers 238, 312 and 118 were isolated and subsequently excluded from occasion 2. Two of them were also excluded on occasion 4.

3.14.1.7 Bi-iliac Diameter

Subject's numbers 284 and 115 from occasion 2 and 178 from occasion 4 were outside the set limit for this variable and hence not included in the final analysis.

3.14.1.8 Four Skinfolds

Skinfold value was transformed into logarithmic numbers and 0.3% to 2.5% was excluded at each occasion.

3. 14.1.9 Vaalwater: Total Sample size

3.14.1.9.1 Measurements before editing (N1) and after (N2)

Table 3.8

VAL data: measurements before (N1) and after editing (N2)

Variables	Occasions							
	2		4		6		8	
	N1	N2	N1	N2	N1	N2	N1	N2
Height	294	291	304	303	231	230	151	151
Weight	296	289	304	301	230	230	152	152
Sit.height	293	292	304	303	231	231	152	152
Biac.diam	293	290	304	302	231	231	152	152
Biil.diam.	293	291	304	301	231	231	152	152
Head circ.	293	290	304	298	231	231	150	149
Reluac.	295	291	307	304	231	228	151	151
SscpSkf.	297	291	304	299	230	225	153	151
TrcpSkf.	296	291	304	301	230	226	153	151
BcpSkf.	296	290	303	302	230	227	153	151
SpilSkf.	297	289	304	299	230	225	152	151
TOTAL	3243	3195	3346	3313	2536	2515	1671	1663
% diff.	1.48		0.99		0.83		0.48	

3.14.1.9.2 Discussions and conclusions

The overall percentage differences show gradual improvements in the accuracy of measurements over time. The highest differences were on the first occasion and these decreased towards the last occasion. This implies that the more the occasions the fewer subjects' data become suspect and the lesser number of subjects are removed from the study.

3.14.1.9.3 Exclusions by variable and occasion

Table 3.9

Cleaning Effects: Percentage exclusions per variable by each Occasion

Variable	Occasions			
	2	4	6	8
Weight	2.36	0.99	0.00	0.00
Sitheight	0.34	0.33	0.00	0.00
BiacDiam	1.02	0.66	0.00	0.00
BiilDiam	0.68	0.99	0.00	0.00
HdCirc	1.02	1.97	0.00	0.67
Reluac	1.36	0.98	1.30	0.00
SscpSkf	2.02	1.64	2.17	1.31
TrcpSkf	1.69	0.99	1.74	1.31
BcpSkf.	2.03	0.33	1.30	1.31
SpilSkf	2.69	1.64	2.17	0.66

3.14.1.9.4 Discussions and conclusions

Relative percentage exclusions are shown to be the highest on measurement sites like skinfolds, Particularly the sub-scapular, supra-iliac, triceps and biceps in that order.

3.14.1.9.5 Final sample

The final sample comprised all those subjects which remained after cleaning and editing data. Both KGA data that is reported later and the 6 year olds from both UB and VAL areas had sample sizes that were too small for final analysis and conclusions.

3.14.2 Ubombo: Total Sample Size

Total measurements per site and variable and the percentage difference between the original and final sample size were compared between UB and VAL.

Table 3.10

Cameron-Kgamphe: Final f measurements taken from Ubombo (UB) and (VAL) ites

Variable	UBOMBO			VAALWATER		
	N1	N2	%	N1	N2	%
Height	1523	1492	2.04	980	975	0.05
Weight	1526	1482	2.88	982	972	1.02
SitHeight	1520	1490	1.97	980	978	0.20
BiacDiam	1503	1423	5.32	980	975	0.05
BiilDiam	1453	1314	9.57	980	975	0.05
HdCirc	1508	1488	1.33	978	968	1.02
Reluac	1516	1484	2.11	984	974	1.02
SscpSkf	1420	1334	6.05	984	966	1.83
TrcpSkf	1507	1473	2.26	983	969	1.42
BcpSkf.	1506	1461	2.99	982	970	1.22
SpilSkf	1420	1332	6.20	983	964	1.93
TOTALS	16402	15773		10796	10686	

N1= raw data N2= clean data

3.14.2.1 In search of secular trend

Ten years after the collection of UB and VAL data by Cameron and Kgamphe, more data were collected by Kgamphe (KGA) from Vaalwater children in search of a possible secular trend. The main aim of the study was also to see if any improvement in the quality of life of these rural African children has taken place, particularly after the new political dispensation in South Africa.

3.14.2.2 Conclusion

The author decided to choose only four occasions from both sites in order to compare UB and VAL data using the times of the year closest to each occasion as the criterion and to allow for individual assessments during the same periods. Although the seasonal effects on growth would have been tested by using all data, this was not done. The July measures were used instead of January measures from VAL data mainly because the UB data was collected in August or sometimes early September. More analysis and assessment of the seasonal effect can still be done to compare the January and July data from VAL and test if these measurements were significantly different from each other. Most of the new subjects were those who would enter the study at the beginning of their schooling. Initially, high number of new subjects was at early ages of 6 and 7 years of age.

Chapter 4 will cover the generation of local distance reference charts.

Although the following distance charts for height, weight, sitting height, head circumference, relaxed upper arm circumference, bi-acromial diameter, bi-iliac diameter, triceps, bices, supr-iliac and sub-scapular skinfolds are plotted for 6-18 years, the 6 year olds were excluded in the final analysis and final conclusions in chapter8.

CHAPTER 4

ORGANISING DATA

4.0 EFFECTS OF DATA EDITING

Edited distance data was relatively easy to group and analyse. Only data within the Mean (+/-) 2Standard deviation was used in the final analysis. Although the 6 year olds were plotted, they did not constitute the final conclusions due to small sample sizes.

4.1 Ubombo (UB) and Vaalwater (VAL) Data

Data was grouped by area, age, sex and eleven anthropometric variables measured i.e. height, weight, sitting height, head circumference, relaxed upper arm circumference, bi-acromial diameter, bi-iliac diameter, biceps skinfold, triceps skinfold, sub-scapular skinfold and supra-iliac skinfolds.

4.1.1 Grouping by Area

Vaalwater data was treated separately from the Ubombo data
Consideration was given towards merging both Ubombo and Vaalwater data at the post data cleaning stage and after comparisons by age, sex and variable were made. This was not possible considering variable sample sizes per age and sex and

- variable environmental and geographical conditions from both sites variable t-test comparisons lacking conclusive compatibility on all variables the need to follow up the individual pattern of children's growth from each site over time; and
- the need to assess the effectiveness of government interventions in each of these provinces over time.

It was then decided to assess individuals within each group and compared them to the newly published WHO, Reference data of 2007. The option of data merging would happen, possibly once the South African national database is collated, in the same way as the National Centre of Health Statistics (NCHS) in America and other national centres of health statistics in other developed countries are collated. However, more research and consultation amongst human biologists will need to be undertaken for this to happen.

4.1.2 Grouping by Age

4.1.2.1 Approach

A four stage approach was used: See Appendix A for all subjects used from both Vaalwater Girls and Boys and Ubombo Boys and Girls data respectively.

4.1.2.2 Truncating age groups

All age groups were plotted such that the 12.0 year olds are all children falling between 12.0 and 12.99 years. The plotting of the 12.0 year olds was hence plotted at 12.5 years. This approach was consistently applied to all the data analysis deployed in this thesis.

4.1.2.3 Averages

Once the children's birth dates were confirmed by both the school register and by the parents from home, they were then classified into their respective age categories.

4.1.2.4 Collective variables by occasion

Weighted means were computed taking into account the total number of subjects per age.

4.1.2.5 Final means

Final means were compared to other means from other studies. Statistical analyses were computed using these final means as representative means.

4.1.2.5 Means

Analysis by incremental age and by occasion per sex.

Age by incremental age and by occasion per sex (6 – 18 yrs).

Each occasion provided for all age groups of the selected age range (6 – 18 years). The total number of subjects who attended school on that particular day between those ages provided for the sample size. It was not possible to track children who missed school during the day of measurement.

4.1.2.6 Differences between the means for each trait per occasion

Means from each occasion were compared to each other and tested if the differences were significant at 5% level before being pooled together to generate consolidated .

4.1.2.7 Consolidated means

The generated consolidated means and standard deviations were used to generate tables and figures that were utilised in the final analysis.

4.1.2.8 Sample sizes

In this way, the sample sizes of measurements taken for each age were sufficient to compare with other data from elsewhere.

4.2 UBOMBO Girls

Table 4.1

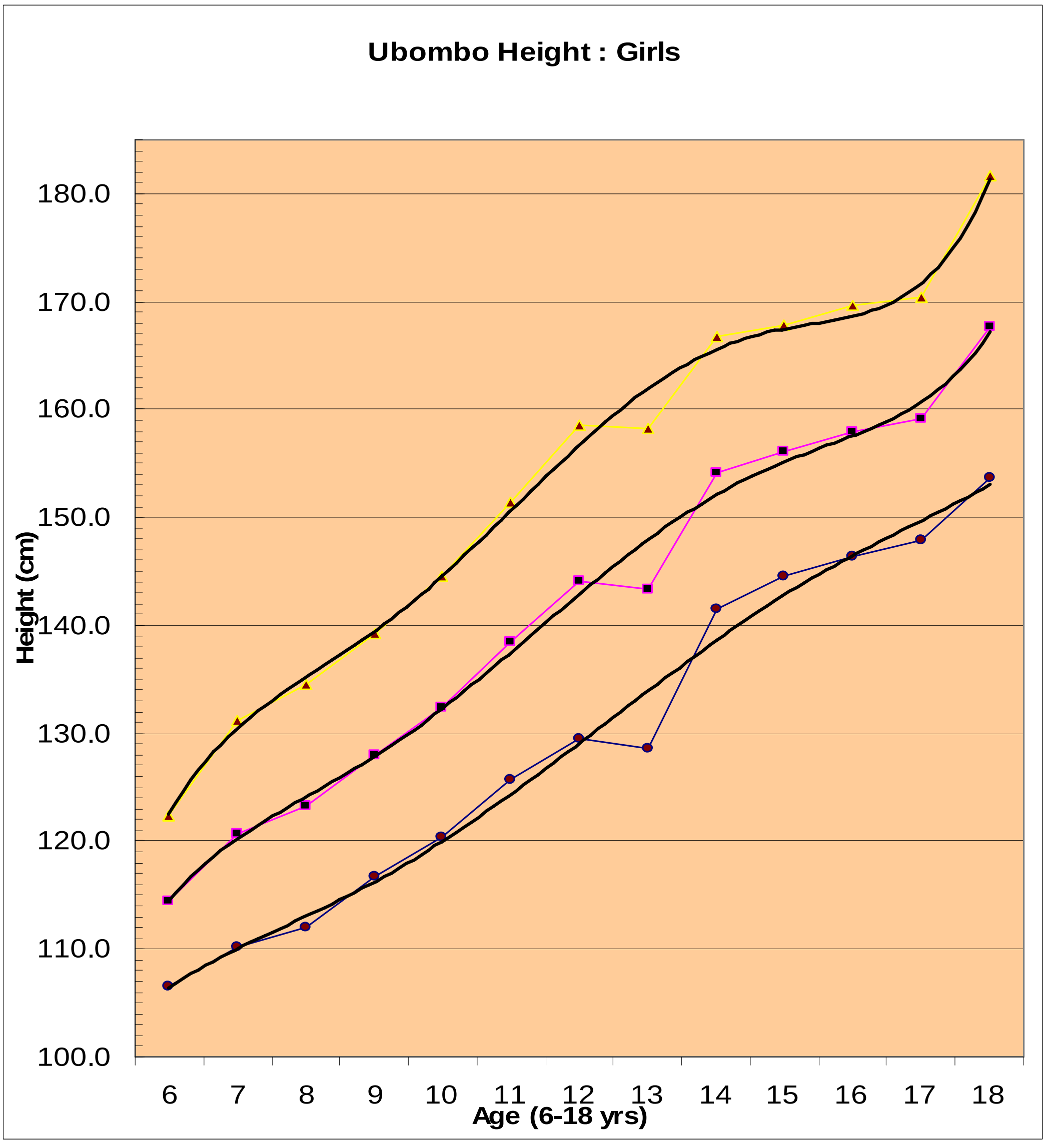
The Means and Standard Deviations of Height (cm) measurements of the 6 –18 year old girls from Ubombo (UB)

Height: Girls

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	7	114.41	3.93	122.28	106.54
7	22	120.67	5.24	131.15	110.18
8	37	123.24	5.64	134.52	111.95
9	52	127.94	5.61	139.16	116.72
10	78	132.43	6.04	144.51	120.36
11	80	138.53	6.40	151.33	125.72
12	103	144.06	7.25	158.56	129.56
13	78	143.38	7.41	158.21	128.55
14	89	154.11	6.33	166.78	141.45
15	81	156.17	5.83	167.83	144.51
16	65	158.00	5.81	169.62	146.39
17	66	159.18	5.62	170.41	147.95
18	37	167.70	6.99	181.68	153.73
	795				

Figure 4.1

Mean height measurements of Ubombo (UB) girls 6.0-18.0 years



This graph and subsequent figures also depicts the (Mean +2SD) and (Mean-2SD) lines that have been smoothed by the imposition of polynomial trend lines of 5th order of the excel spread sheet. Pink colour was used for the girls and blue for the boys.

Table 4.2

The Weight for age of girls from Ubombo (UB)

Weight: Girls

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	7	20.41	1.71	23.83	16.98
7	22	23.44	4.03	31.50	15.38
8	37	23.67	3.58	30.82	16.51
9	52	25.53	3.57	32.67	18.40
10	75	27.54	3.58	34.70	20.38
11	79	32.29	4.54	41.37	23.21
12	103	35.96	6.07	48.11	23.82
13	78	40.18	6.49	53.16	27.20
14	89	45.98	6.33	58.64	33.32
15	80	49.04	6.68	62.40	35.69
16	64	52.41	6.57	65.55	39.26
17	65	56.41	6.74	69.89	42.92
18	30	56.50	7.15	70.80	42.19
	781				

Figure 4.2
Mean weight measurements of Ubombo (UB) girls 6.0-18.0 years

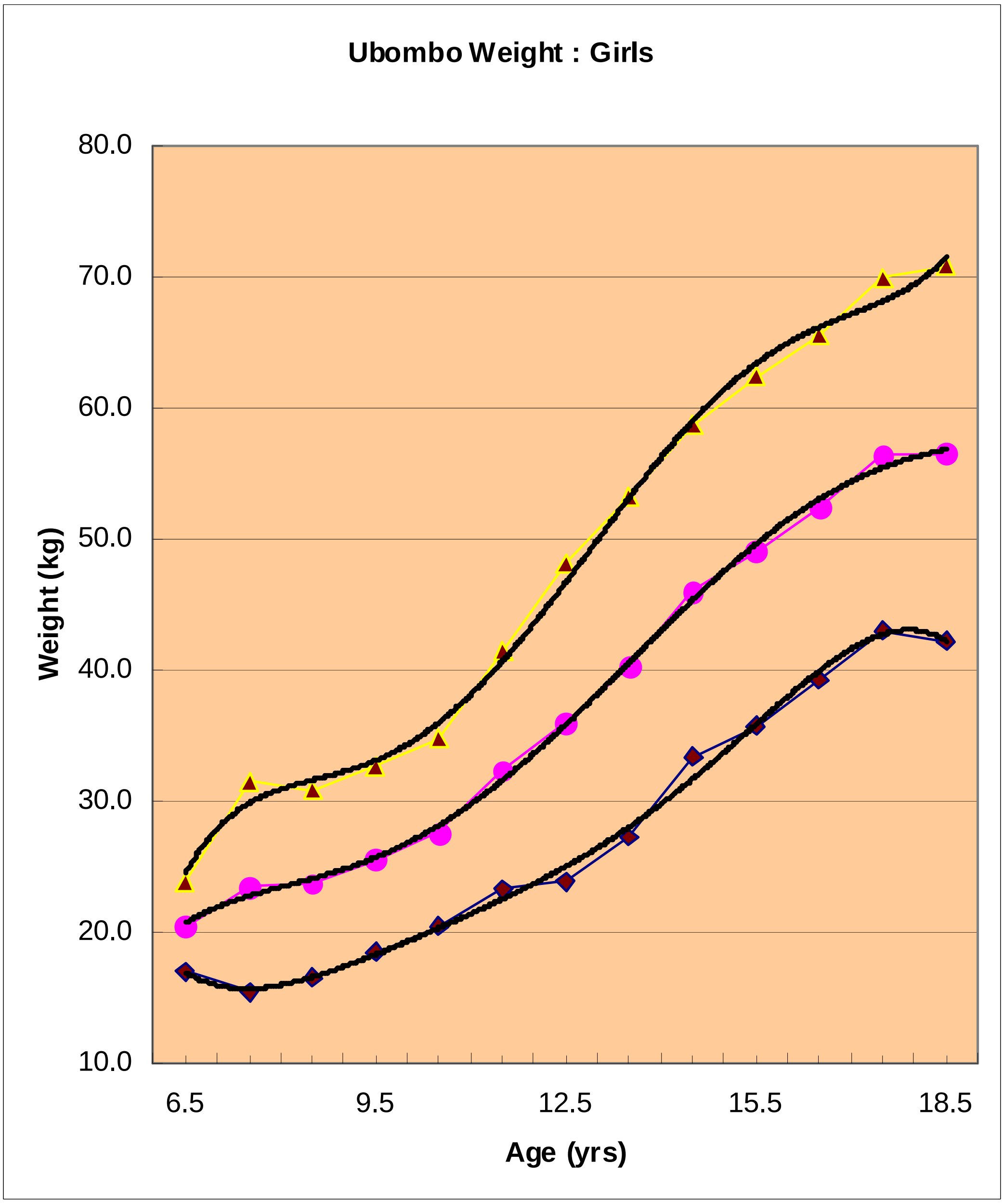


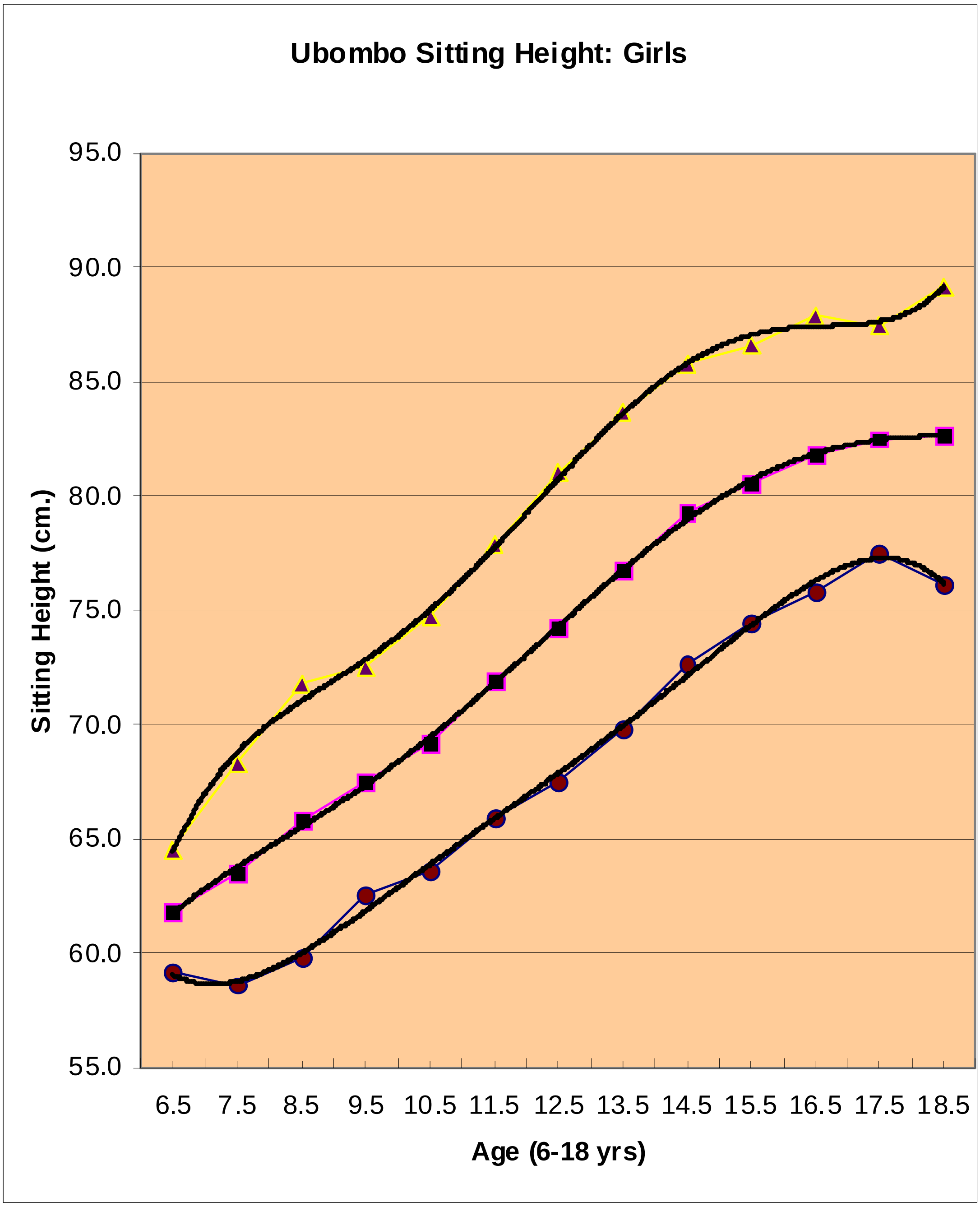
Figure 4.2 depicts the reference chart for weighted mean weight (kg) of Ubombo (UB) girls from 6.0-18.0 years. It also depicts the (Mean +2SD) and (Mean-2SD) lines that have been smoothed by the imposition of polynomial trend lines of 5th order of the excel spread sheet.

Table 4.3
Mean values of Ubombo sitting height for girls of 16.0 – 18.0 years

Sitting Height: Girls

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	7	61.82	1.35	64.51	59.13
7	22	63.45	2.43	68.32	58.58
8	37	65.78	3.00	71.79	59.78
9	52	67.51	2.51	72.52	62.49
10	79	69.18	2.78	74.73	63.62
11	80	71.87	2.97	77.82	65.92
12	103	74.25	3.37	80.99	67.51
13	77	76.72	3.46	83.63	69.80
14	89	79.24	3.28	85.80	72.68
15	81	80.52	3.04	86.60	74.43
16	65	81.84	3.04	87.92	75.77
17	65	82.49	2.48	87.44	77.53
18	36	82.66	3.26	89.19	76.13
	793				

Figure 4.3
Reference chart of Sitting Height (cm) of Ubombo girls from (6.0-18.0 years)



It also depicts the (Mean +2SD) and (Mean-2SD) lines that have been smoothed by the imposition of polynomial trend lines of 5th order of the excel spread sheet.

Table 4.4
Table 4.4 depicts the bi-acromial diameter of girls from Ubombo ranging from 6.0-18.0 years

Biacromial Diameter: Girls

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	7	25.26	1.12	27.51	23.02
7	22	25.43	1.58	28.58	22.28
8	37	26.39	1.82	30.03	22.75
9	52	27.19	1.59	30.36	24.01
10	76	28.41	1.69	31.78	25.04
11	79	29.58	1.66	32.89	26.27
12	102	30.57	2.16	34.89	26.24
13	74	31.78	1.91	35.60	27.96
14	86	33.12	1.92	36.96	29.28
15	73	33.67	2.14	37.95	29.40
16	59	34.38	1.85	38.07	30.69
17	52	34.45	1.79	38.02	30.88
18	23	34.22	1.95	38.12	30.32
	742				

Figure 4.4
The reference chart for Bi-acromial Diameter (cm) of Ubombo girls from 6.0-18.0 years

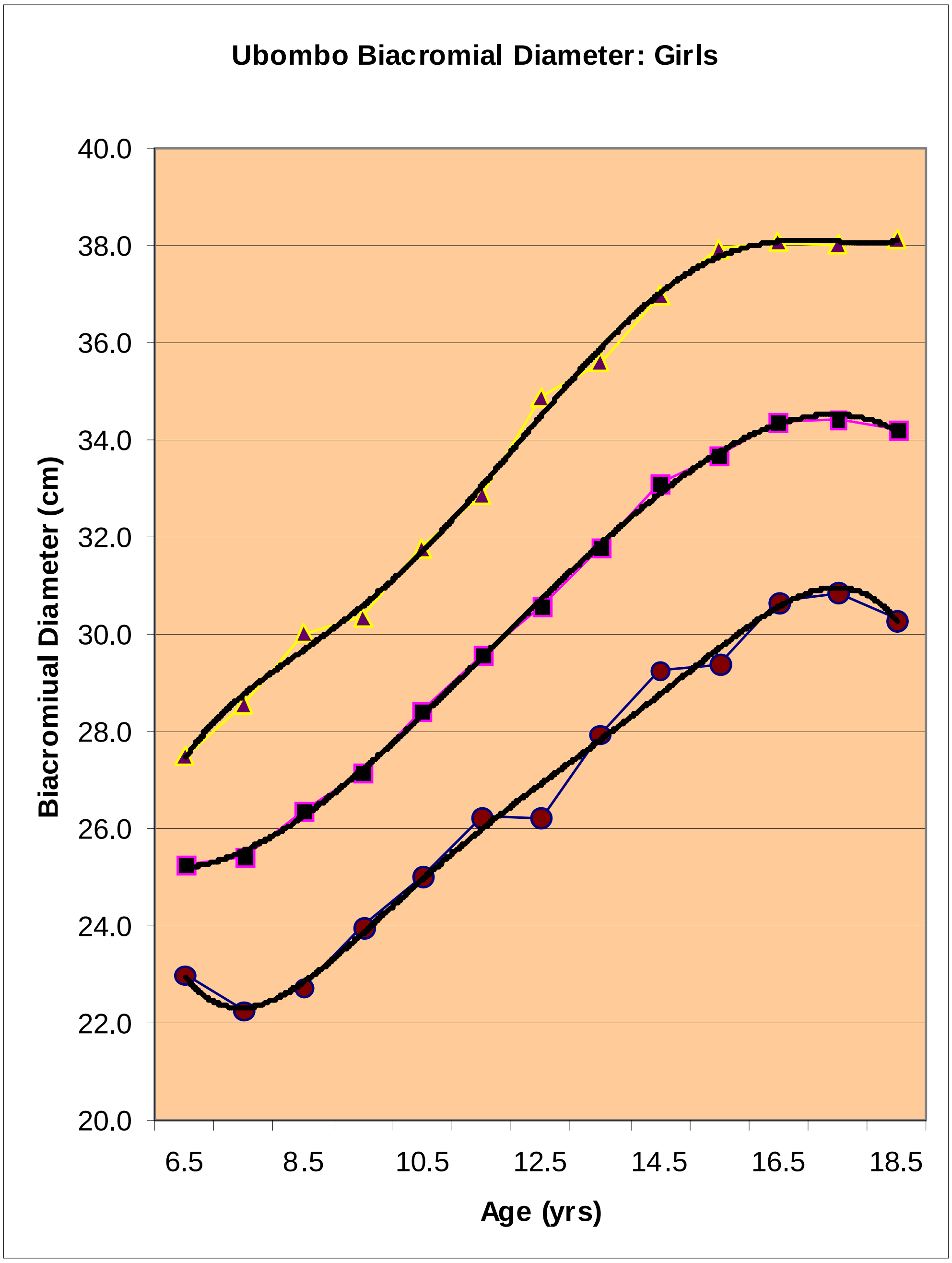
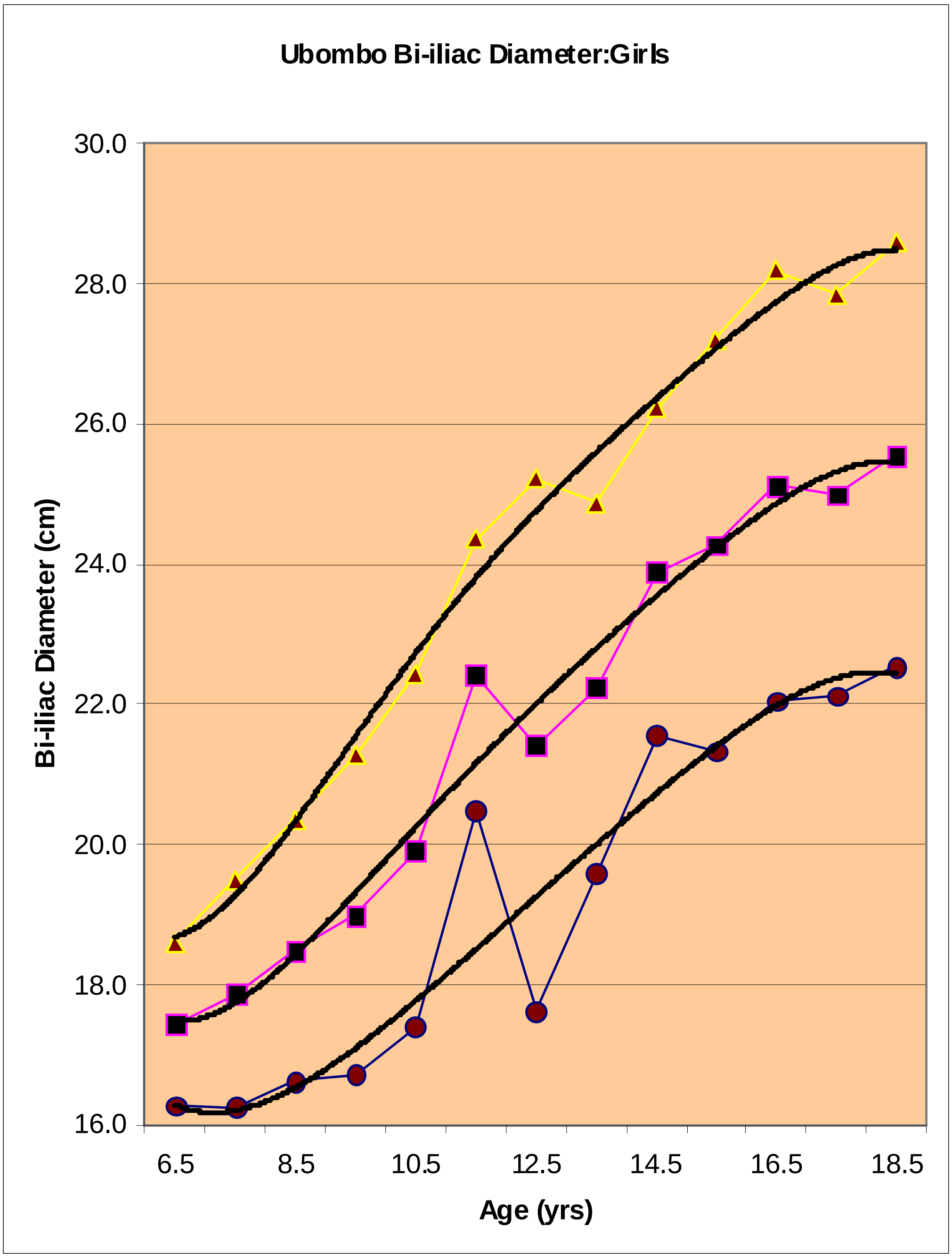


Table 4.5
Table of Bi-iliac measurements taken from Ubombo girls from 6.0 -18.0 years

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	7	17.44	0.58	18.60	16.27
7	22	17.87	0.81	19.49	16.25
8	37	18.49	0.93	20.35	16.63
9	52	18.99	1.14	21.27	16.71
10	73	19.91	1.26	22.42	17.40
11	66	22.41	0.97	24.35	20.47
12	84	21.41	1.90	25.21	17.62
13	61	22.23	1.32	24.88	19.58
14	67	23.89	1.16	26.22	21.56
15	56	24.27	1.47	27.21	21.33
16	42	25.12	1.54	28.19	22.04
17	51	24.98	1.43	27.85	22.12
18	18	25.55	1.51	28.58	22.53
	636				

Table 4.5 (Kgamphe and Cameron) above depicts the measurements of the bi-iliac diameters from Ubombo girls from 6.0-18.0 years of age.

Figure 4.5
Measurements of the Bi-iliac diameters of the Ubombo girls (6.0 to 18.0 years)



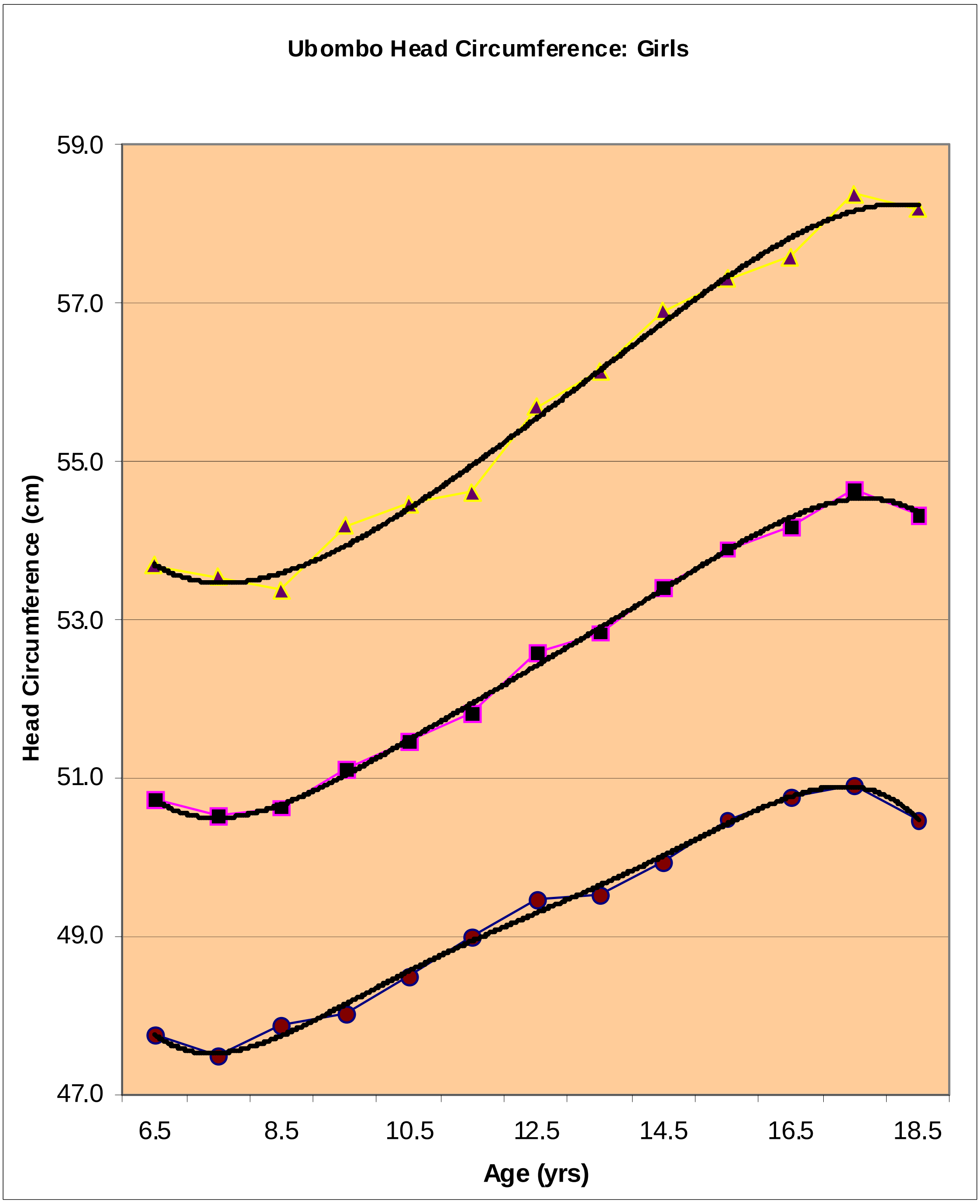
Regression lines smoothing was by the imposition of polynomial trend line of 5th order of the excel spread sheet.

Table 4.6
Table of measurements of the Head Circumferences of Ubombo girls from 6.0-18.0 years of age

Head Circumference: Girls

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	7	50.71	1.48	53.68	47.75
7	22	50.51	1.51	53.52	47.49
8	37	50.62	1.37	53.37	47.88
9	51	51.10	1.54	54.18	48.01
10	79	51.47	1.50	54.46	48.48
11	78	51.80	1.40	54.61	48.99
12	103	52.57	1.56	55.68	49.46
13	77	52.83	1.65	56.13	49.53
14	89	53.41	1.74	56.88	49.94
15	80	53.89	1.71	57.30	50.47
16	66	54.16	1.71	57.57	50.75
17	67	54.63	1.87	58.37	50.89
18	36	54.32	1.93	58.17	50.47
	792				

Figure 4.6
Graphical representation of Head Circumference measurements taken from Ubombo girls of 6 to 18 years



Regression lines smoothing was by the imposition of polynomial trend lines of 5th order of the excel spread sheet.

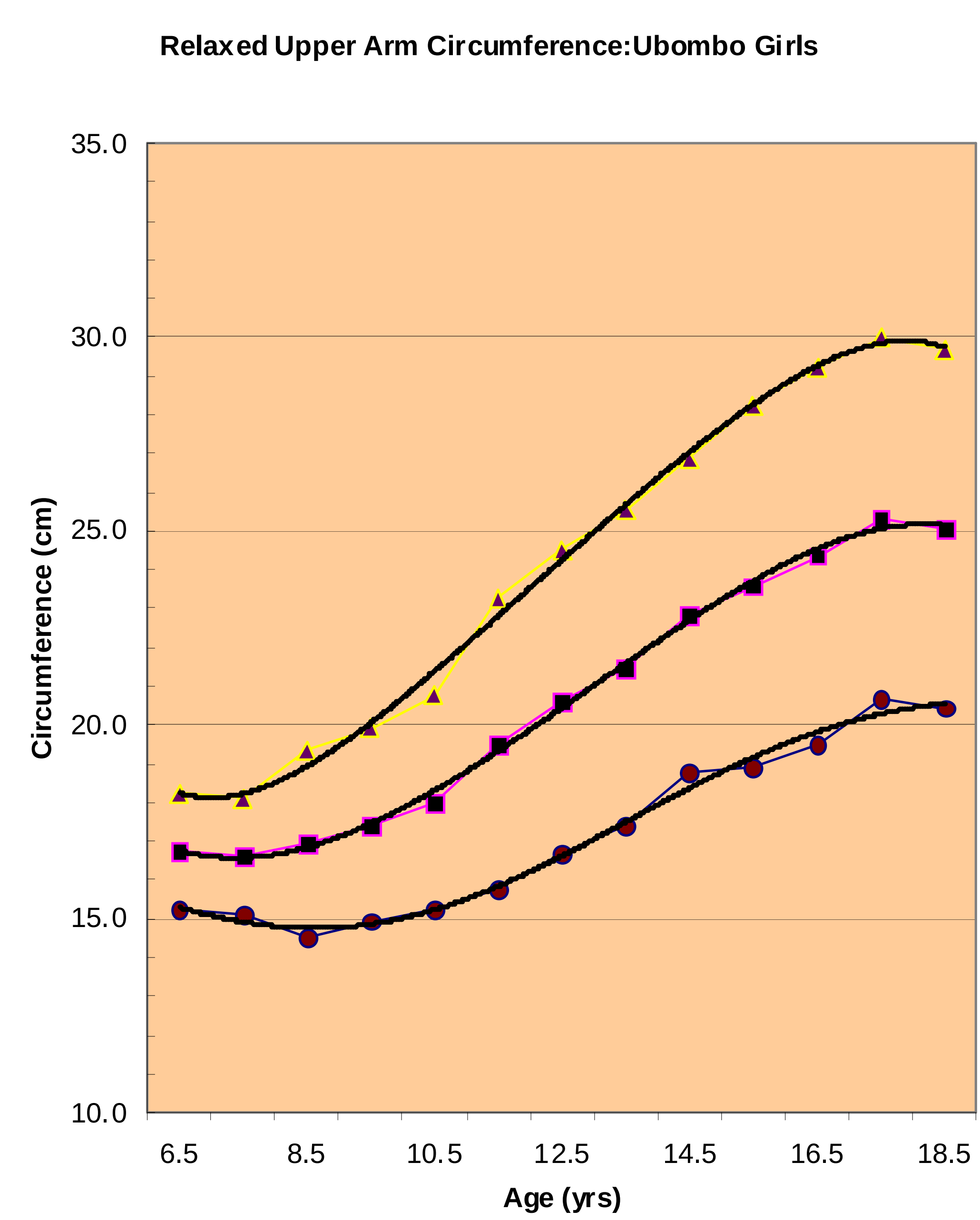
Table 4.7
The Relaxed Upper Arm circumference measurements of the Ubombo girls from the age of 6.0 to 18.0 years

Relaxed Upper Arm Circumference: Girls

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	7	16.74	0.75	18.25	15.23
7	21	16.61	0.74	18.09	15.13
8	37	16.93	1.20	19.34	14.52
9	51	17.42	1.24	19.90	14.95
10	77	18.00	1.38	20.75	15.24
11	80	19.51	1.88	23.26	15.76
12	102	20.60	1.96	24.52	16.67
13	79	21.47	2.04	25.55	17.38
14	90	22.82	2.03	26.88	18.76
15	81	23.58	2.34	28.26	18.91
16	66	24.37	2.43	29.23	19.51
17	66	25.33	2.33	29.98	20.67
18	37	25.06	2.31	29.69	20.44
	794				

Figure 4.7

Measurements of the Relaxed Upper Arm Circumference: Ubombo girls from 6.0-18.0 years of age

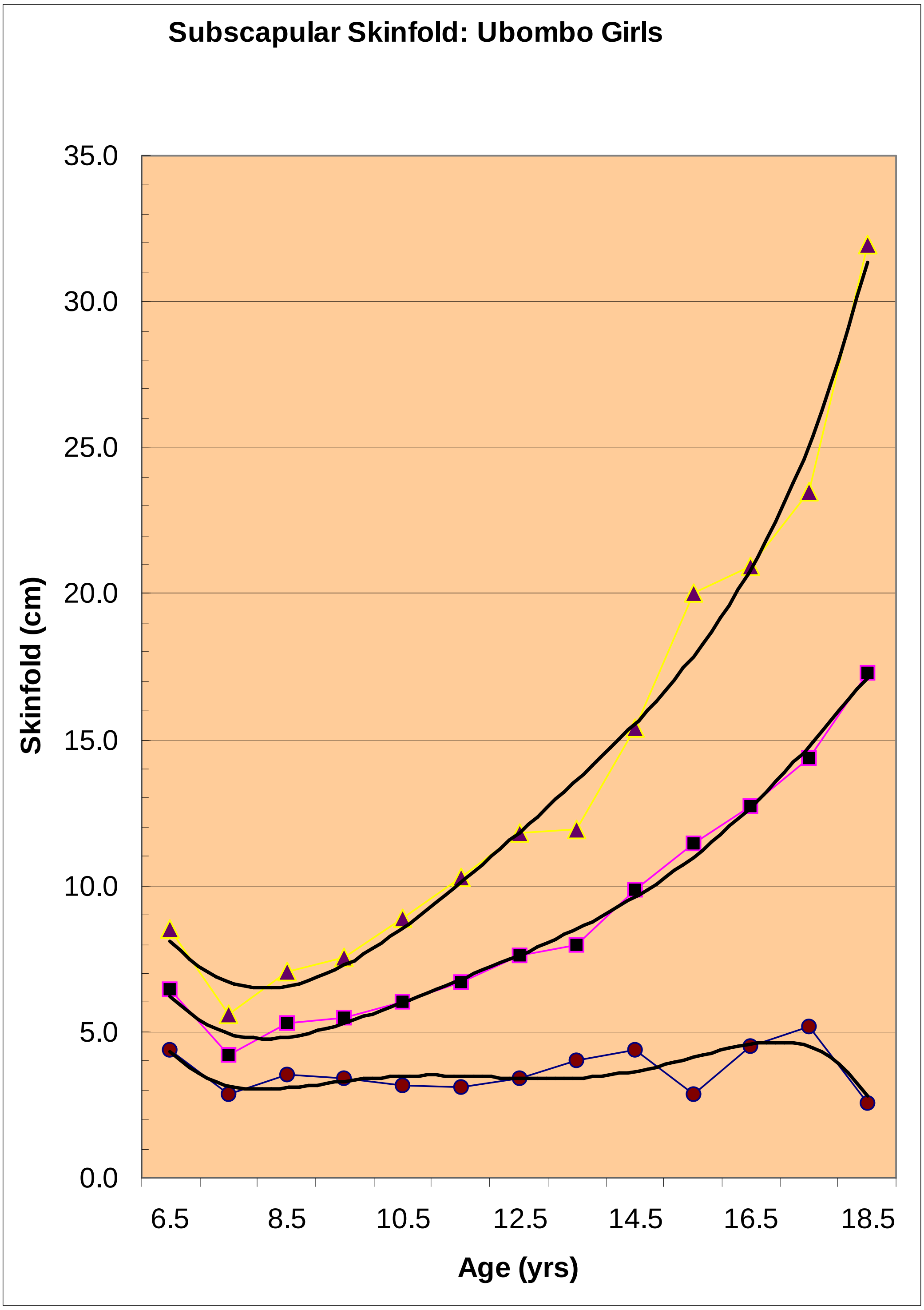


Regression lines smoothed by the imposition of polynomial trend lines of 5th order of the excel spread sheet.

Table 4.8
Table of measurements taken from sub-scapular skinfold of 6.0-18.0 year old girls from Ubombo

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	7	6.46	1.04	8.54	4.39
7	22	4.22	0.69	5.60	2.85
8	37	5.29	0.89	7.07	3.51
9	50	5.48	1.04	7.55	3.40
10	72	6.04	1.42	8.88	3.19
11	65	6.71	1.79	10.28	3.13
12	83	7.59	2.11	11.81	3.38
13	60	7.97	1.99	11.94	4.00
14	70	9.88	2.75	15.39	4.38
15	60	11.44	4.30	20.05	2.84
16	45	12.70	4.11	20.92	4.49
17	57	14.34	4.58	23.50	5.19
18	27	17.26	7.35	31.96	2.57
	655				

Figure 4.8
Graphical representation of sub-scapular skinfold actual measurements taken from Ubombo girls (6 to 18) yrs



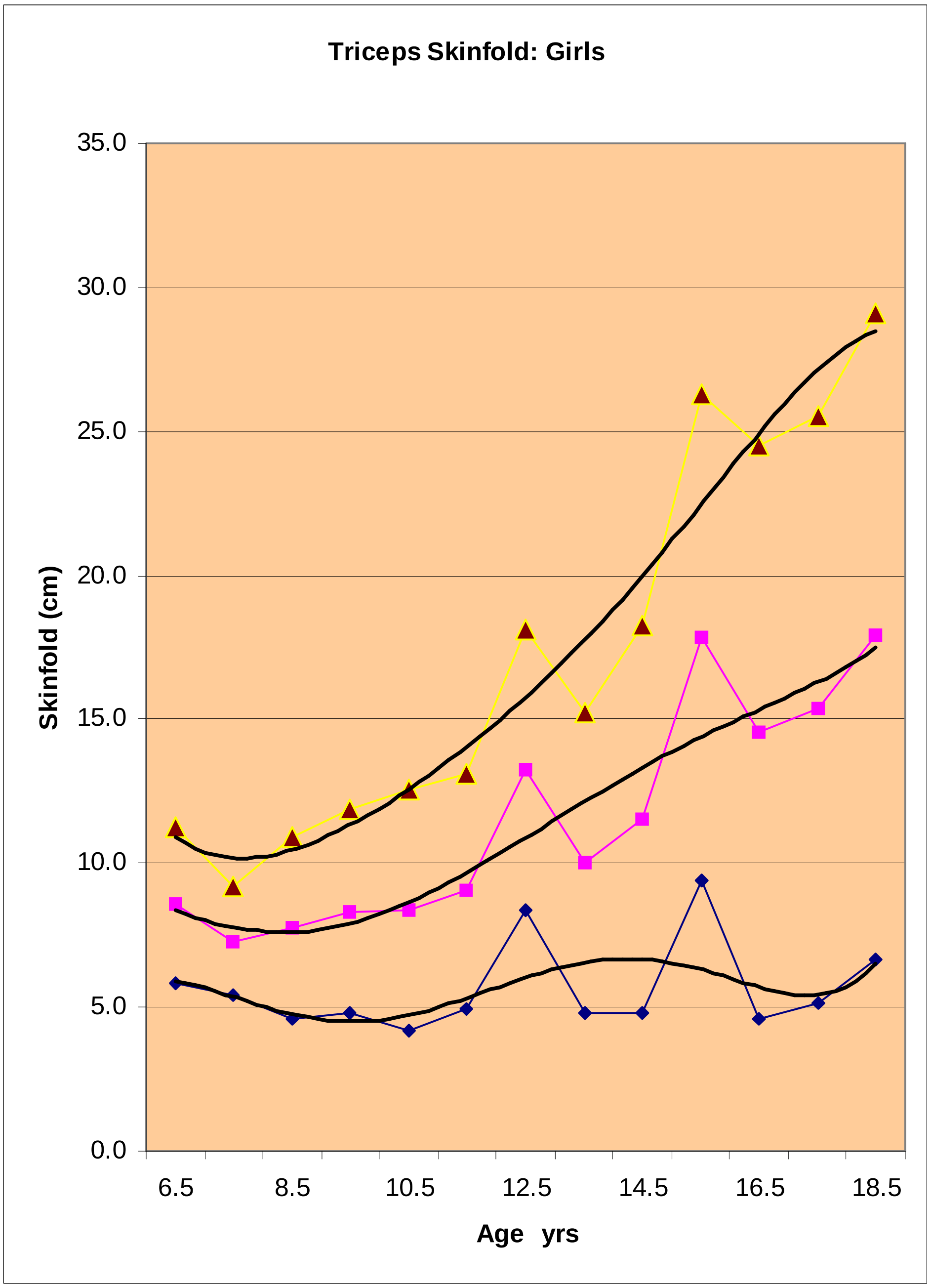
Regression lines smoothing was by the polynomial trend lines of 5th order of the excel spread sheet.

Table 4.9

Triceps Skinfold measurements of Ubombo girls (6.0 – 18.0 years)

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	7	8.57	1.35	11.28	5.87
7	22	7.31	0.94	9.20	5.42
8	37	7.76	1.56	10.88	4.63
9	53	8.32	1.76	11.85	4.79
10	77	8.40	2.09	12.58	4.22
11	77	9.03	2.05	13.14	4.92
12	101	13.27	2.43	18.14	8.40
13	76	10.00	2.60	15.21	4.79
14	88	11.52	3.35	18.23	4.81
15	81	17.85	4.22	26.30	9.40
16	67	14.57	4.98	24.53	4.61
17	64	15.35	5.09	25.53	5.17
18	36	17.90	5.61	29.12	6.67
	786				

Figure 4.9
Graphical representation of the Triceps Skinfold actual measurements of Ubombo girls from 6.0-18.0 years

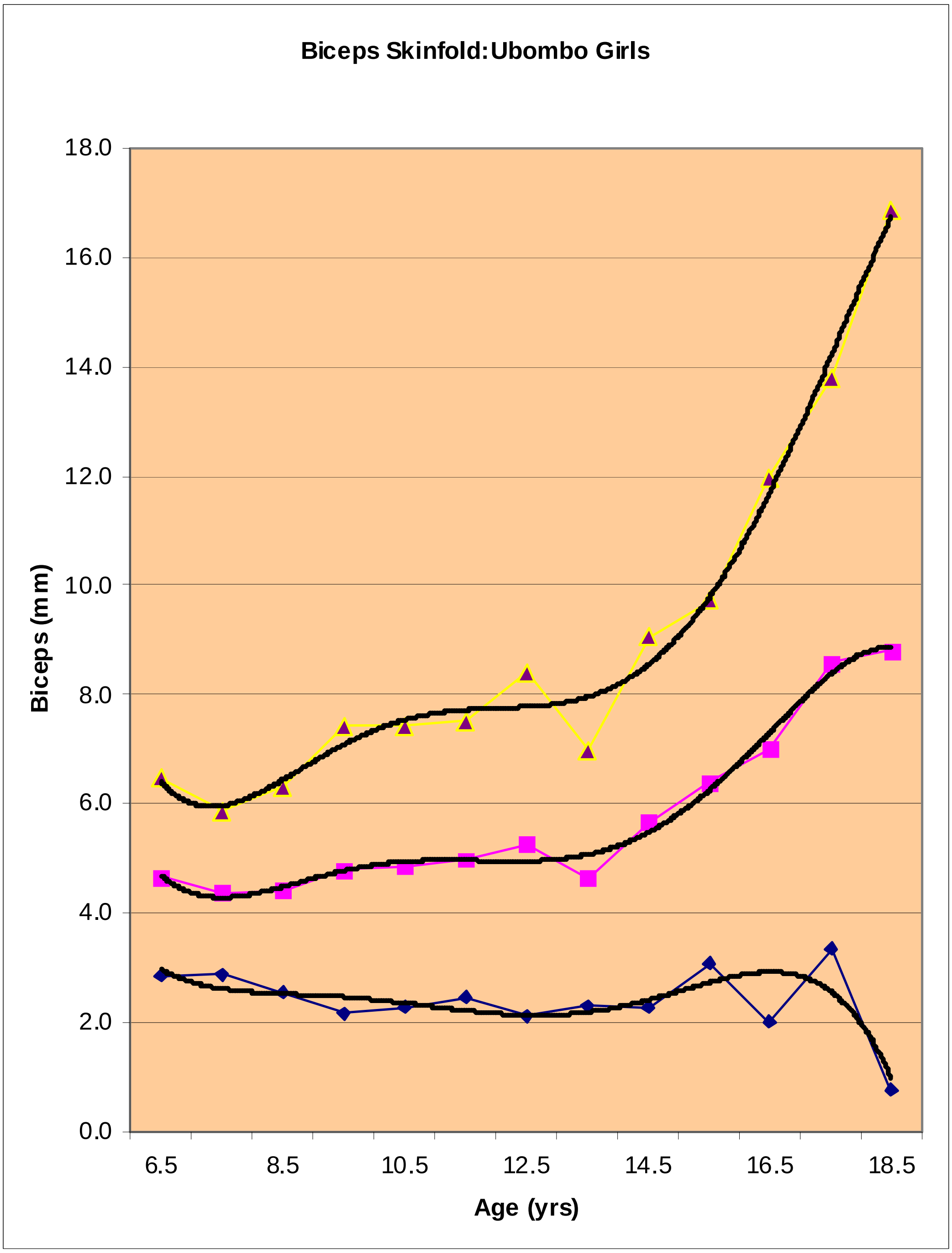


Regression lines smoothing by the polynomial trend lines of 5th order of the excel spread made a perfect fit.

Table 4.10
Biceps Skinfold of Ubombo girls from 6.0-18.0 years of age

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	7	4.66	0.90	6.46	2.86
7	21	4.37	0.75	5.87	2.86
8	37	4.41	0.94	6.30	2.53
9	51	4.79	1.32	7.43	2.16
10	78	4.84	1.29	7.42	2.27
11	78	4.98	1.27	7.51	2.45
12	100	5.26	1.58	8.41	2.10
13	74	4.63	1.17	6.97	2.29
14	88	5.66	1.70	9.06	2.27
15	79	6.39	1.66	9.71	3.07
16	64	6.99	2.49	11.98	2.01
17	64	8.58	2.62	13.81	3.34
18	36	8.81	4.03	16.86	0.75
	777				

Figure 4.10
Biceps skinfold actual measurements of Ubombo girls from 6.0 to 18.0 years



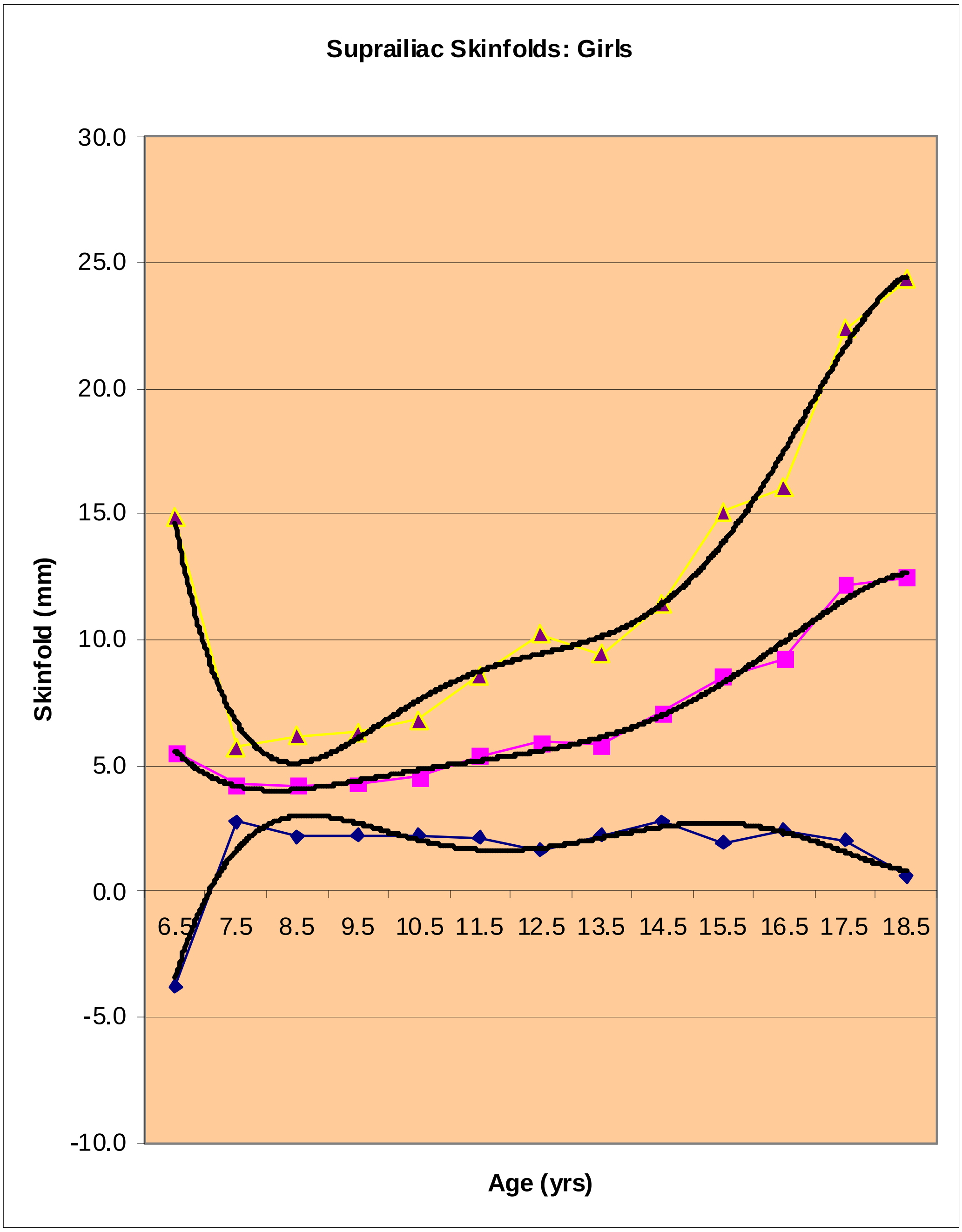
Regression smoothing were by polynomial trend lines of 5th order of the excel spread sheet.

Table 4.11

Supra-iliac Skinfolds of Ubombo girls (6.0 to 18.0 years)

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	7	5.53	4.66	14.86	-3.79
7	22	4.25	0.74	5.73	2.78
8	37	4.17	0.99	6.16	2.18
9	51	4.26	1.03	6.32	2.21
10	69	4.52	1.15	6.82	2.22
11	65	5.36	1.62	8.60	2.11
12	82	5.92	2.15	10.21	1.62
13	58	5.82	1.80	9.42	2.21
14	71	7.08	2.16	11.39	2.77
15	60	8.53	3.29	15.11	1.94
16	47	9.22	3.40	16.03	2.41
17	59	12.19	5.07	22.34	2.05
18	27	12.47	5.93	24.34	0.60
	655				

Figure 4.11
Supra-iliac skinfold actual measurements of Ubombo (UB) girls (6.0 – 18.0 yrs)



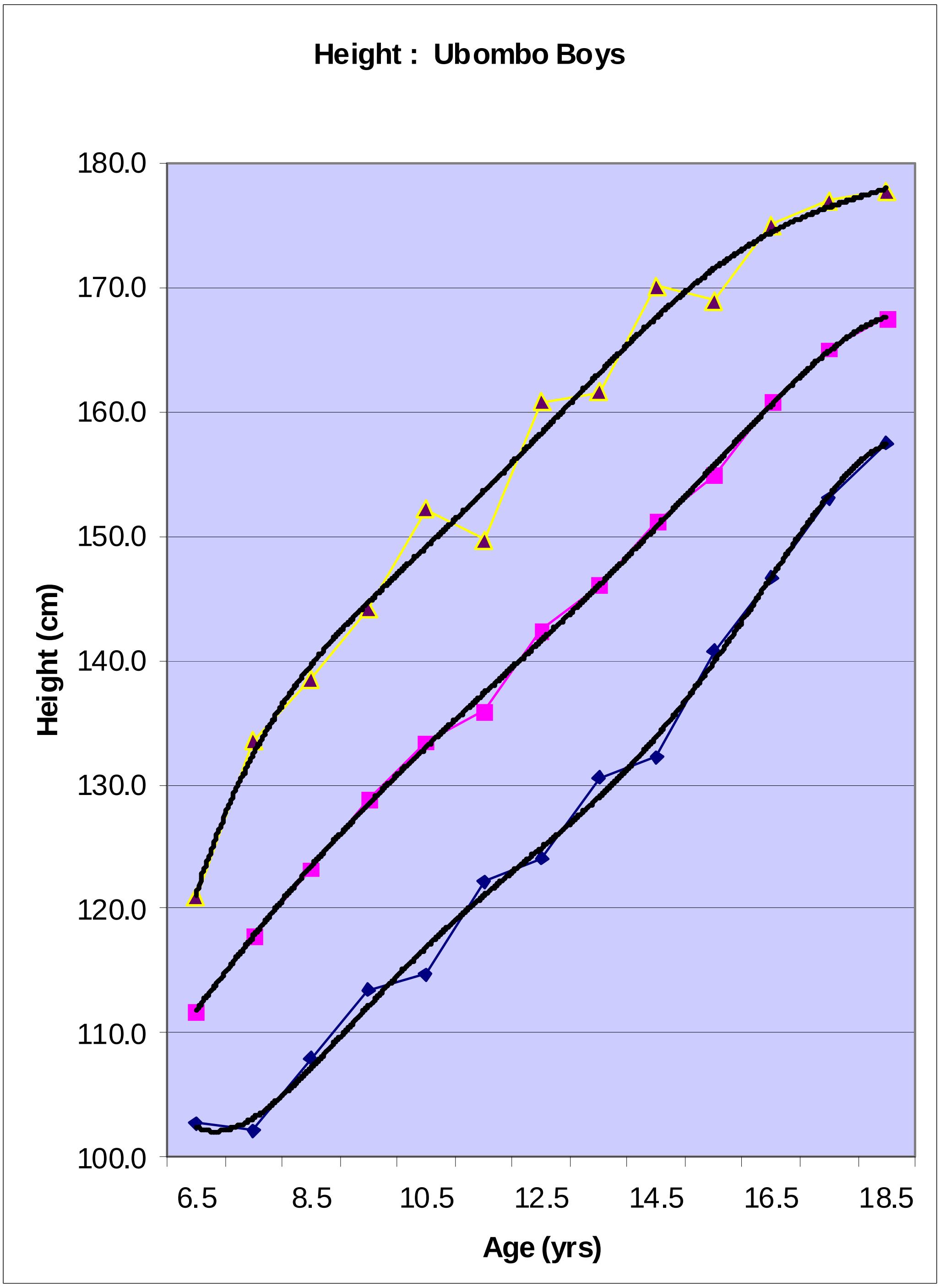
Regression lines smoothing by polynomial trend lines of the excel spread sheet.

4.3 UBOMBO Boys

Table 4.12
Height (cm) means values of Ubombo boys from the age of 6.0-18.0 years

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	8	111.81	4.54	120.89	102.73
7	28	117.83	7.84	133.52	102.15
8	28	123.23	7.64	138.51	107.95
9	36	128.81	7.66	144.12	113.49
10	43	133.45	9.34	152.12	114.78
11	45	135.96	6.89	149.73	122.19
12	122	142.42	9.19	160.80	124.04
13	43	146.08	7.74	161.56	130.60
14	52	151.18	9.48	170.14	132.22
15	53	154.85	7.05	168.95	140.75
16	65	160.82	7.09	174.99	146.65
17	57	165.04	5.99	177.01	153.06
18	51	167.60	5.07	177.74	157.46
	631				

Figure 4.12
Ubombo boys: Height means values (6.0-18.0 years)



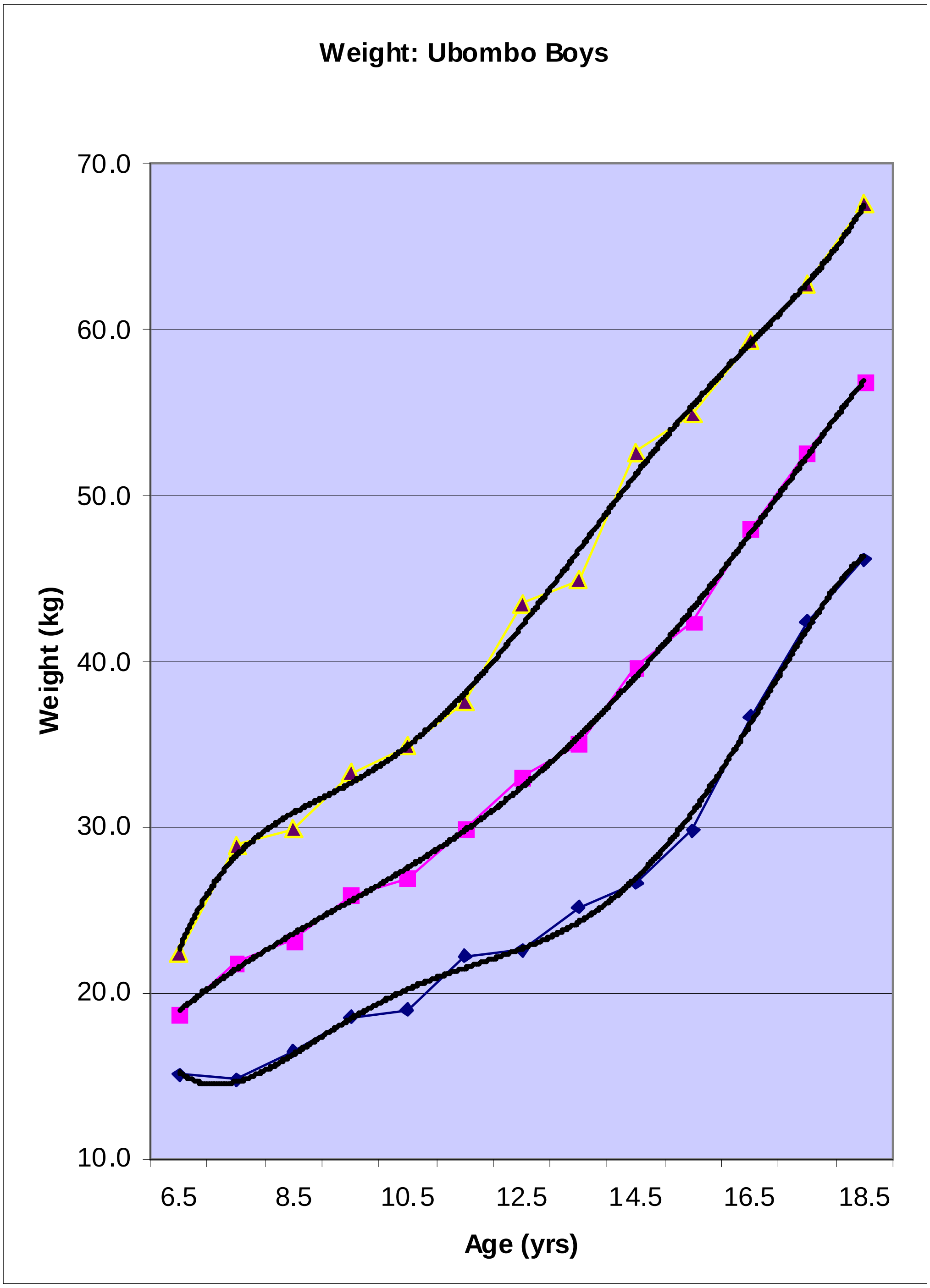
Blue colour was used for all the boys' charts. Curves were smoothed by polynomial trend line of 5th order of the excel spreadsheet.

Table 4.13
Mean weights of Ubombo boys from 6.0 – 18.0 years

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	8	18.79	1.84	22.47	15.11
7	28	21.86	3.52	28.89	14.82
8	28	23.18	3.34	29.85	16.51
9	36	25.92	3.69	33.30	18.55
10	43	26.94	3.97	34.87	19.00
11	44	29.87	3.82	37.50	22.23
12	50	33.05	5.22	43.49	22.61
13	43	35.03	4.92	44.86	25.19
14	52	39.64	6.49	52.63	26.66
15	54	42.34	6.25	54.85	29.83
16	63	47.98	5.66	59.30	36.66
17	54	52.58	5.10	62.78	42.38
18	52	56.84	5.34	67.53	46.16
	555				

Figure 4.13

Weight of Ubombo boys by age: (6.0 to 18.0 years)

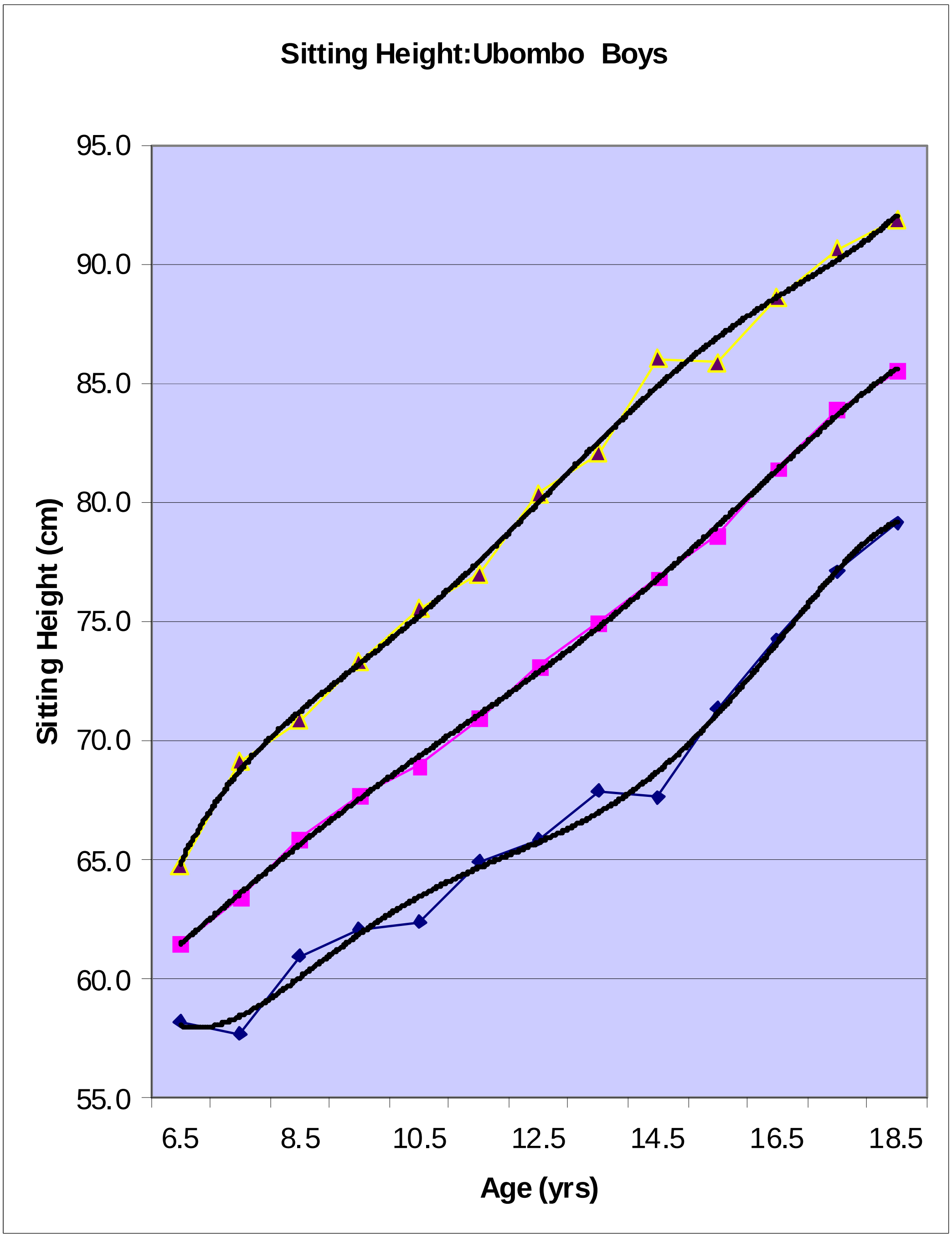


Blue colour was used for all the boys' charts. Curves were smoothed by Polynomial trend lines of 5th order of the excel spreadsheet.

Table 4.14
Sitting Height mean values of Ubombo Boys (6.0 – 18.0 years)

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	8	61.49	1.63	64.75	58.23
7	28	63.43	2.85	69.13	57.73
8	27	65.90	2.47	70.83	60.97
9	36	67.69	2.79	73.28	62.10
10	43	68.97	3.28	75.52	62.41
11	44	70.97	3.02	77.02	64.93
12	50	73.13	3.64	80.40	65.85
13	43	74.96	3.54	82.03	67.89
14	52	76.82	4.60	86.02	67.63
15	53	78.63	3.63	85.88	71.38
16	65	81.41	3.58	88.57	74.25
17	57	83.87	3.38	90.62	77.11
18	52	85.53	3.18	91.89	79.17
	558				

Figure 4.14
Graphical representation of Sitting Height mean values of Ubombo Boys aged 6.0 – 18.0 years



Regression lines smoothing by polynomial trend lines of the 5th order.

Table 4.15
Bi-acromial Diameter of Ubombo Boys from 6.0-18.0 years

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	8	24.11	1.14	26.39	21.83
7	28	25.42	1.74	28.90	21.95
8	28	26.61	1.90	30.40	22.82
9	35	27.66	1.73	31.12	24.20
10	43	28.65	1.82	32.29	25.01
11	44	29.33	1.88	33.08	25.57
12	49	30.17	2.10	34.38	25.96
13	43	31.34	2.11	35.56	27.12
14	53	32.52	2.63	37.77	27.26
15	53	33.71	2.00	37.71	29.71
16	65	33.50	2.54	38.58	28.43
17	53	36.38	1.74	39.85	32.90
18	50	37.31	1.73	40.78	33.84
	552				

Table 4.15 (Kgamphe and Cameron) denotes a consistent gain in Bi-acromial Diameter of 1.0 cm over all ages except for a slightly bigger increase of about 3.0 cm between 16.0 and 17.0 years.

Figure 4.15

Bi-acromial Diameter: mean values of Ubombo boys (6.0-18.0 years)

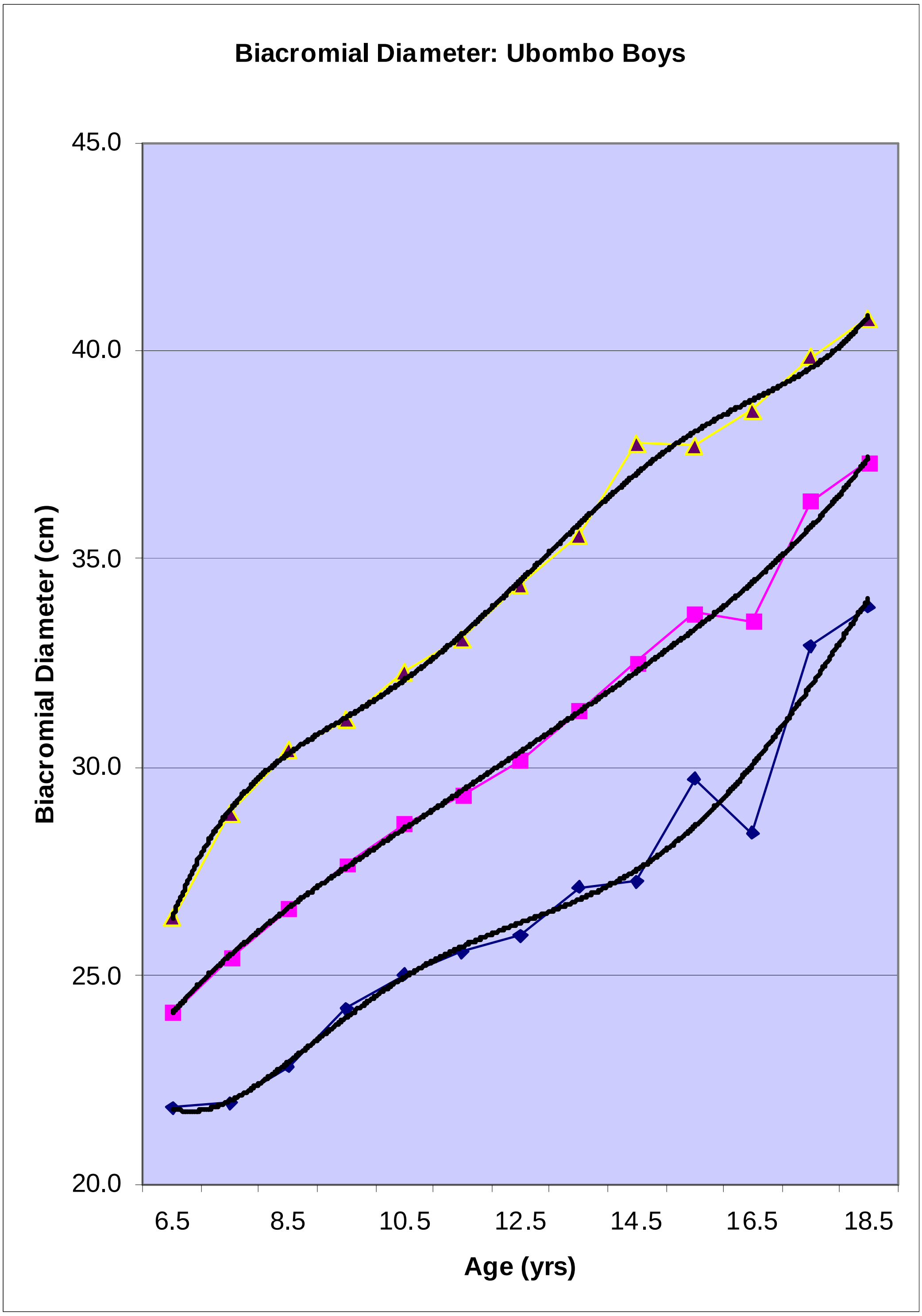


Table 4.16
Means and values of the Bi-iliac Diameter of Ubombo Boys from 6.0-18.0 years

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	8	16.46	0.95	18.36	14.56
7	28	17.77	1.38	20.53	15.01
8	28	18.22	1.20	20.62	15.81
9	36	19.13	1.28	21.70	16.56
10	42	19.68	1.26	22.20	17.15
11	45	19.97	1.11	22.18	17.75
12	49	20.84	1.34	23.52	18.17
13	42	21.40	1.19	23.79	19.01
14	52	22.36	1.59	25.54	19.19
15	54	22.93	1.25	25.43	20.43
16	63	23.90	1.69	27.25	20.48
17	55	24.87	1.43	27.72	22.01
18	51	25.30	1.49	28.27	22.33
	553				

Figure 4.16
Bi-iliac means values of diameters of Ubombo Boys (6.0 – 18.0 years)

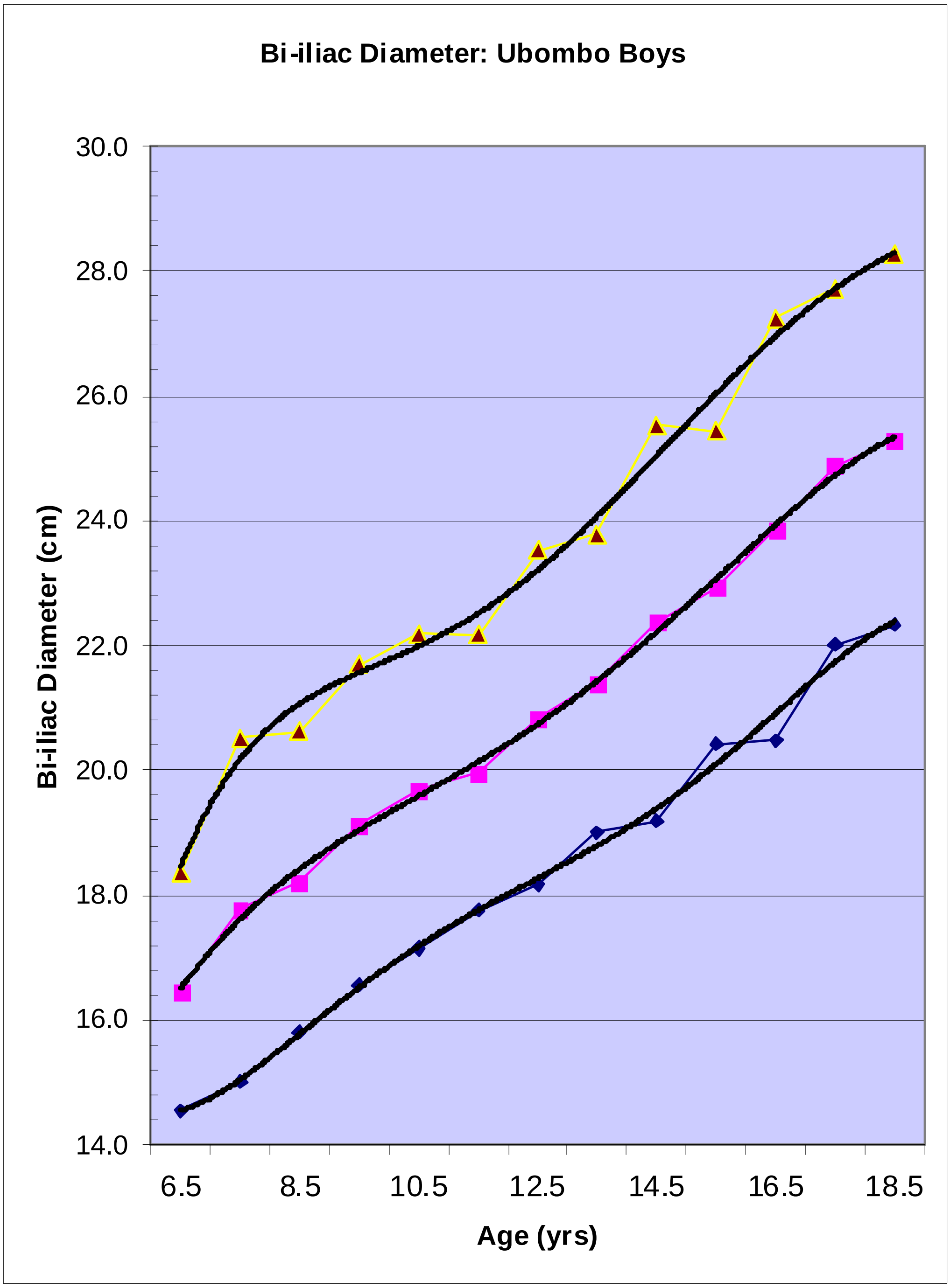


Table 4.17
Head Circumferences (cm.) of Ubombo Boys from 6.0 to 18.0 years

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	8	51.91	1.22	54.35	49.47
7	27	52.06	1.37	54.80	49.33
8	28	52.09	1.27	54.63	49.55
9	34	52.11	0.92	53.95	50.27
10	43	52.54	1.51	55.56	49.52
11	45	52.87	1.43	55.73	50.01
12	49	53.46	1.42	56.30	50.62
13	43	53.60	1.54	56.68	50.53
14	53	53.88	1.64	57.17	50.59
15	54	53.85	1.64	57.14	50.57
16	64	54.69	1.54	57.76	51.61
17	57	55.11	1.78	58.67	51.55
18	52	55.46	1.49	58.43	52.48
	557				

Figure 4.17
Head Circumferences of Ubombo Boys (6.0 to 18.0 years)

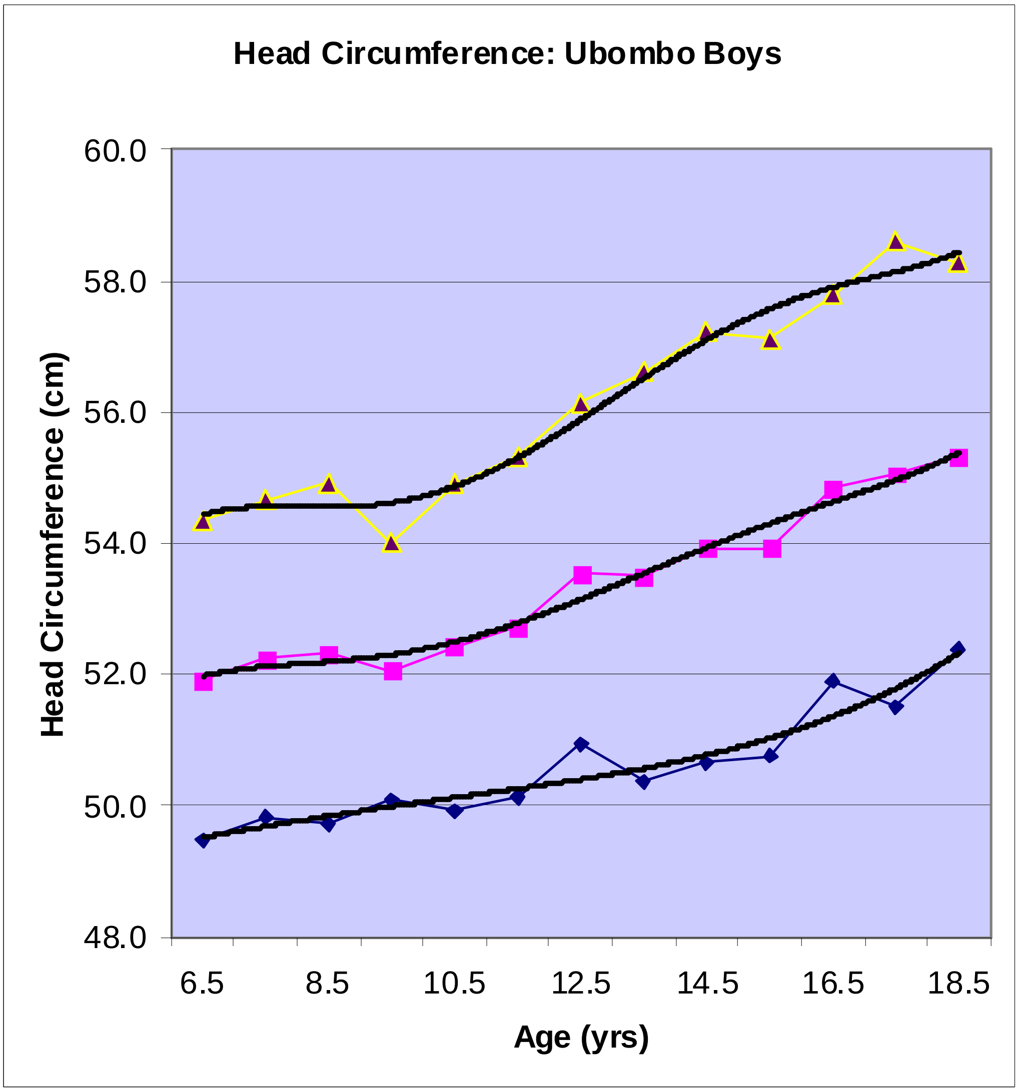


Table 4.18
Mean values of the Relaxed Upper Arm Circumferences of Ubombo Boys from 6.0-18.0 years

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	8	16.45	0.57	17.59	15.31
7	28	16.11	1.99	20.08	12.13
8	28	16.83	0.86	18.55	15.11
9	35	17.12	1.08	19.28	14.96
10	41	17.66	1.03	19.71	15.61
11	45	18.21	1.45	21.11	15.31
12	50	19.05	1.90	22.84	15.26
13	43	19.23	1.35	21.93	16.54
14	52	20.30	1.40	23.10	17.49
15	51	20.51	1.63	23.76	17.25
16	63	22.20	1.67	25.54	18.85
17	57	23.77	2.08	27.92	19.61
18	51	24.08	1.46	27.00	21.17
	552				

Figure 4.18
Relaxed upper arms circumference measurements from Ubombo Boys (6.0-18.0 years)

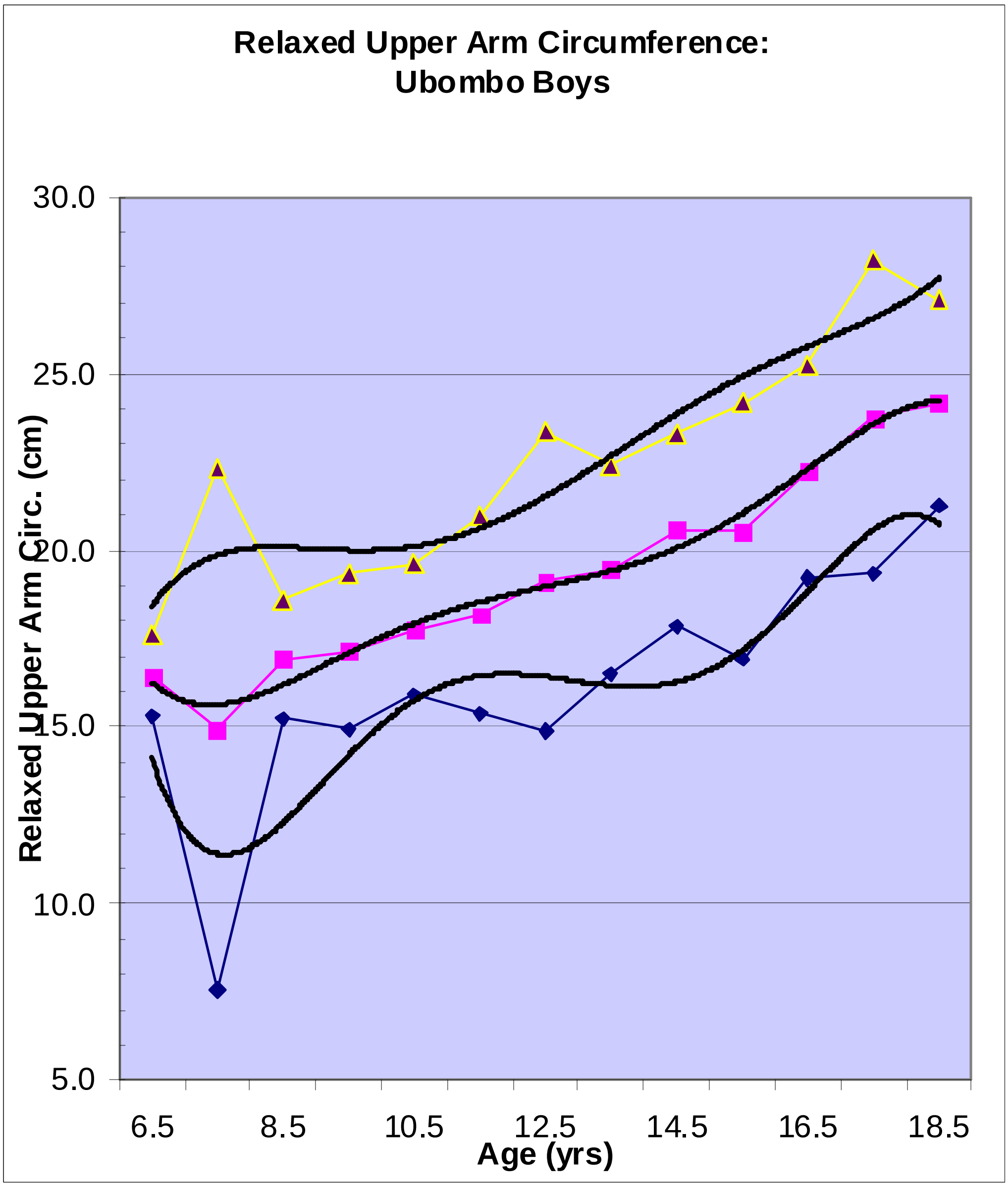
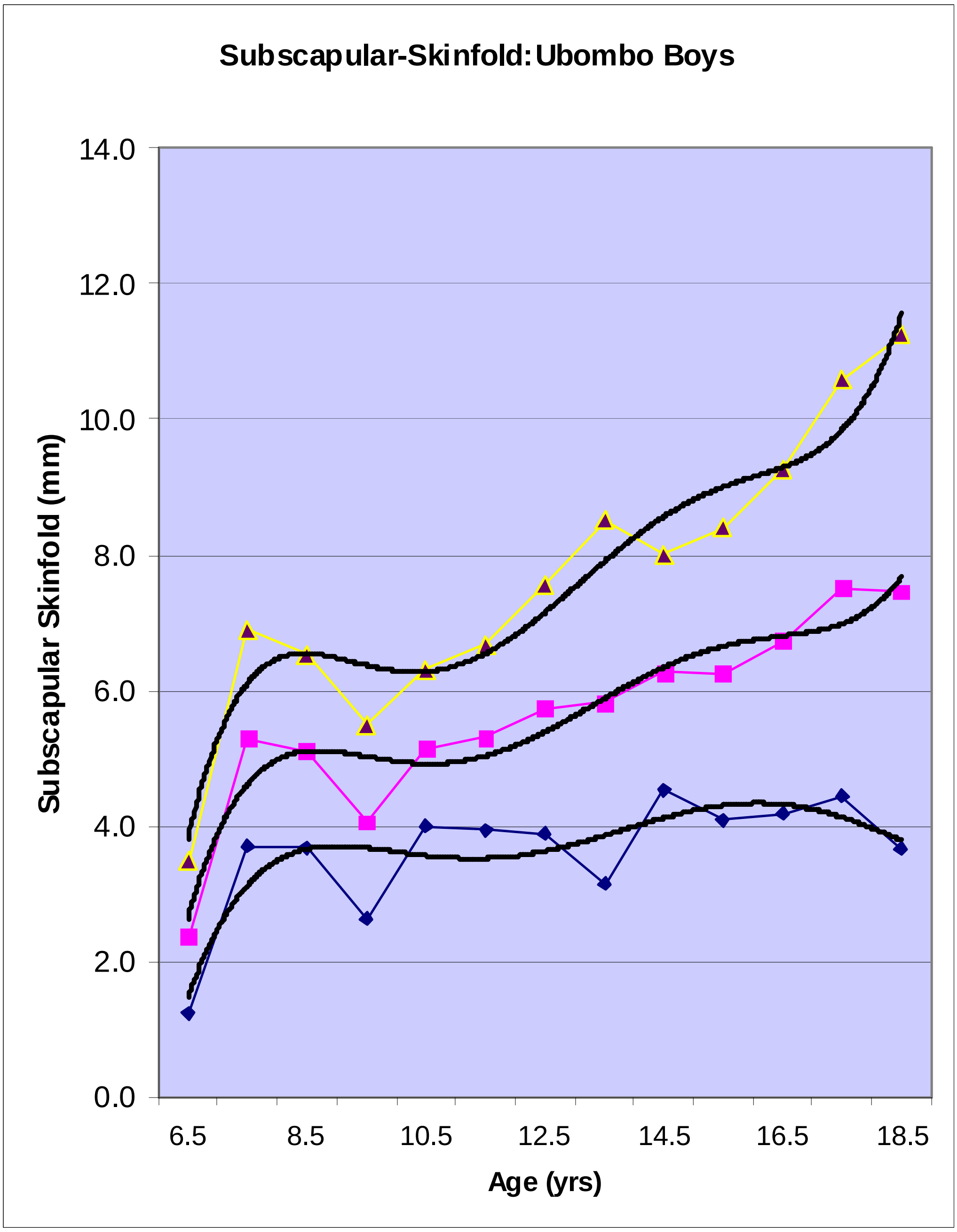


Table 4.19
Mean values of the sub-scapular skinfold of 6.0-18.0 year olds from Ubombo

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	8	4.72	1.12	6.96	2.48
7	27	5.30	0.84	6.99	3.62
8	28	5.13	0.79	6.70	3.56
9	35	5.21	0.91	7.02	3.40
10	43	5.11	0.60	6.31	3.91
11	44	5.21	0.67	6.55	3.86
12	49	5.70	0.77	7.24	4.16
13	43	5.64	1.13	7.90	3.37
14	51	5.90	0.88	7.66	4.14
15	54	6.13	1.07	8.26	3.99
16	63	6.69	1.34	9.38	4.01
17	54	7.48	1.51	10.49	4.47
18	52	7.47	1.90	11.26	3.67
	551				

Figure 4.19
Skinfold mean values of sub-scapular skinfolds of Ubombo boys (6-18 yrs)

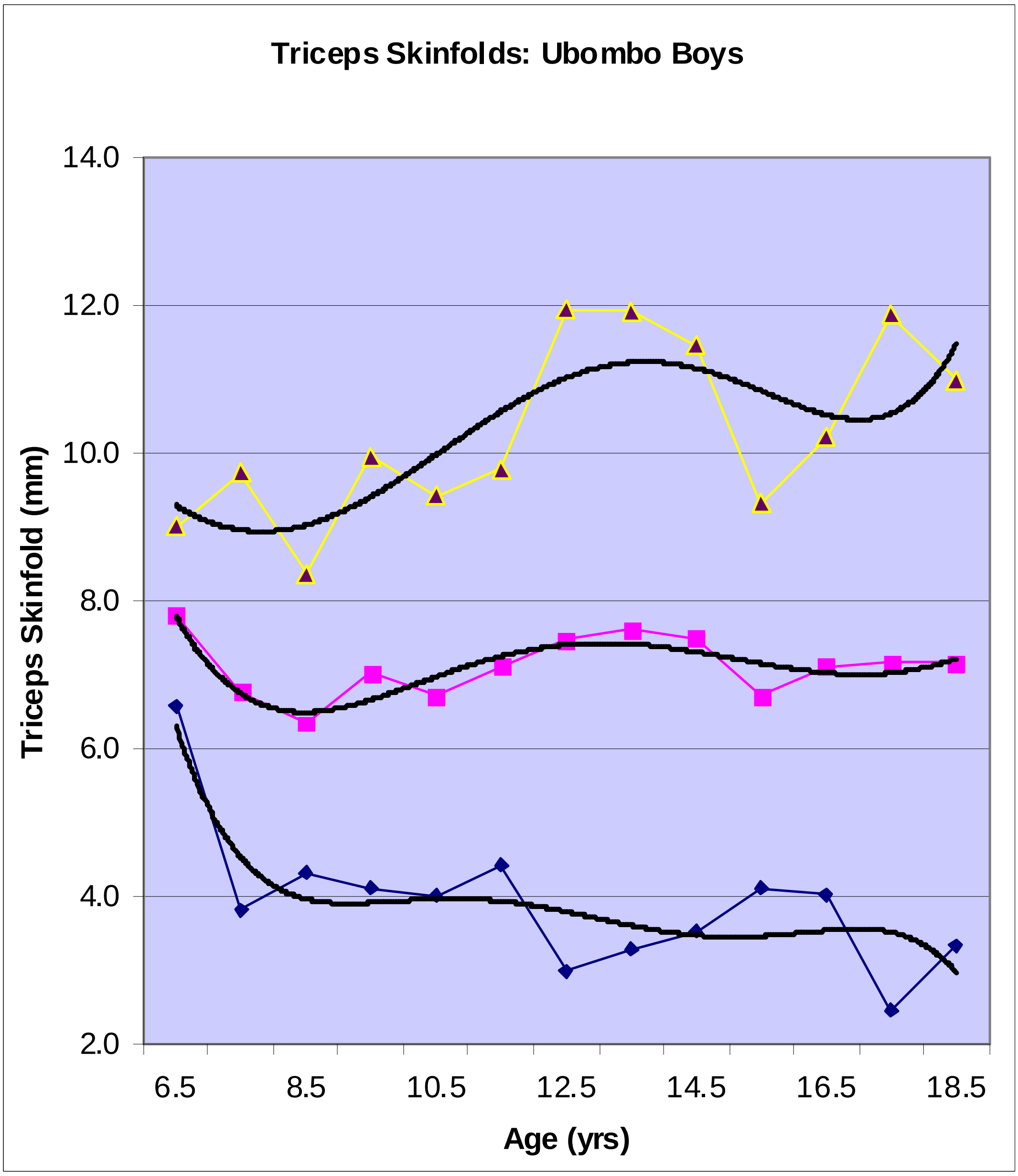


Regression lines smoothing by polynomial trend lines of the 5th order.

Table 4.20
Mean values of Triceps skinfolds of Ubombo boys from 6.0-18.0 years

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	7	7.80	0.61	9.02	6.58
7	28	6.94	1.56	10.05	3.82
8	27	6.39	1.04	8.47	4.32
9	35	7.05	1.30	9.66	4.45
10	43	6.97	1.56	10.08	3.85
11	44	7.05	1.28	9.60	4.50
12	49	7.26	1.92	11.11	3.42
13	43	7.20	1.75	10.70	3.70
14	52	7.14	1.69	10.53	3.76
15	54	6.62	1.29	9.20	4.04
16	64	7.04	1.68	10.41	3.67
17	56	7.22	2.24	11.70	2.75
18	51	7.00	1.90	10.80	3.20
	553				

Figure 4.20
Graphical representation of the actual measurements from the BU boys Triceps skinfold

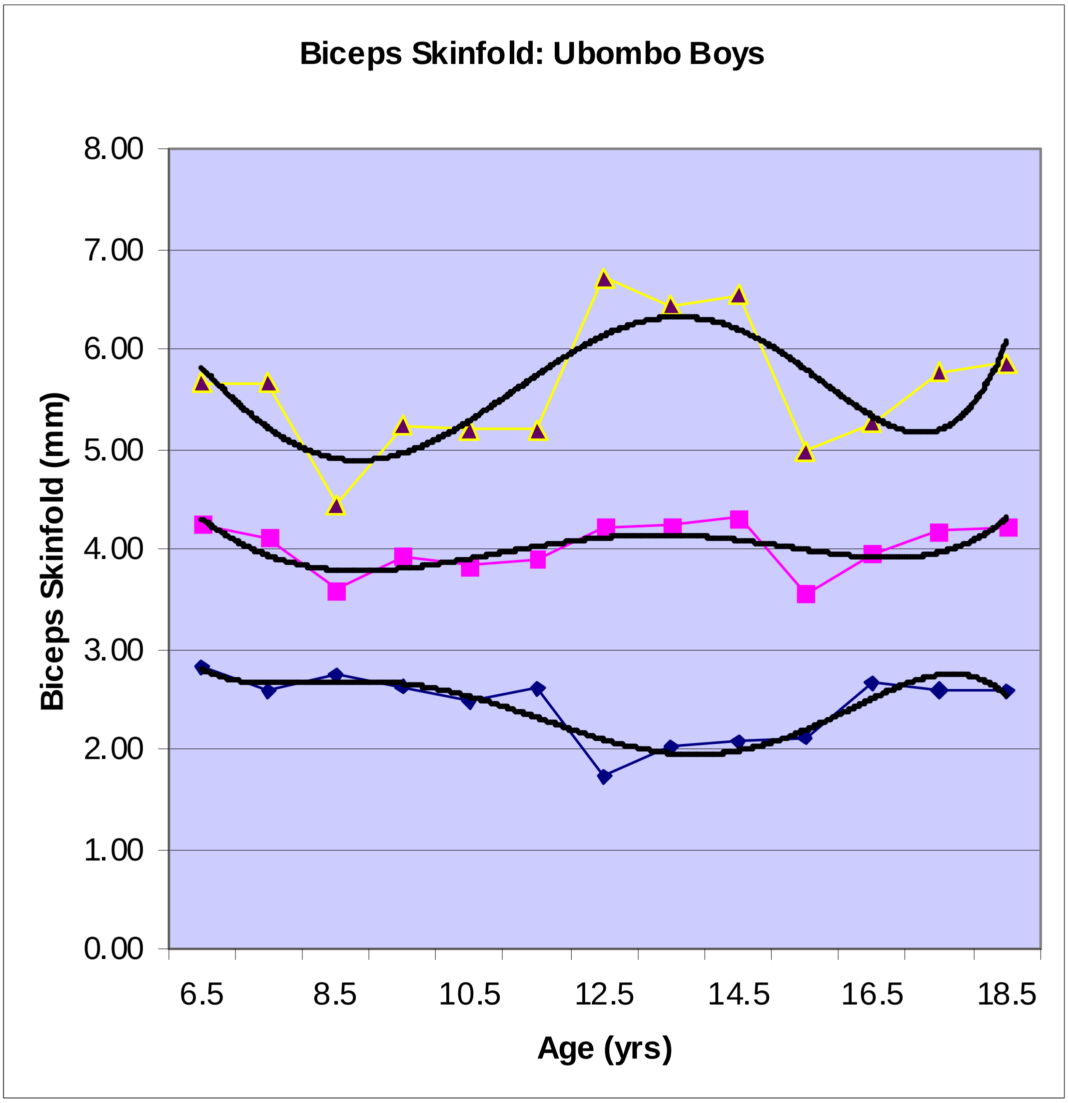


Regression lines smoothing by polynomial trend lines of the 5th order.

Table 4.21
The mean values of Biceps skinfolds of Ubombo boys

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	8	4.25	0.71	5.67	2.83
7	26	4.29	0.93	6.15	2.43
8	28	3.73	0.49	4.71	2.75
9	35	3.95	0.68	5.30	2.60
10	42	4.01	0.69	5.39	2.64
11	45	3.84	0.65	5.13	2.55
12	50	4.00	0.97	5.93	2.06
13	42	3.92	0.92	5.76	2.07
14	52	3.99	0.93	5.85	2.13
15	54	3.35	0.70	4.74	1.95
16	60	3.94	0.72	5.37	2.51
17	55	4.16	0.75	5.65	2.67
18	52	4.20	0.85	5.89	2.51
	549				

Figure 4.21
Graphical biceps skinfold mean values of Ubombo Boys of 6- 18 yrs

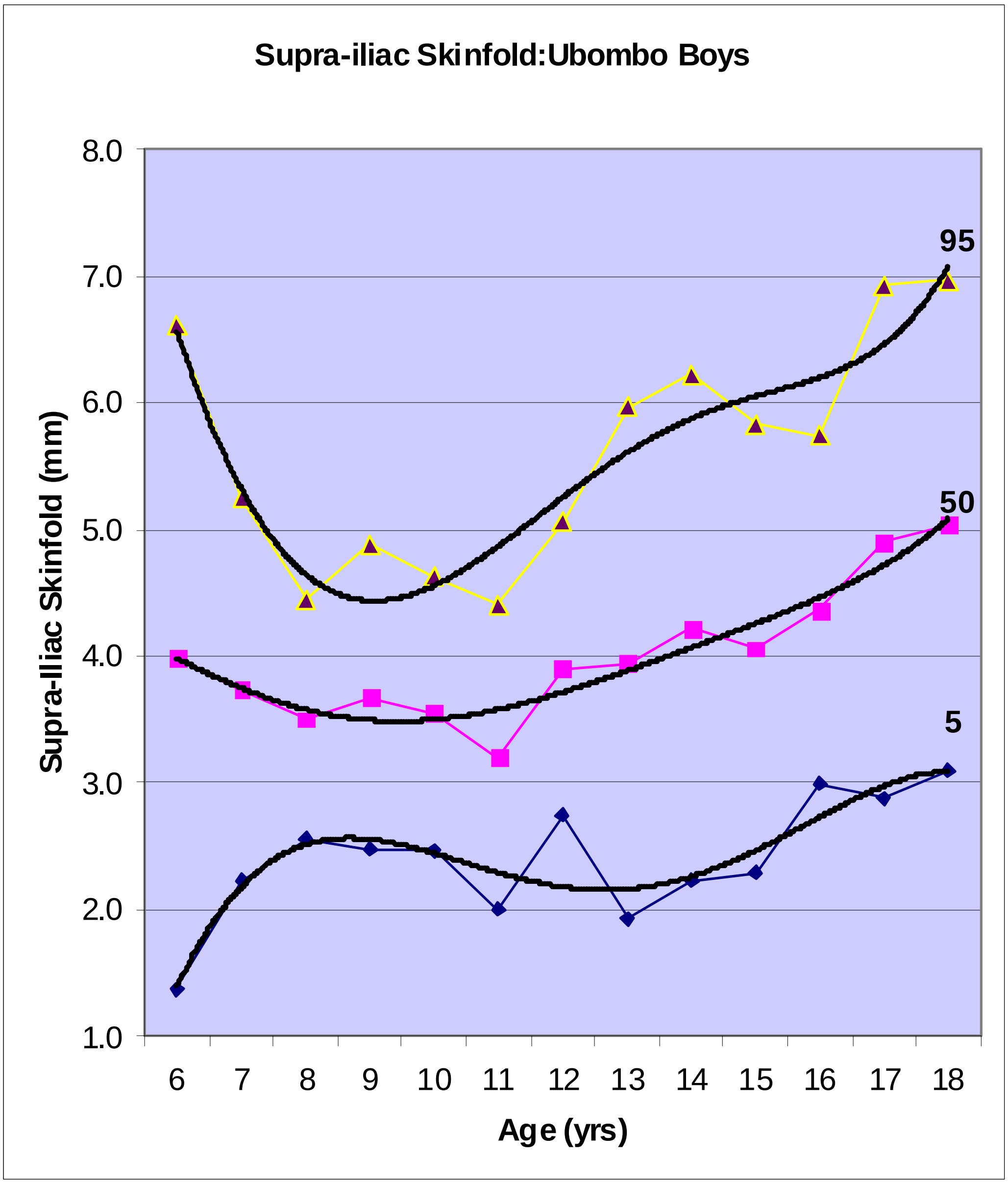


Regression lines smoothing was by polynomial trend lines of the excel spread sheet.

Table 4.22
Mean values of Supra-iliac skinfolds of Ubombo boys

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	7	3.99	1.31	6.61	1.37
7	28	3.85	0.86	5.57	2.13
8	27	3.50	0.44	4.38	2.62
9	36	3.69	0.63	4.95	2.44
10	41	3.57	0.57	4.70	2.43
11	44	3.26	0.60	4.46	2.06
12	47	3.82	0.73	5.29	2.36
13	42	3.96	0.92	5.80	2.13
14	51	4.11	0.91	5.93	2.29
15	54	4.06	0.86	5.78	2.34
16	63	4.51	0.69	5.89	3.14
17	56	4.92	1.05	7.02	2.82
18	52	4.94	0.93	6.81	3.07
	548				

Figure 4.22
Graph of Supra-iliac mean values of Ubombo boys



Regression lines smoothing by polynomial trend lines of the 5th order.

4.5 Vaalwater Data: Girls

The following set of tables and figures are derived from computed weighted mean values from Vaalwater data of boys and girls from 6.0- 18.0 years.

Table 4.23
Height measurements of Vaalwater girls from 6.0-18.0 years

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6.0	8.0	112.01	1.14	114.29	109.74
7.0	26.0	117.08	4.71	126.50	107.67
8.0	43.0	122.19	6.04	134.28	110.11
9.0	48.0	128.09	7.79	143.67	112.50
10.0	46.0	131.74	6.60	144.93	118.55
11.0	51.0	136.16	6.67	149.50	122.81
12.0	45.0	138.36	9.39	157.13	119.58
13.0	39.0	144.28	12.19	168.65	119.90
14.0	43.0	149.78	8.33	166.44	133.12
15.0	40.0	155.80	6.48	168.77	142.83
16.0	40.0	157.29	5.32	167.93	146.66
17.0	28.0	159.02	4.26	167.53	150.50
18.0	26.0	160.84	4.27	169.39	152.30
	483				

Table 4.23 (Kgamphe-Cameron) is a table of height mean values of Vaalwater girls between the ages of 6.0 and 18.0 years.

Figure 4.23
Vaalwater height measurements of girls 6.0-18.0 years

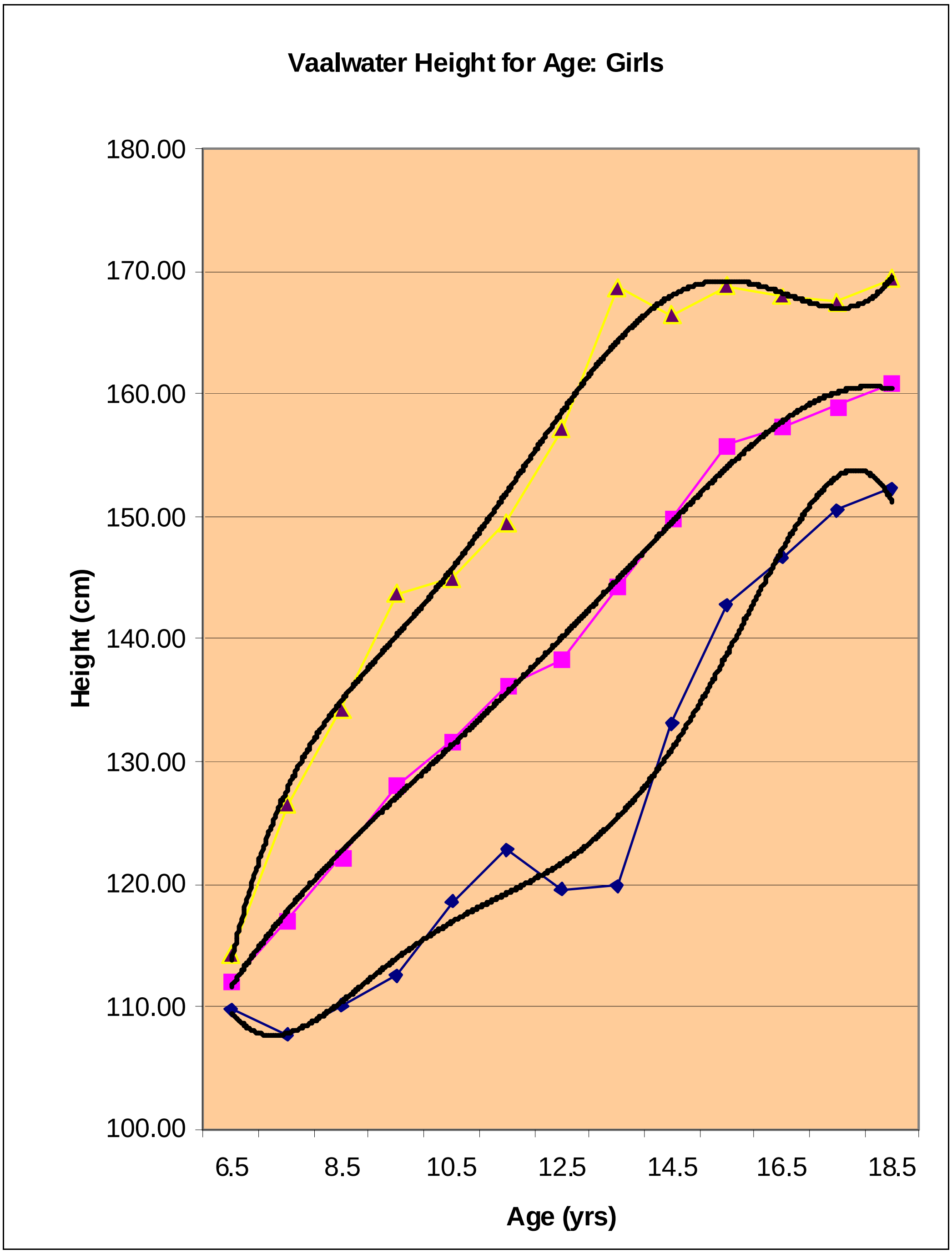


Table 4.24
Weight means annual values of Vaalwater girls: 6.0 – 18.0 years

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6.0	8.0	18.11	0.44	18.99	17.24
7.0	27.0	20.06	2.79	25.64	14.48
8.0	43.0	24.53	3.56	31.64	17.42
9.0	48.0	24.71	4.76	34.22	15.19
10.0	46.0	26.05	4.63	35.30	16.79
11.0	50.0	27.96	5.99	39.94	15.97
12.0	45.0	29.30	5.49	40.28	18.32
13.0	39.0	32.72	8.74	50.21	15.23
14.0	44.0	36.11	7.52	51.14	21.08
15.0	40.0	42.91	6.42	55.76	30.07
16.0	40.0	46.27	6.66	59.59	32.96
17.0	28.0	49.23	5.84	60.92	37.54
18.0	26.0	51.66	6.66	64.98	38.35
	484				

Figure 4.24
Vaalwater Girls: Weight measurements from 6.0-18.0 years

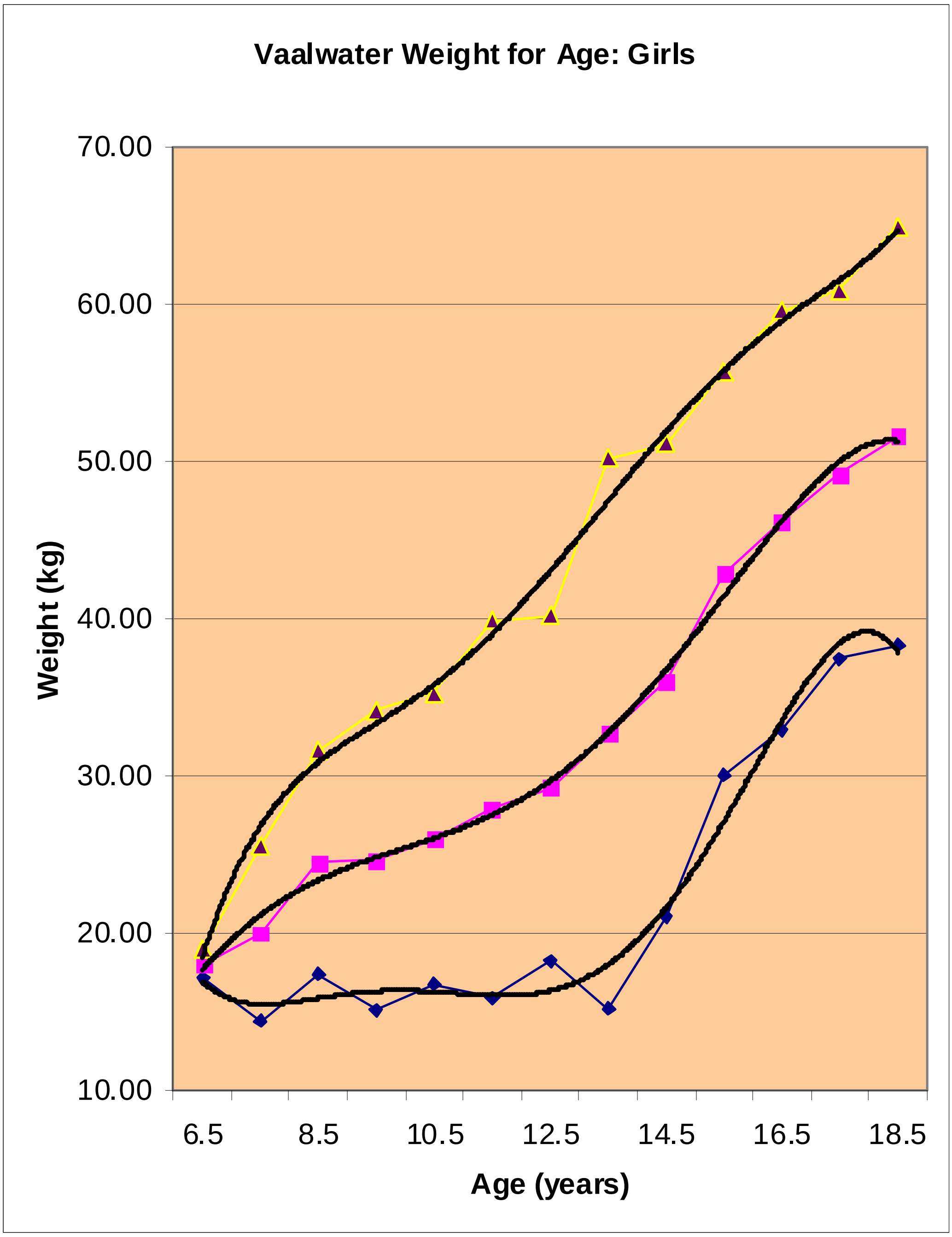


Table 4.25
Sitting Height mean values for Vaalwater girls from 6.0-18.0 years

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6.0	8.0	59.55	1.40	62.35	56.75
7.0	27.0	62.57	2.65	67.87	57.27
8.0	43.0	64.67	2.66	70.00	59.34
9.0	48.0	66.89	3.44	73.76	60.01
10.0	51.0	68.49	3.11	74.70	62.28
11.0	51.0	70.24	2.69	75.62	64.87
12.0	45.0	71.14	3.41	77.95	64.33
13.0	40.0	72.81	4.22	81.25	64.36
14.0	44.0	76.69	4.09	84.87	68.50
15.0	40.0	79.30	2.78	84.86	73.74
16.0	40.0	81.36	2.31	85.98	76.74
17.0	28.0	82.56	1.71	85.98	79.14
18.0	26.0	83.06	2.16	87.38	78.75
	491				

Figure 4.25
Sitting height mean values for Vaalwater girls from 6.0-18.0 years

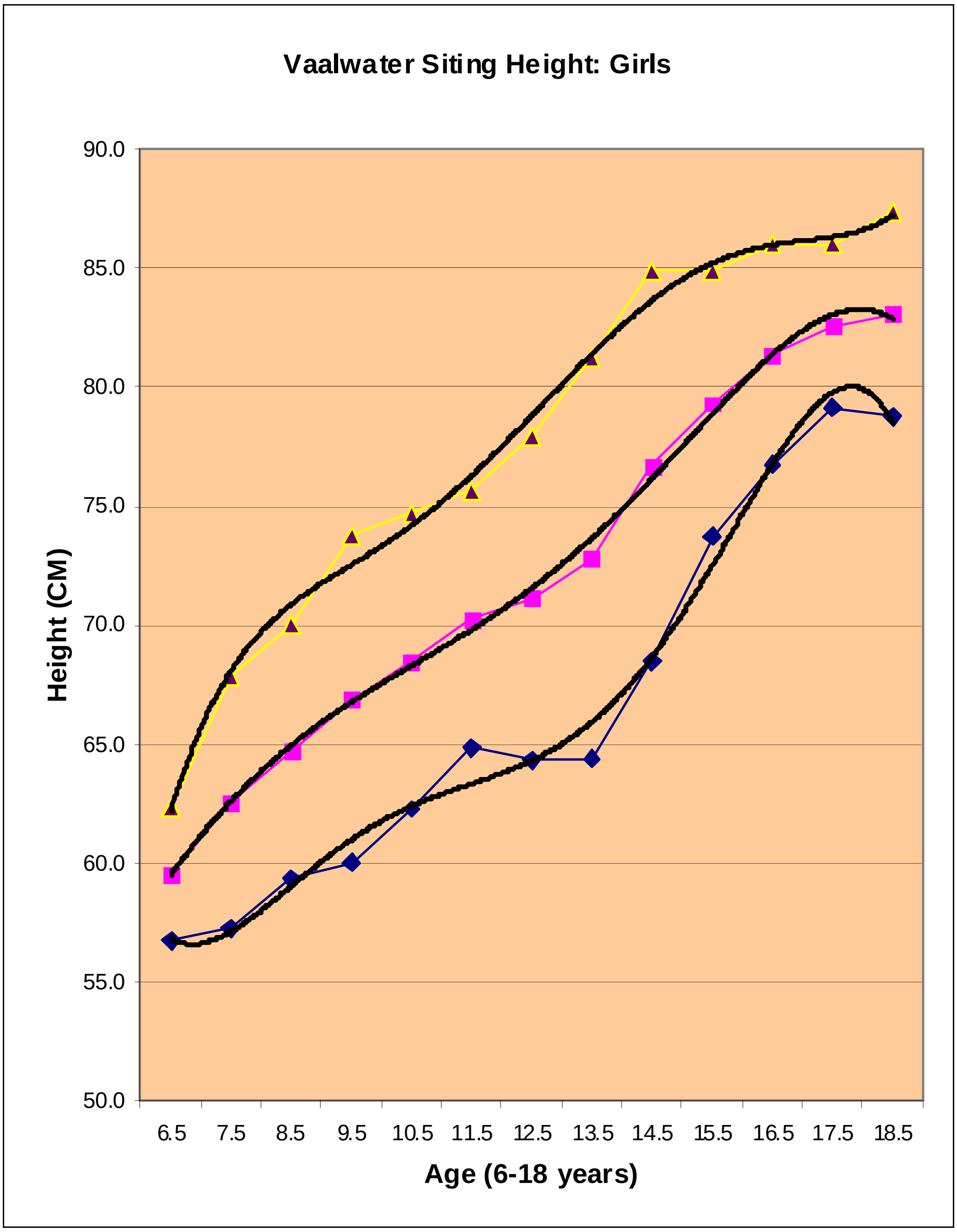


Table 4.26
Bi-acromial diameter means annual values for Vaalwater girls of 6.0-18.0 years of age

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6.0	8.0	24.61	0.69	26.00	23.23
7.0	27.0	25.01	1.43	27.86	22.15
8.0	43.0	26.38	2.07	30.53	22.23
9.0	48.0	27.02	2.22	31.46	22.58
10.0	46.0	27.53	2.01	31.54	23.52
11.0	50.0	28.45	2.02	32.48	24.41
12.0	45.0	29.26	1.65	32.56	25.96
13.0	40.0	30.10	2.19	34.48	25.72
14.0	43.0	30.98	2.23	35.44	26.53
15.0	48.0	33.01	2.22	37.46	28.57
16.0	32.0	33.52	1.57	36.66	30.39
17.0	27.0	34.91	1.46	37.83	31.98
18.0	26.0	34.96	1.57	38.11	31.81
	483				

Figure 4.26
Bi-acromial diameters of Vaalwater girls from 6.0-18.0 years

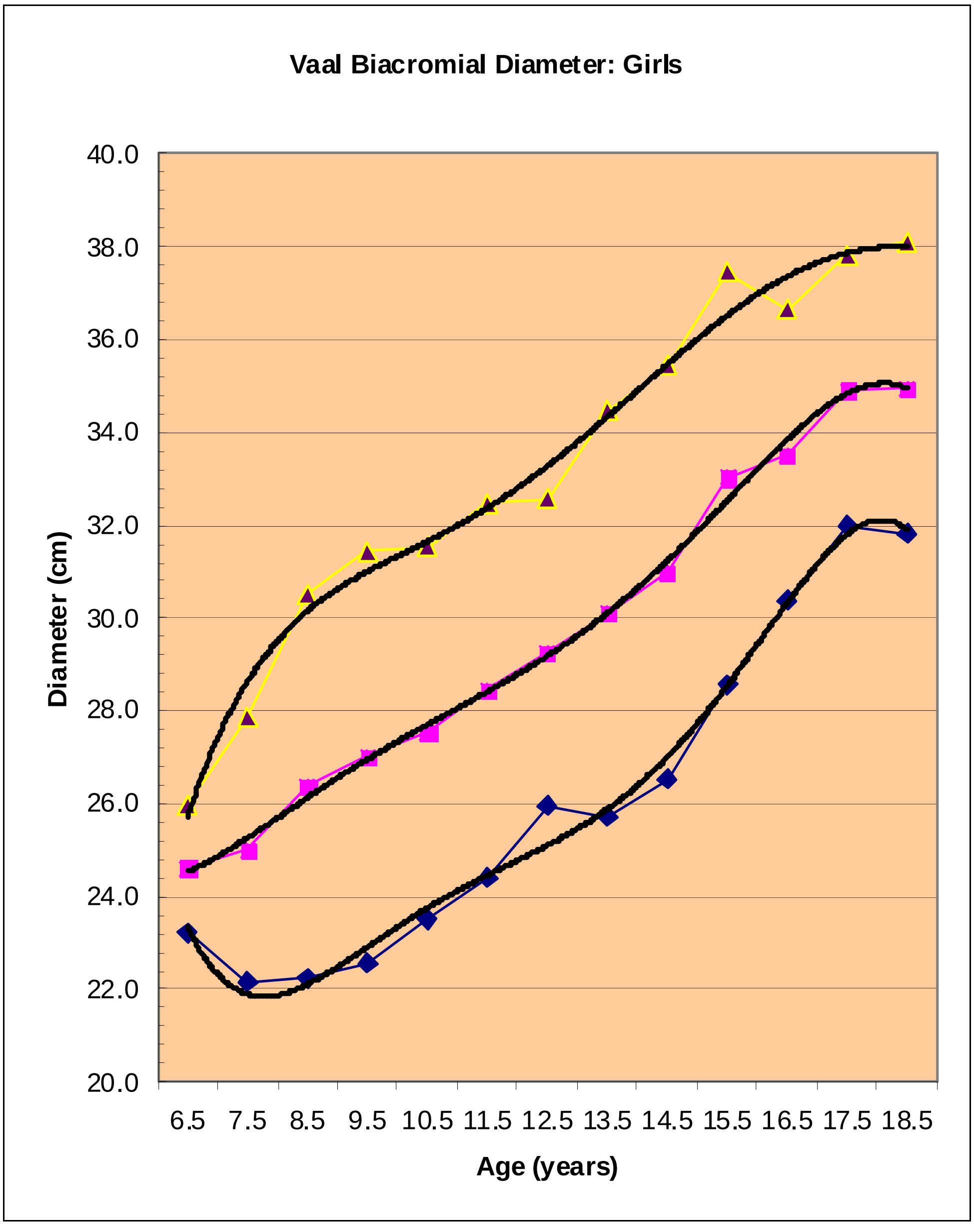


Table 4.27
Bi-iliac means diameters of Vaalwater girls from 6.0-18.0 years

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6.0	8.0	17.14	0.55	18.25	16.04
7.0	27.0	17.19	1.09	19.36	15.01
8.0	42.0	17.74	1.16	20.06	15.42
9.0	48.0	18.46	1.46	21.38	15.55
10.0	46.0	19.22	1.21	21.63	16.80
11.0	51.0	19.77	1.11	21.98	17.55
12.0	45.0	20.23	1.31	22.85	17.60
13.0	39.0	21.28	1.97	25.23	17.33
14.0	44.0	22.29	1.63	25.54	19.04
15.0	48.0	23.39	1.20	25.78	20.99
16.0	32.0	23.87	1.10	26.06	21.67
17.0	27.0	24.74	1.67	28.08	21.40
18.0	26.0	25.24	1.83	28.89	21.59
	457.0				

Figure 4.27
Bi-iliac means diameters of Vaalwater girls from 6.0 – 18.0 years

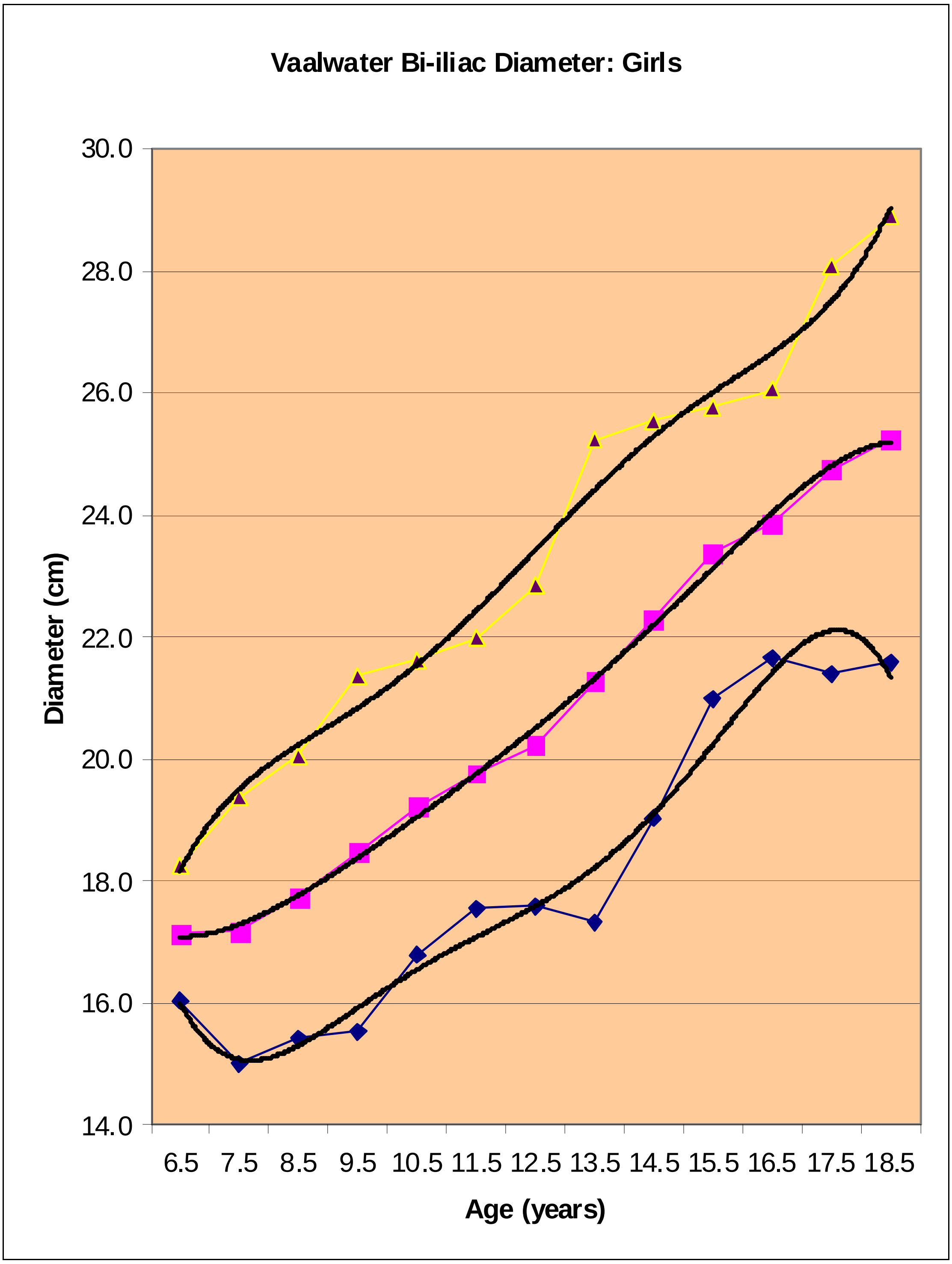


Table 4.28
Head circumference mean values of Vaalwater girls (6.0- 18.0 years)

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6.0	8.0	49.83	1.84	53.51	46.16
7.0	25.0	50.45	1.62	53.69	47.21
8.0	43.0	50.53	1.00	52.52	48.54
9.0	46.0	51.13	1.31	53.76	48.50
10.0	46.0	51.22	1.73	54.68	47.76
11.0	50.0	51.74	1.31	54.35	49.13
12.0	45.0	51.62	1.79	55.21	48.03
13.0	40.0	52.32	1.65	55.62	49.01
14.0	44.0	52.92	1.51	55.95	49.90
15.0	40.0	53.15	1.53	56.21	50.08
16.0	40.0	53.69	1.86	57.42	49.96
17.0	28.0	54.04	1.38	56.80	51.27
18.0	26.0	54.10	1.31	56.73	51.47
	481				

Figure 4.28
Graph of head circumference mean values in the Vaalwater girls

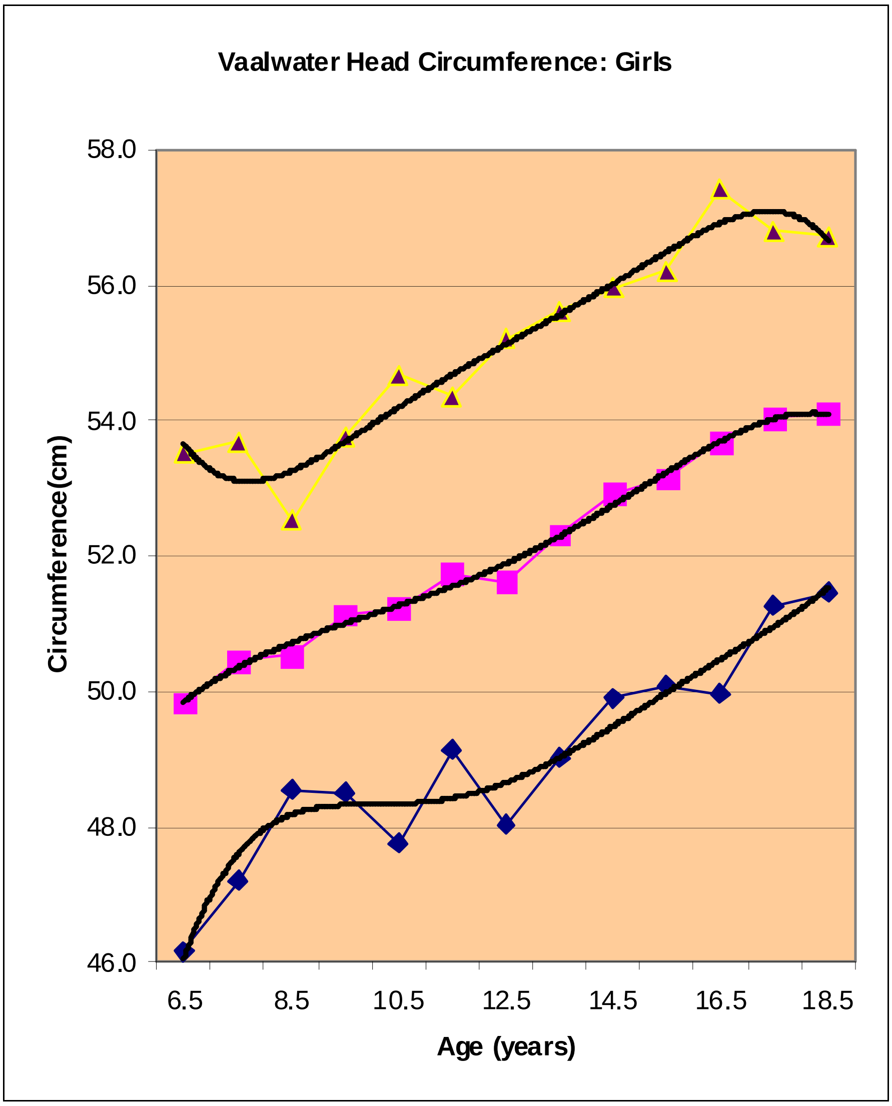


Table 4.29
Mean annual values of Relaxed Upper Arm Circumference of the Vaalwater girls from 6.0 – 18.0 years

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6.0	8.0	15.55	1.10	17.75	13.34
7.0	27.0	16.36	1.63	19.63	13.10
8.0	42.0	16.62	1.29	19.21	14.03
9.0	48.0	17.42	1.79	20.99	13.84
10.0	46.0	17.77	1.74	21.24	14.30
11.0	51.0	18.24	1.74	21.71	14.76
12.0	44.0	18.51	3.99	26.48	10.53
13.0	40.0	19.03	2.06	23.15	14.91
14.0	44.0	20.06	1.89	23.84	16.28
15.0	41.0	21.03	1.52	24.06	18.00
16.0	40.0	22.23	1.23	24.69	19.78
17.0	28.0	23.35	1.81	26.96	19.74
18.0	26.0	23.68	1.59	26.86	20.49
	485				

Figure 4.29
Relaxed Upper Arm Circumference mean values of Vaalwater girls (6.0-18.0 years)

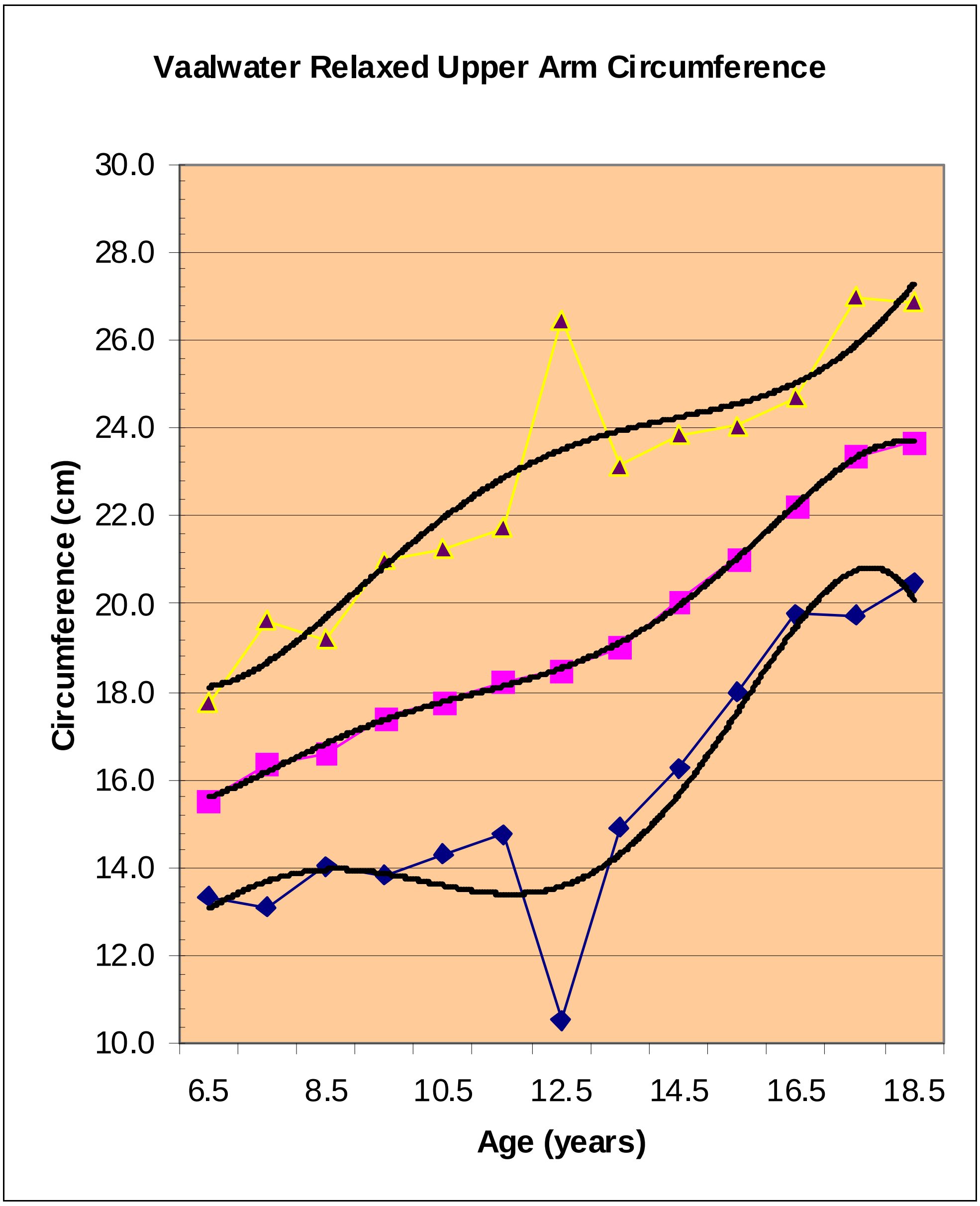


Table 4.30
Table of mean annual values taken from the Sub-scapular skinfolds measurements of Vaalwater girls between the ages 6.0-18.0 years

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6.0	8	4.24	0.30	4.83	3.64
7.0	26	4.94	0.74	6.41	3.47
8.0	40	5.32	0.84	7.00	3.64
9.0	48	5.61	1.36	8.33	2.88
10.0	46	6.16	1.73	9.62	2.71
11.0	50	6.22	1.95	10.13	2.31
12.0	43	6.13	0.94	8.00	4.25
13.0	40	6.88	1.75	10.38	3.38
14.0	44	7.94	2.02	11.98	3.89
15.0	40	8.70	2.42	13.55	3.86
16.0	40	9.93	2.87	15.66	4.20
17.0	28	11.38	2.69	16.76	5.99
18.0	26	12.62	3.42	19.45	5.78
	479				

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Figure 4.30
Mean value Sub-scapular skinfold thickness of the Vaalwater girls (6.0-18.0 years)

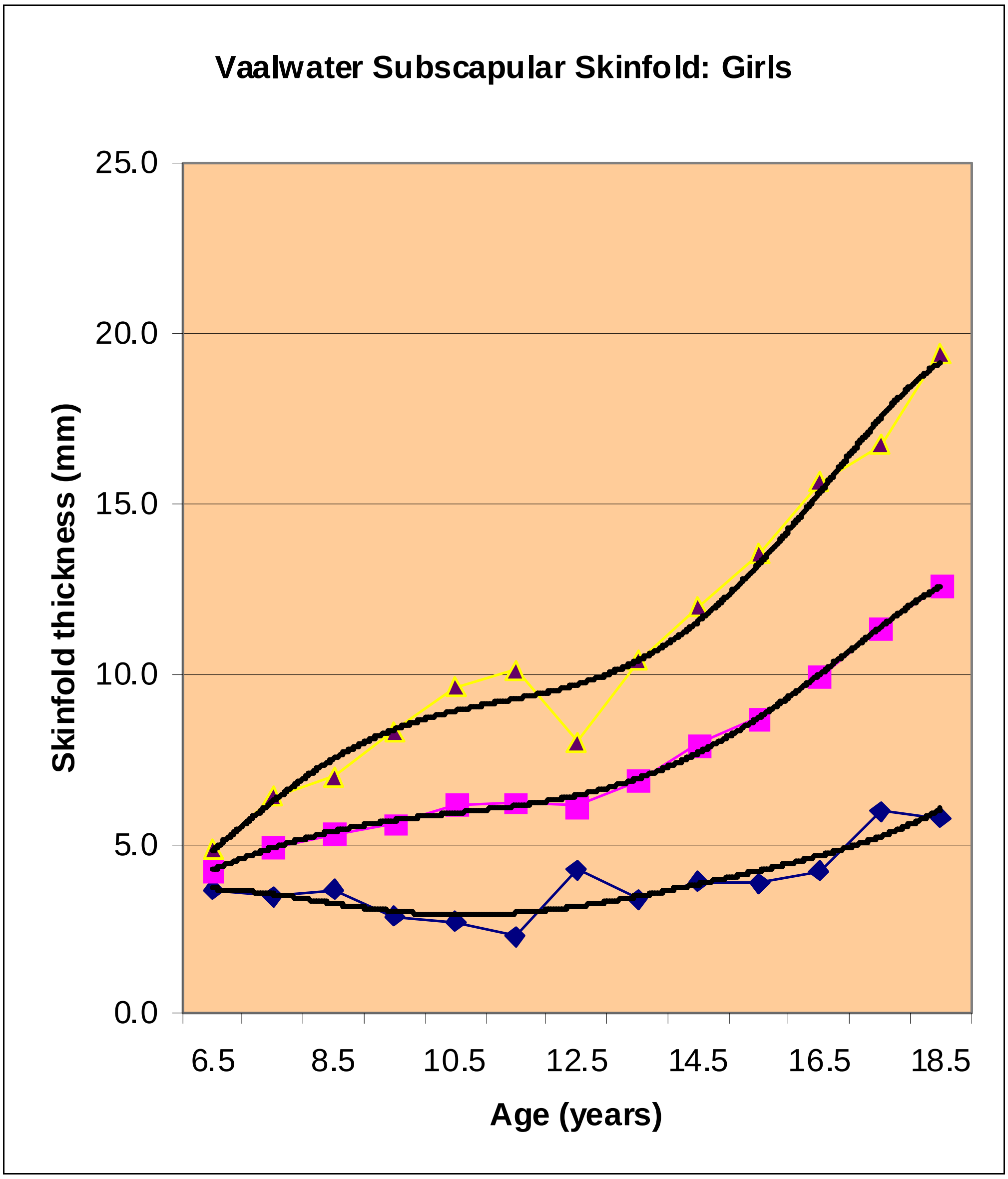

Table 4.31
Triceps skinfold mean values of Vaalwater girls from 6.0-18.0 years

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6.0	8	6.38	0.67	7.71	5.05
7.0	26	6.95	1.16	9.28	4.63
8.0	41	7.38	1.41	10.20	4.56
9.0	48	8.08	2.57	13.22	2.94
10.0	44	7.51	1.69	10.89	4.12
11.0	50	7.69	1.77	11.23	4.15
12.0	45	7.76	1.63	11.03	4.50
13.0	40	8.24	1.77	11.78	4.70
14.0	43	8.67	1.89	12.45	4.89
15.0	40	10.10	2.73	15.56	4.64
16.0	40	10.73	2.94	16.62	4.84
17.0	28	13.80	5.96	25.72	1.88
18.0	26	15.10	4.88	24.86	5.35
	479				

Figure 4.31
Figure depicting mean values of Triceps skinfolds taken from Vaalwater girls from 6.0-18.0 years. Regression lines smoothing by polynomial trend lines of the 5th order

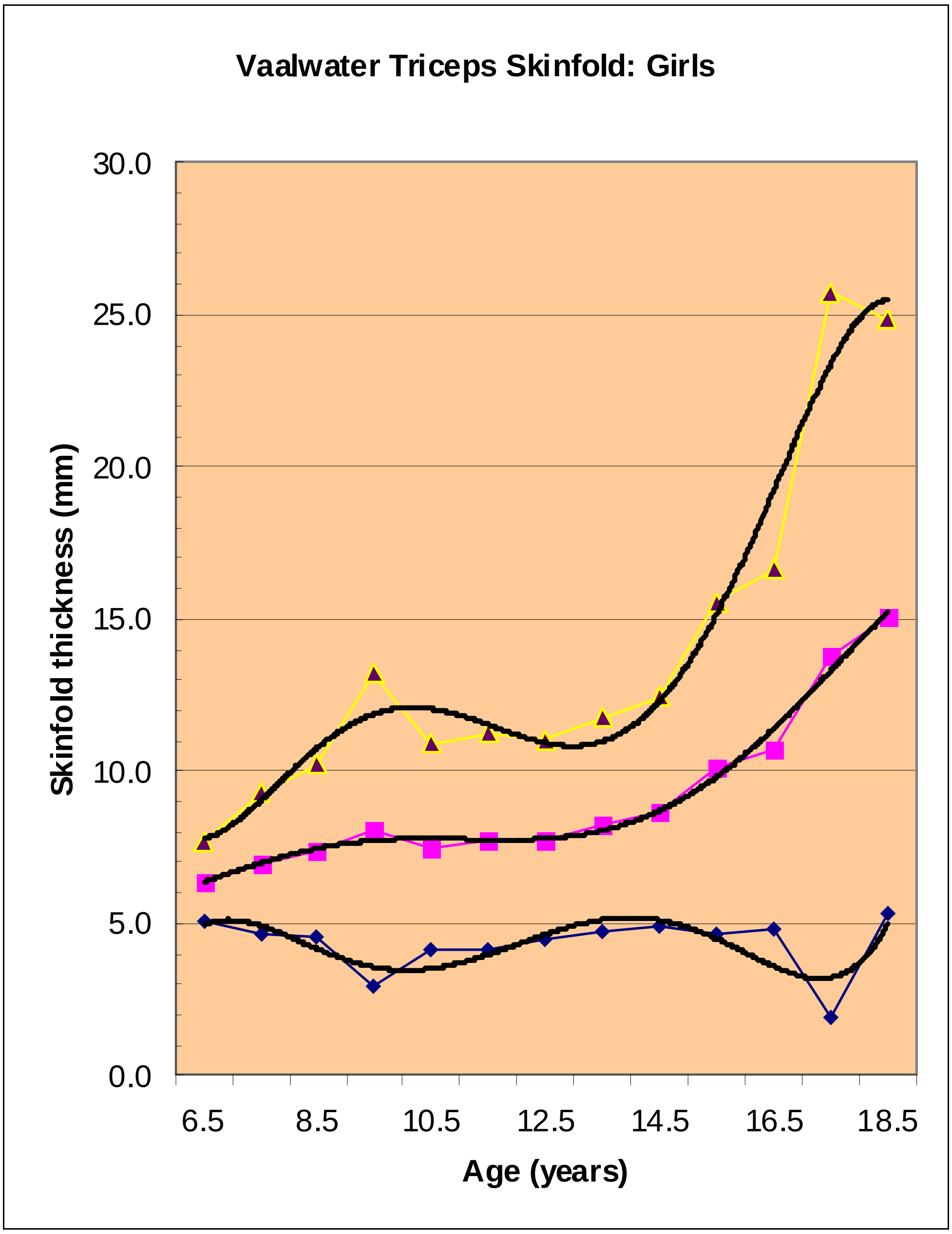

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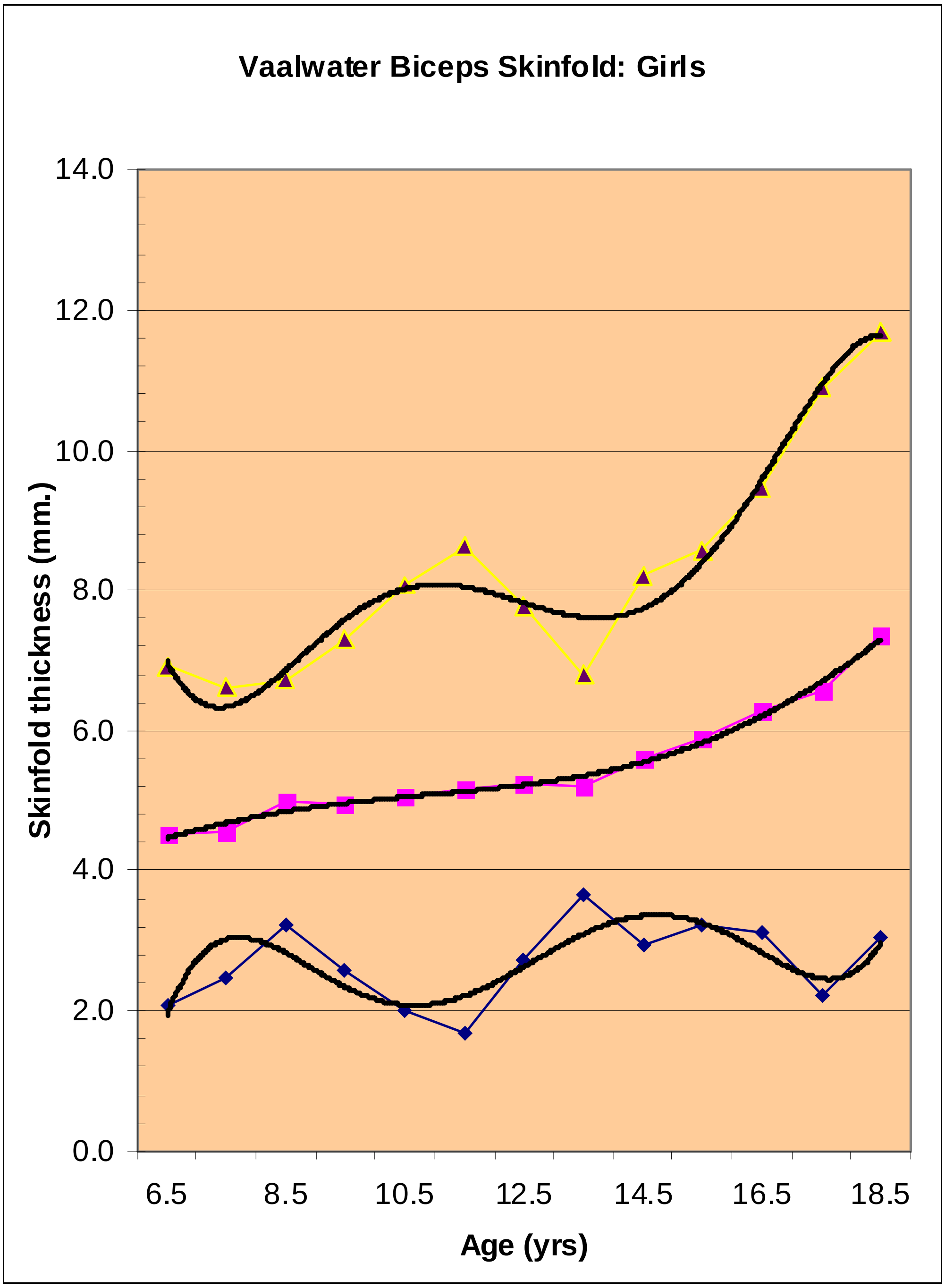
Table 4.32
Mean values of Biceps skinfold of Vaalwater girls (6.0-18.0 years)

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6.0	8	5.03	1.06	7.15	2.92
7.0	27	4.82	1.43	7.68	1.96
8.0	42	4.77	1.10	6.97	2.57
9.0	47	4.85	1.11	7.07	2.63
10.0	46	4.98	1.44	7.85	2.11
11.0	51	5.18	1.74	8.67	1.70
12.0	45	5.18	1.25	7.68	2.69
13.0	39	5.23	0.77	6.77	3.70
14.0	44	5.53	1.33	8.19	2.86
15.0	40	6.04	1.41	8.85	3.23
16.0	40	6.13	1.49	9.11	3.15
17.0	28	6.62	2.35	11.33	1.92
18.0	26	7.38	2.15	11.68	3.08
	483				

Figure 4.32
Mean annual values of the biceps skinfolds of Vaalwater girls (6.0 -18.0 years)

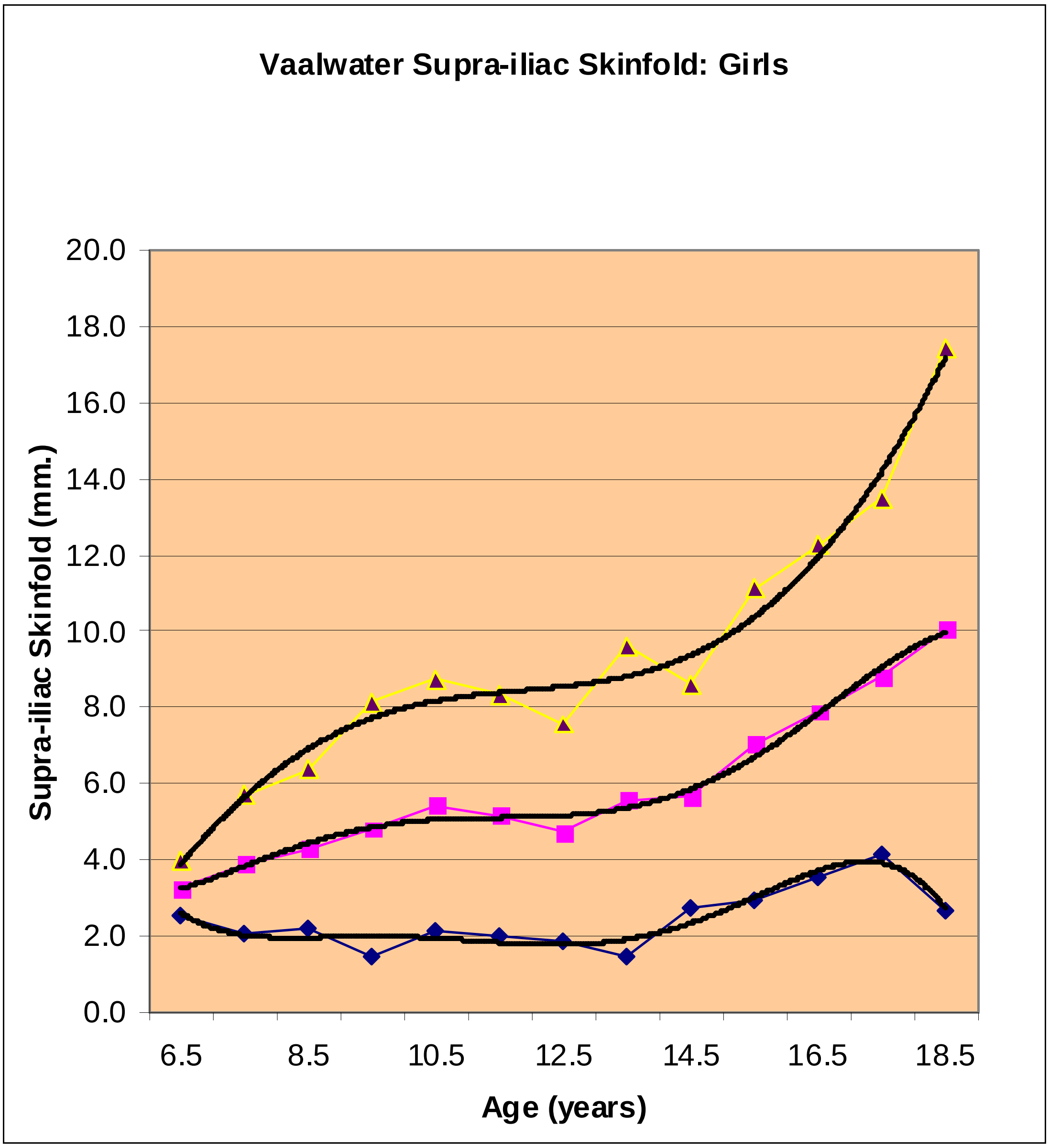


Regression lines smoothing by polynomial trend lines of the 5th order.

Table 4.33
Supra-iliac skinfold means values of the Vaalwater girls from 6.0-18.0 years old

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6.0	8	3.25	0.35	3.95	2.55
7.0	26	3.87	0.91	5.69	2.05
8.0	41	4.27	1.04	6.35	2.19
9.0	47	4.80	1.66	8.13	1.47
10.0	45	5.41	1.66	8.73	2.10
11.0	50	5.15	1.59	8.32	1.98
12.0	45	4.71	1.42	7.55	1.88
13.0	39	5.54	2.03	9.61	1.48
14.0	42	5.66	1.47	8.60	2.72
15.0	40	7.02	2.05	11.13	2.92
16.0	40	7.88	2.19	12.26	3.51
17.0	28	8.81	2.34	13.49	4.13
18.0	26	10.05	3.71	17.47	2.64
	477				

Figure 4.33
This figure depicts the Supra-iliac Skinfold mean values from Vaalwater girls between 6.0-18.0 years



Regression lines smoothing by polynomial trend lines of the 5th order.

4.6 Vaalwater : Boy

Table 4.34
Mean values of the Height of Vaalwater boys from 6.0-18.0 years. Blue colour was used for all boys' graphs

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	6	118.43	15.39	149.21	87.65
7	27	115.70	5.95	127.61	103.79
8	34	120.17	5.68	131.54	108.81
9	38	124.80	6.41	137.63	111.97
10	51	131.20	5.35	141.90	120.50
11	47	137.16	4.42	146.00	128.32
12	46	140.40	5.21	150.82	129.97
13	39	142.17	6.71	155.59	128.75
14	40	148.52	5.48	159.47	137.57
15	34	151.91	6.73	165.36	138.46
16	37	156.10	5.53	167.16	145.03
17	24	160.21	4.47	169.16	151.26
18	23	166.77	5.68	178.14	155.41
	446				

Figure 4.34
This figure depicts Height measurements of Vaalwater Boys (6.0-18.0 years)

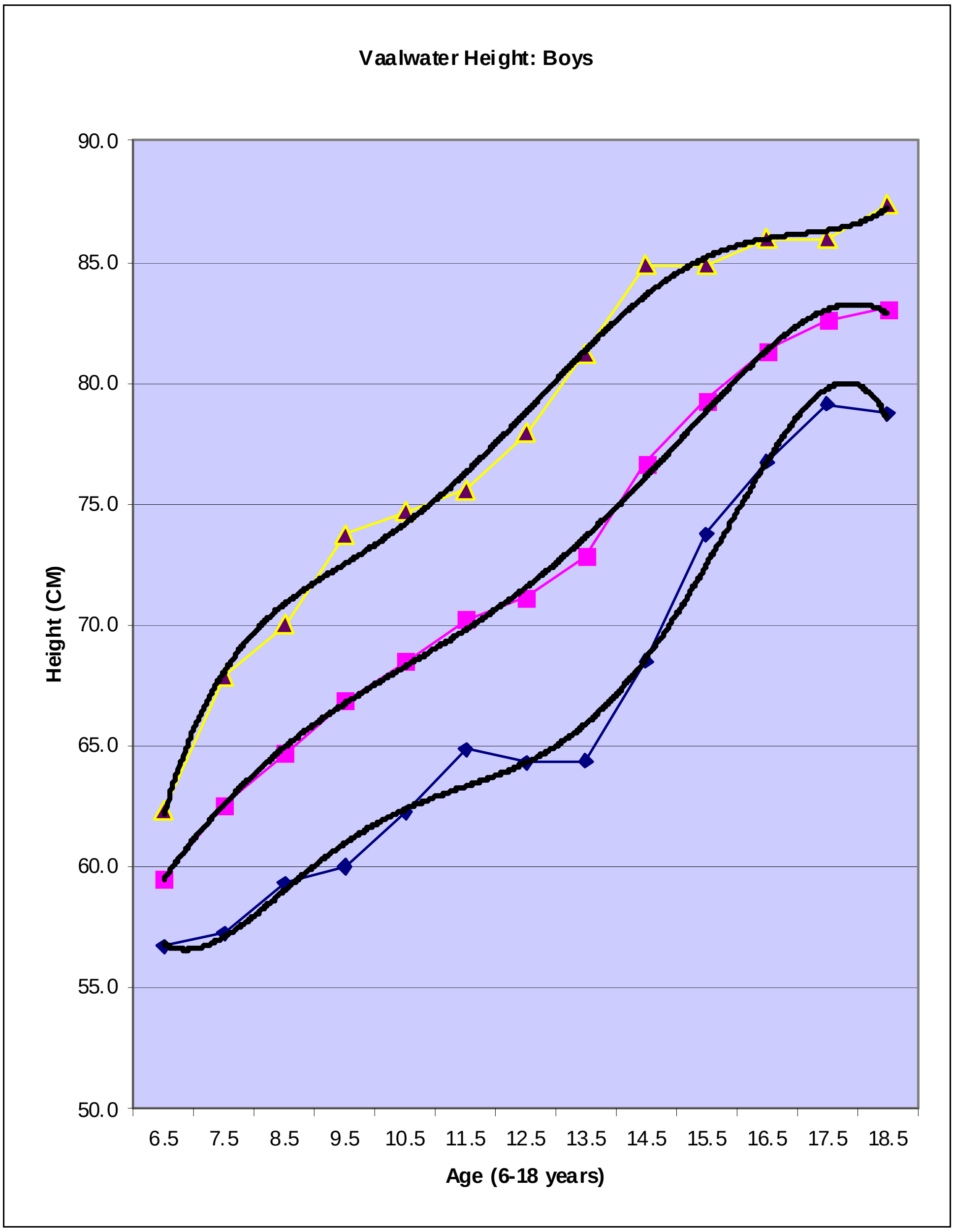


Table 4.35
Weight measurements of Vaalwater Boys (6.0 and 18.0 years)

Age	N	Mean (M)	SD	(M+2SD)	(M-2SD)
6	7	19.90	5.94	31.79	8.01
7	27	19.84	2.19	24.23	15.46
8	37	21.16	2.46	26.07	16.25
9	39	24.39	4.77	33.93	14.84
10	61	26.23	3.61	33.45	19.02
11	49	31.25	3.69	38.63	23.88
12	48	29.71	5.06	39.83	19.60
13	37	32.49	5.54	43.57	21.42
14	36	34.44	4.94	44.32	24.56
15	41	39.23	5.51	50.24	28.22
16	35	44.22	6.30	56.81	31.62
17	22	48.06	5.53	59.12	37.00
18	25	54.01	5.81	65.62	42.40
	464				

Figure 4.35
Weight mean values of Vaalwater Boys (6.0 – 18.0 years)

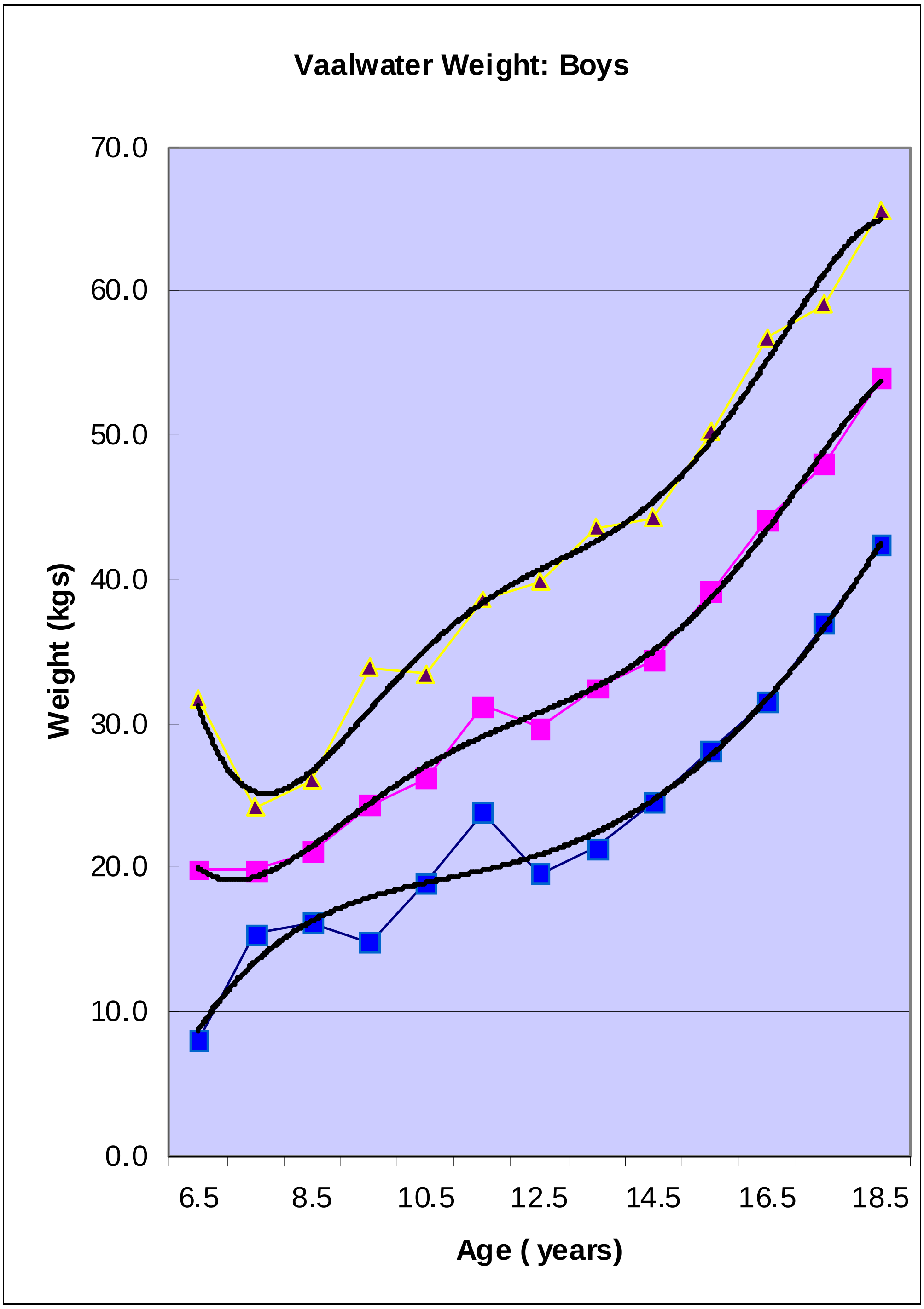


Table 4.36
Sitting Height mean values of Vaalwater boys (6.0 – 18.0 years)

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	6	63.71	6.79	77.30	50.12
7	27	62.74	2.06	66.86	58.62
8	38	61.19	2.52	66.23	56.15
9	41	67.09	3.43	73.96	60.23
10	59	68.33	2.16	72.66	64.01
11	38	70.25	2.19	74.62	65.87
12	45	70.89	3.52	77.93	63.85
13	37	73.02	2.97	78.95	67.09
14	35	74.79	3.23	81.25	68.33
15	51	77.81	3.53	84.88	70.74
16	30	78.64	2.45	83.54	73.74
17	26	80.81	2.21	85.22	76.39
18	22	84.54	2.69	89.93	79.15
	455				

Figure 4.36
Vaalwater Sitting Height values for Boys (6.0 – 18.0 years)

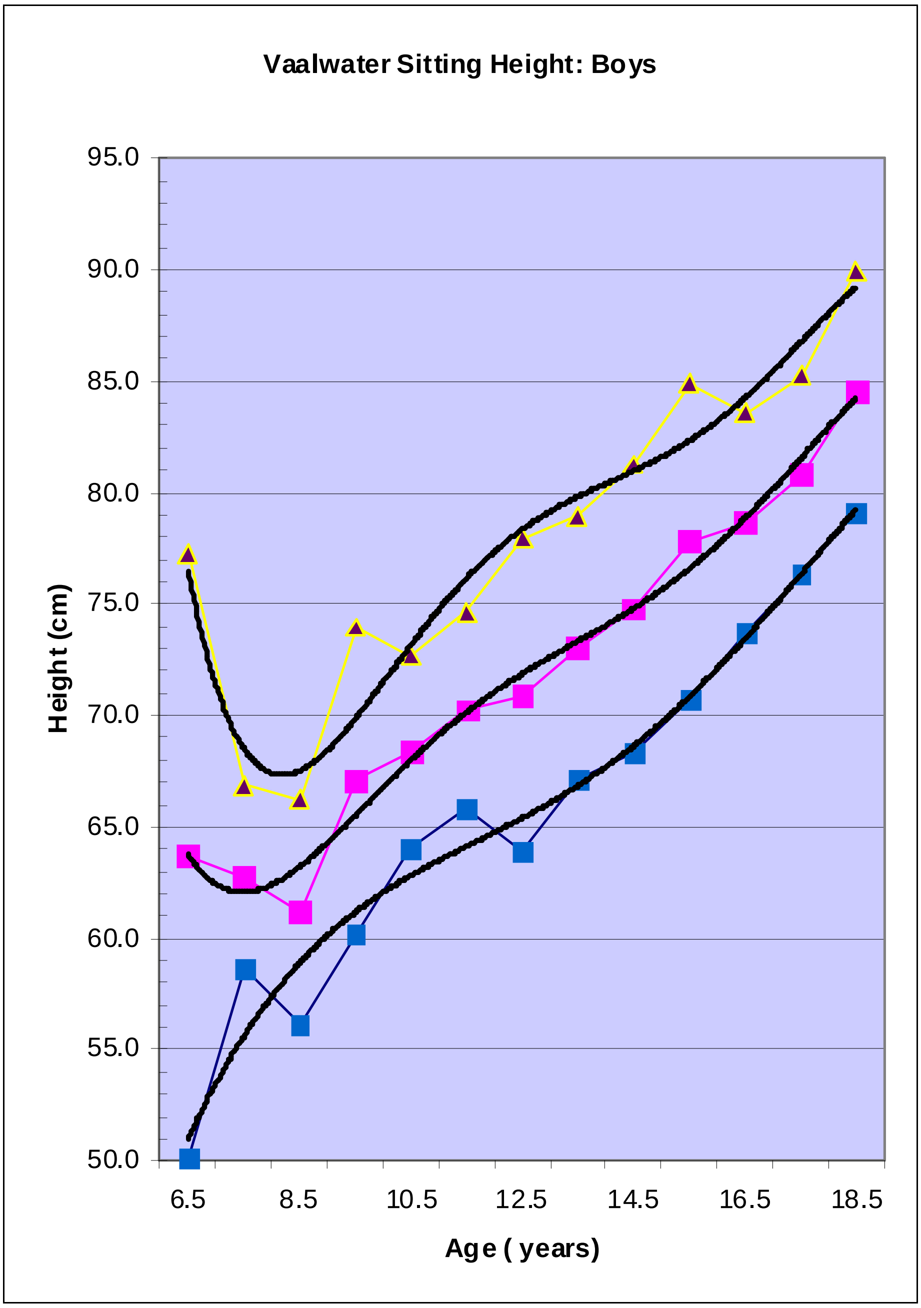


Table 4.37
Bi-acromial means values of Vaalwater Boys (6.0 – 18.0 years)

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	6	24.64	2.58	29.80	19.49
7	27	24.67	1.34	27.34	22.00
8	33	25.52	1.30	28.13	22.92
9	40	26.42	1.32	29.07	23.78
10	50	27.92	1.36	30.64	25.20
11	39	28.49	1.43	31.35	25.62
12	43	28.93	1.78	32.49	25.38
13	37	29.80	1.84	33.48	26.13
14	38	31.12	1.58	34.28	27.96
15	42	32.46	2.10	36.65	28.26
16	32	33.12	1.52	36.17	30.08
17	22	35.14	1.85	38.83	31.45
18	20	35.74	2.93	41.59	29.88
	429				

Figure 4.37
Bi-acromial diameter means values of Vaalwater Boys (6.0 – 18.0 years)

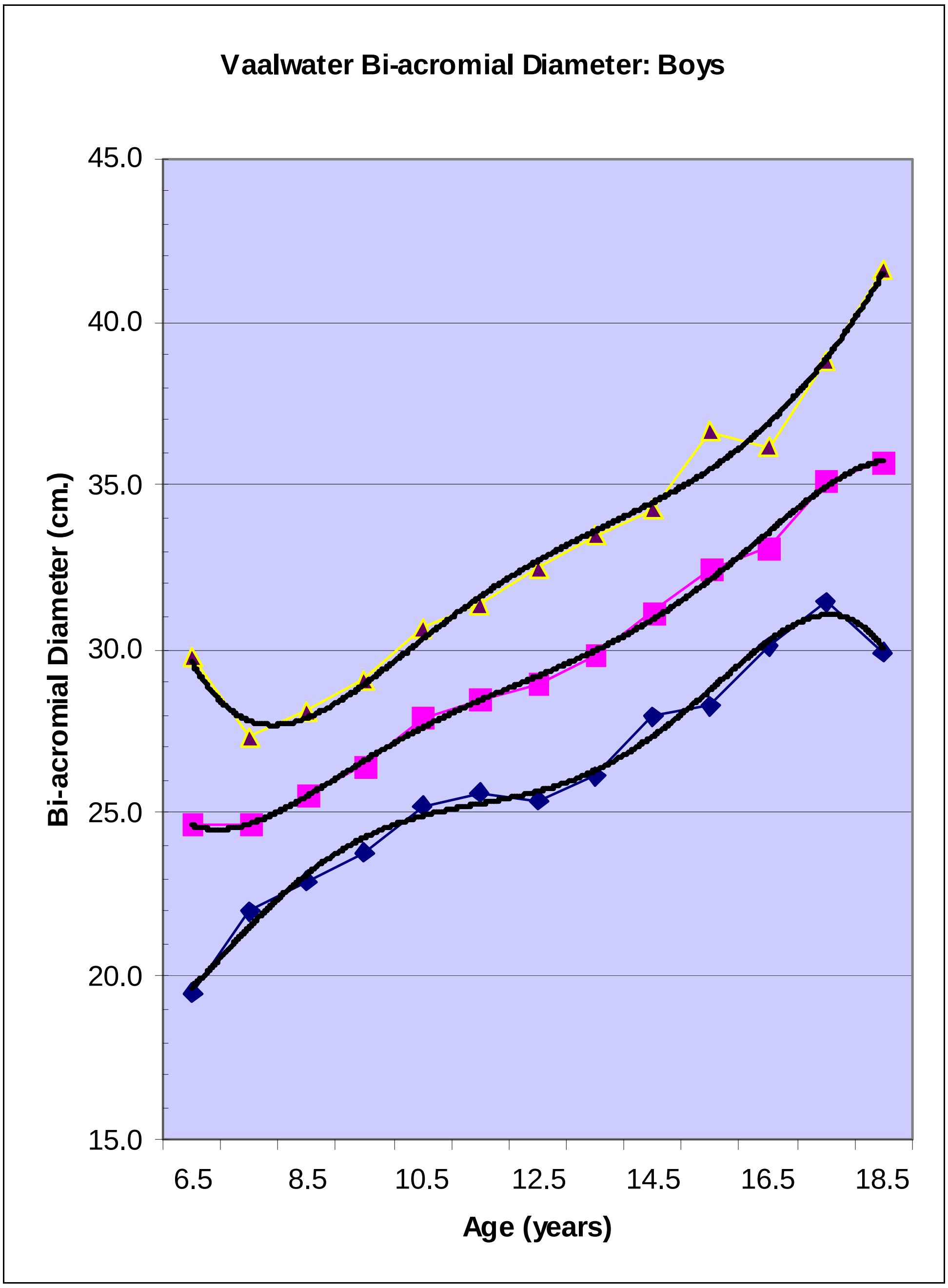


Table 4.38
Bi-iliac Diameter means values of Vaalwater Boys (6.0 – 18.0 years)

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	8	17.24	0.68	18.61	15.88
7	27	17.10	1.04	19.18	15.01
8	33	17.54	0.87	19.29	15.80
9	40	18.08	1.19	20.45	15.71
10	50	19.03	0.78	20.59	17.47
11	39	19.36	1.25	21.85	16.87
12	43	19.85	1.06	21.97	17.72
13	37	20.48	0.64	21.76	19.20
14	39	21.21	0.91	23.03	19.39
15	41	22.05	1.15	24.36	19.75
16	32	22.78	1.25	25.27	20.29
17	23	23.56	1.21	25.98	21.14
18	19	25.82	2.30	30.42	21.23
	431				

Figure 4.38
Graphical representation of bi-iliac mean diameter values for age of Vaalwater boys from 6.0-18.0 years

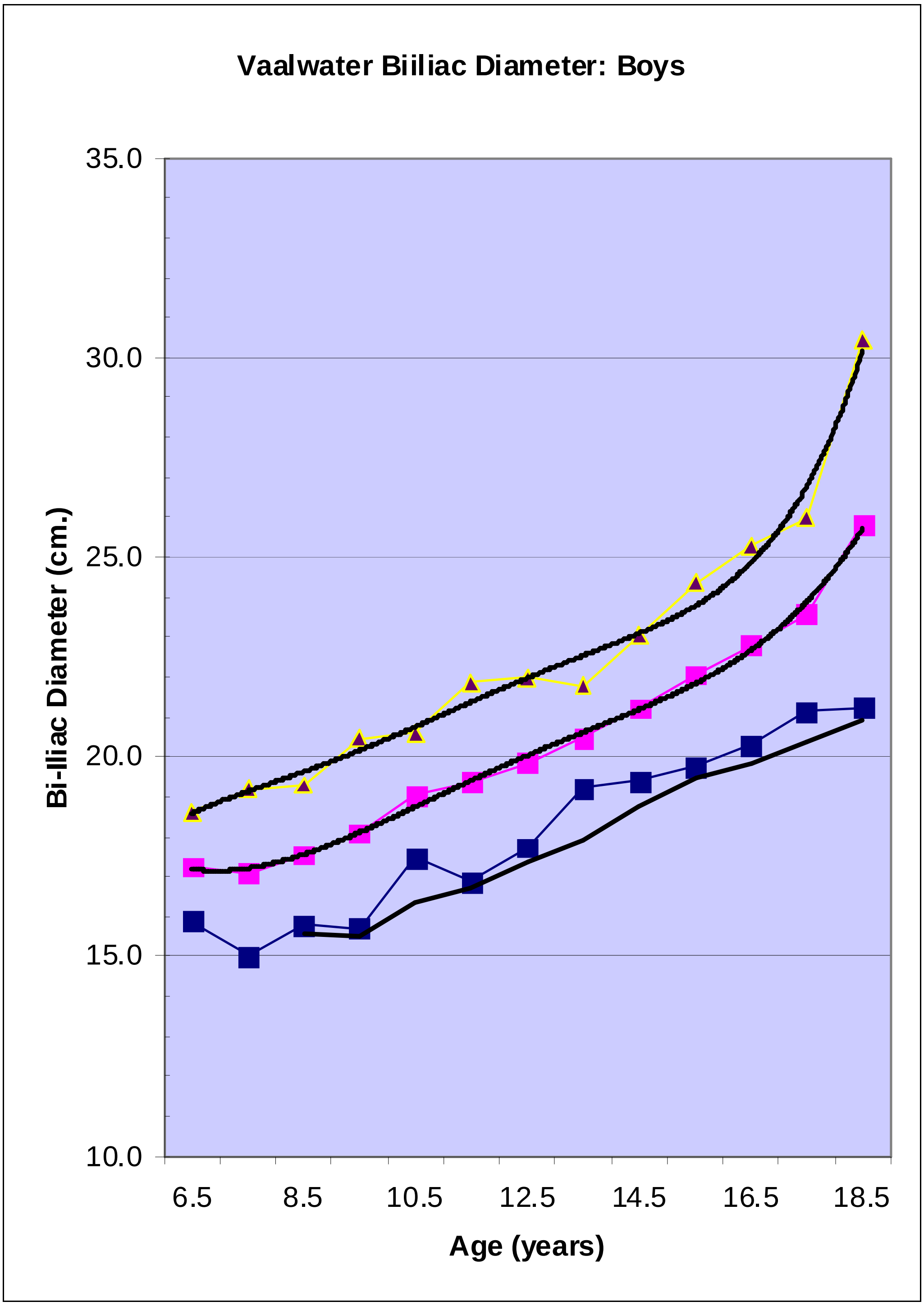


Table 4.39
Mean annual values of Head circumferences of Vaalwater Boys (6.0-18.0 years)

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	7	51.03	0.75	52.53	49.53
7	26	51.71	1.33	54.37	49.05
8	37	51.51	1.28	54.07	48.95
9	41	51.46	1.48	54.43	48.49
10	59	52.06	1.44	54.94	49.18
11	37	52.29	1.25	54.79	49.79
12	46	52.68	1.57	55.81	49.55
13	36	53.03	1.10	55.23	50.83
14	34	53.58	1.40	56.37	50.79
15	51	53.80	1.65	57.11	50.49
16	29	54.04	1.22	56.48	51.60
17	26	54.59	1.17	56.93	52.25
18	22	55.14	1.81	58.76	51.53
	451				

Figure 4.39
Graph of Head circumference mean values of Vaalwater boys from 6.0-18.0 years

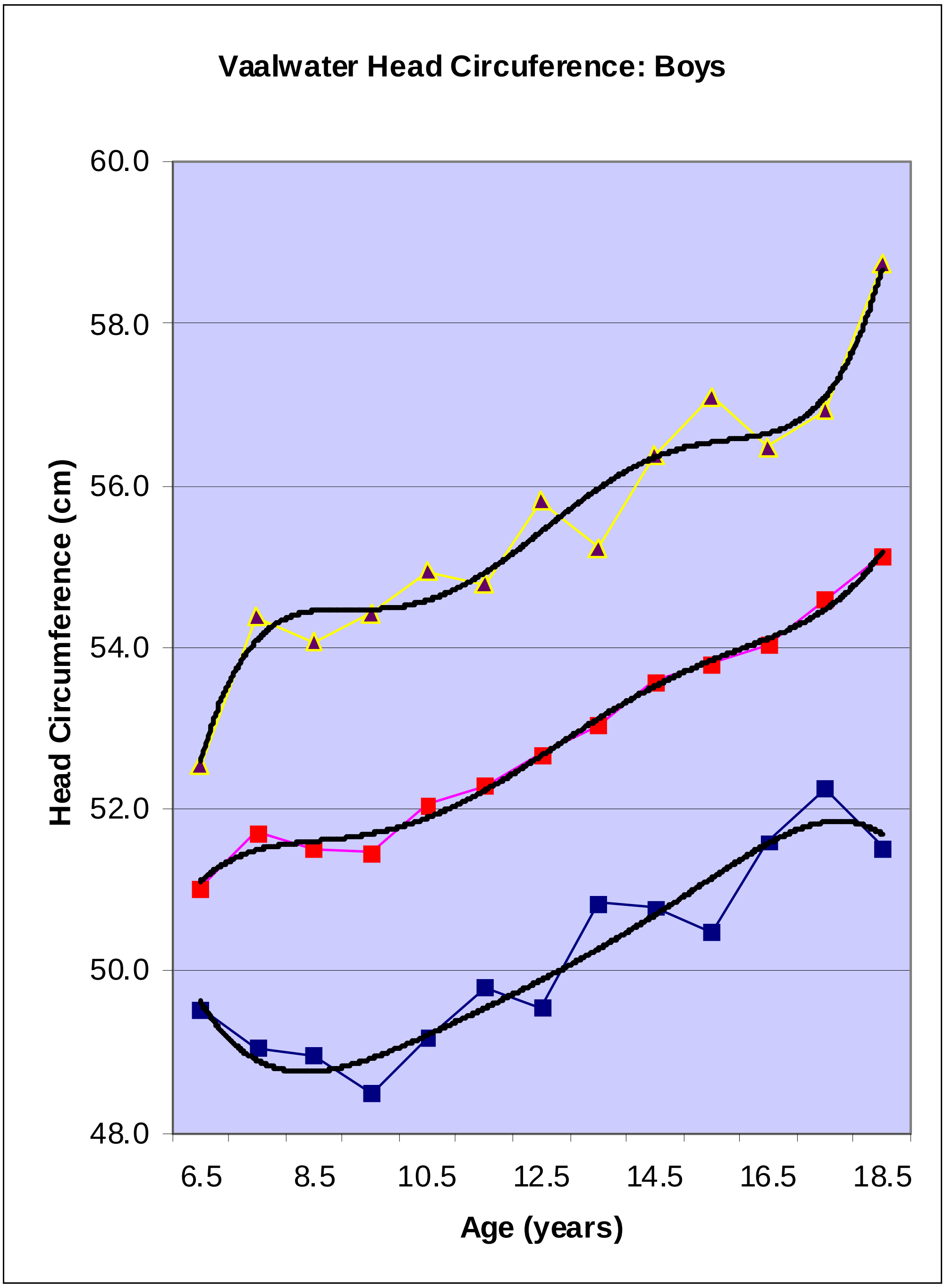


Table 4.40
Relaxed Upper Arm Circumference mean values of Vaalwater Boys
(6.0 – 18.0 years)

Age	N	Mean (M)	SD	(M+2SD)	(M-2SD)
6	7	15.98	1.99	19.96	11.99
7	27	15.96	0.96	17.88	14.04
8	36	16.00	1.10	18.20	13.80
9	36	16.70	1.49	19.68	13.73
10	58	17.22	1.08	19.38	15.06
11	39	17.68	1.37	20.42	14.93
12	46	17.85	1.35	20.55	15.14
13	37	18.47	1.39	21.24	15.70
14	34	18.70	1.46	21.62	15.78
15	51	20.04	1.34	22.72	17.36
16	30	21.03	1.24	23.50	18.55
17	26	22.59	2.03	26.64	18.54
18	22	55.14	1.20	57.55	52.73
	449				

Figure 4.40
Graphical representation of Relaxed Upper Arm Circumference of Vaalwater boys 6– 18 years

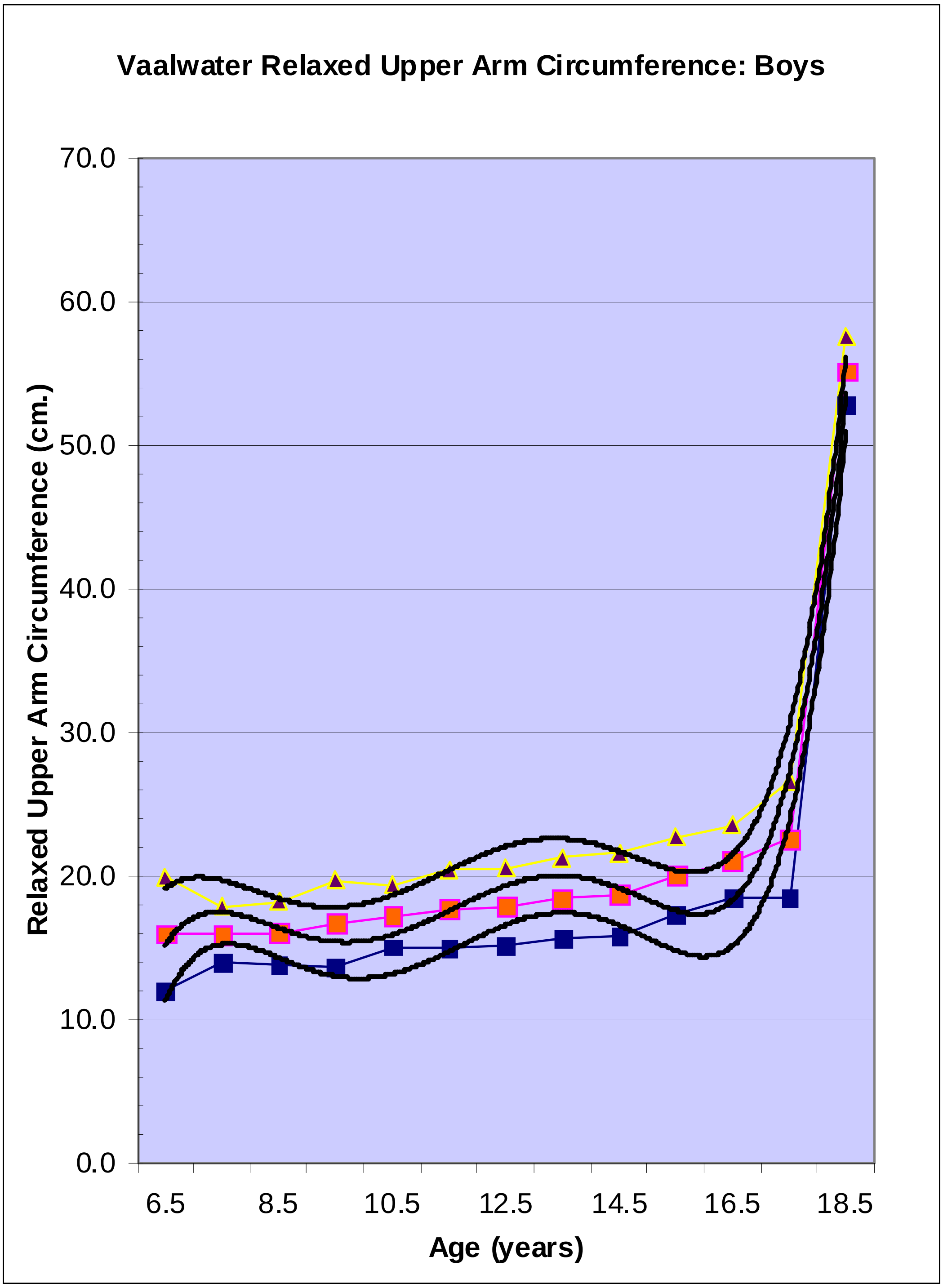
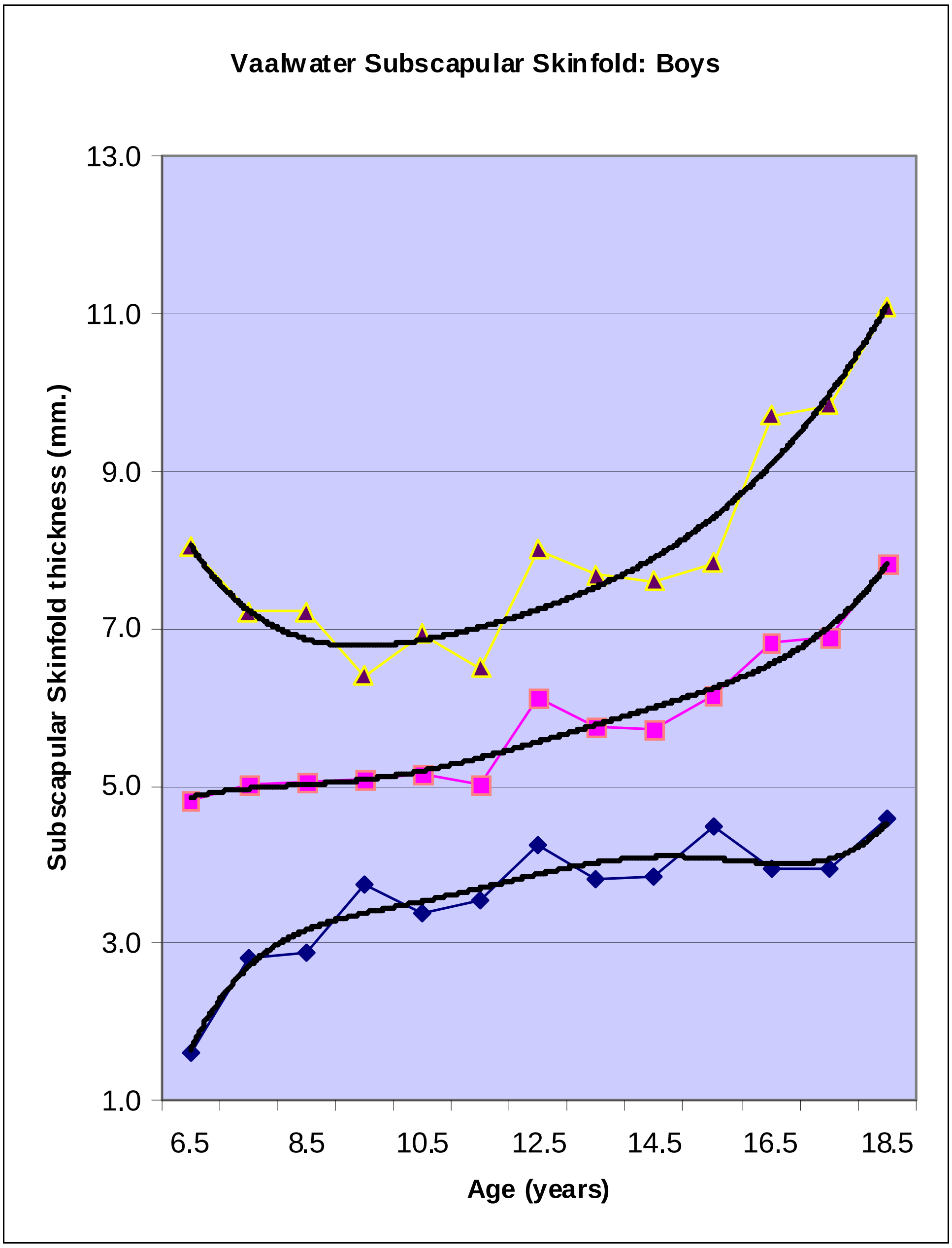


Table 4.41

Sub-scapular skinfold means values of Vaalwater Boys (6.0-18.0 years)

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	6	4.83	1.60	8.03	1.63
7	27	5.01	1.10	7.22	2.80
8	34	5.04	1.08	7.21	2.88
9	37	5.08	0.66	6.40	3.76
10	48	5.16	0.89	6.94	3.37
11	39	5.02	0.74	6.50	3.55
12	43	6.13	0.94	8.00	4.25
13	38	5.75	0.97	7.69	3.81
14	38	5.72	0.94	7.60	3.83
15	41	6.16	0.84	7.84	4.48
16	32	6.83	1.44	9.70	3.95
17	27	6.90	1.47	9.83	3.97
18	20	7.82	1.62	11.07	4.58
	430				

Figure 4.41
Sub-scapular skinfold means values of Vaalwater boys (6.0 – 18.0 years)



Regression lines smoothing by polynomial trend lines of the 5th order.

Table 4.42
Mean values of Triceps skinfolds of Vaalwater boys (6.0 – 18.0 years)

Age	N	Mean (M)	SD	(M+2SD)	(M-2SD)
6	6	6.49	2.09	10.67	2.31
7	26	6.54	1.29	9.12	3.96
8	34	6.45	1.28	9.00	3.90
9	38	6.33	1.36	9.04	3.61
10	49	6.38	1.66	9.69	3.06
11	39	6.09	1.41	8.91	3.27
12	45	7.76	1.63	11.03	4.50
13	40	6.49	1.63	9.74	3.24
14	39	7.05	2.05	11.14	2.95
15	41	6.95	1.03	9.02	4.89
16	32	7.37	1.96	11.30	3.45
17	27	6.36	1.64	9.64	3.09
18	20	6.78	1.55	9.89	3.68
	436				

Figure 4.42
Mean values of Triceps Skinfolds thickness of Vaalwater boys. Regression lines smoothing by polynomial trend lines of the 5th order

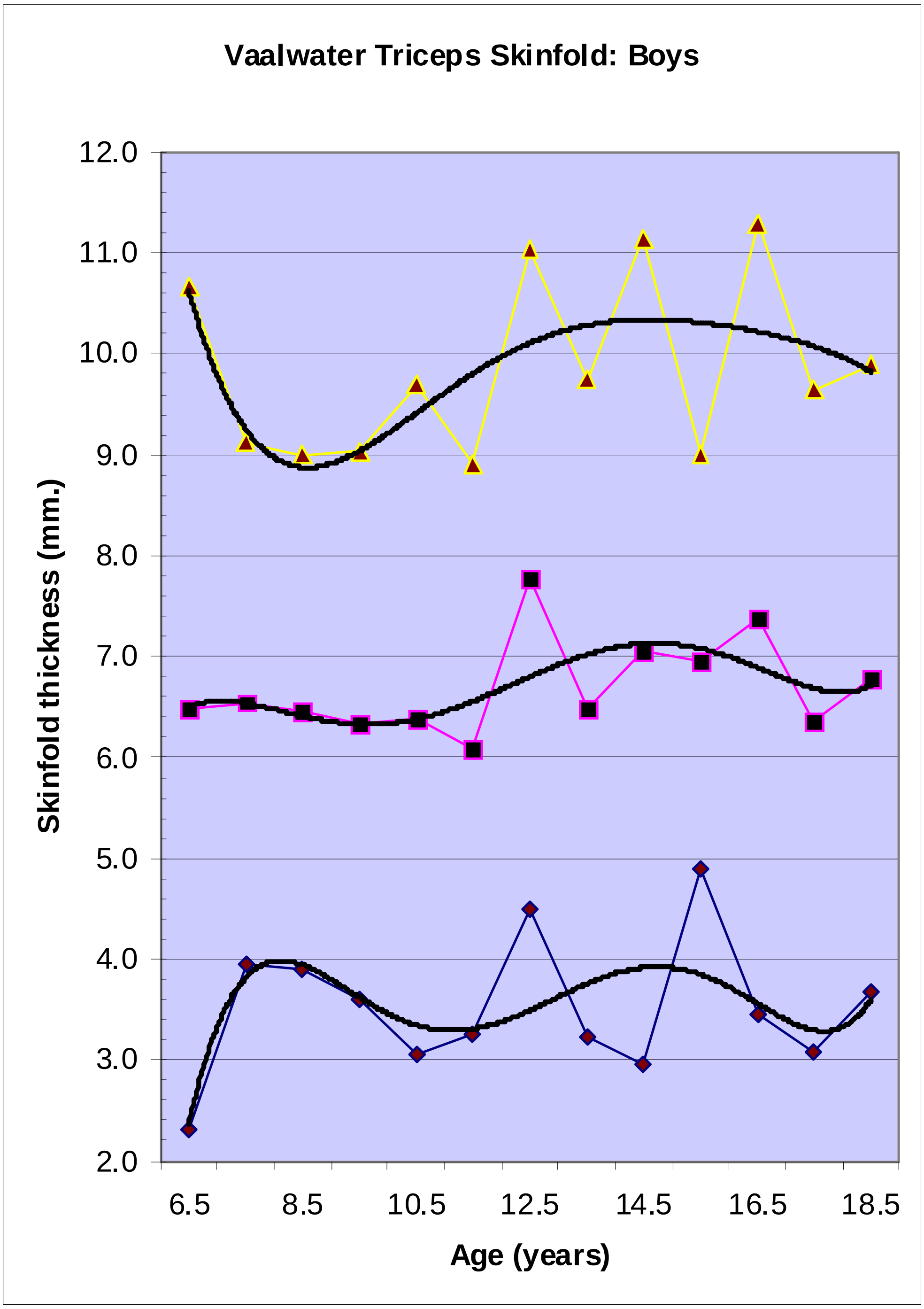


Table 4.43
Biceps skinfolds mean values of Vaalwater boys (6.0-18.0 years)

Age	N	Mean (M)	SD	(M+2SD)	(M-2SD)
6	6	4.07	0.51	5.09	3.04
7	27	4.51	1.11	6.73	2.29
8	33	4.29	0.75	5.79	2.78
9	36	4.03	0.91	5.85	2.21
10	52	4.32	1.01	6.33	2.31
11	48	4.59	1.04	6.66	2.51
12	46	4.64	0.98	6.60	2.69
13	36	4.53	1.13	6.79	2.27
14	39	5.05	0.77	6.58	3.51
15	34	4.63	1.05	6.73	2.54
16	36	5.03	1.17	7.37	2.68
17	24	4.35	1.01	6.36	2.34
18	23	6.48	1.58	9.64	3.32
	440				

Figure 4.43
Biceps skinfold mean values of Vaalwater Boys. Regression lines smoothing by polynomial trend lines of the 5th order

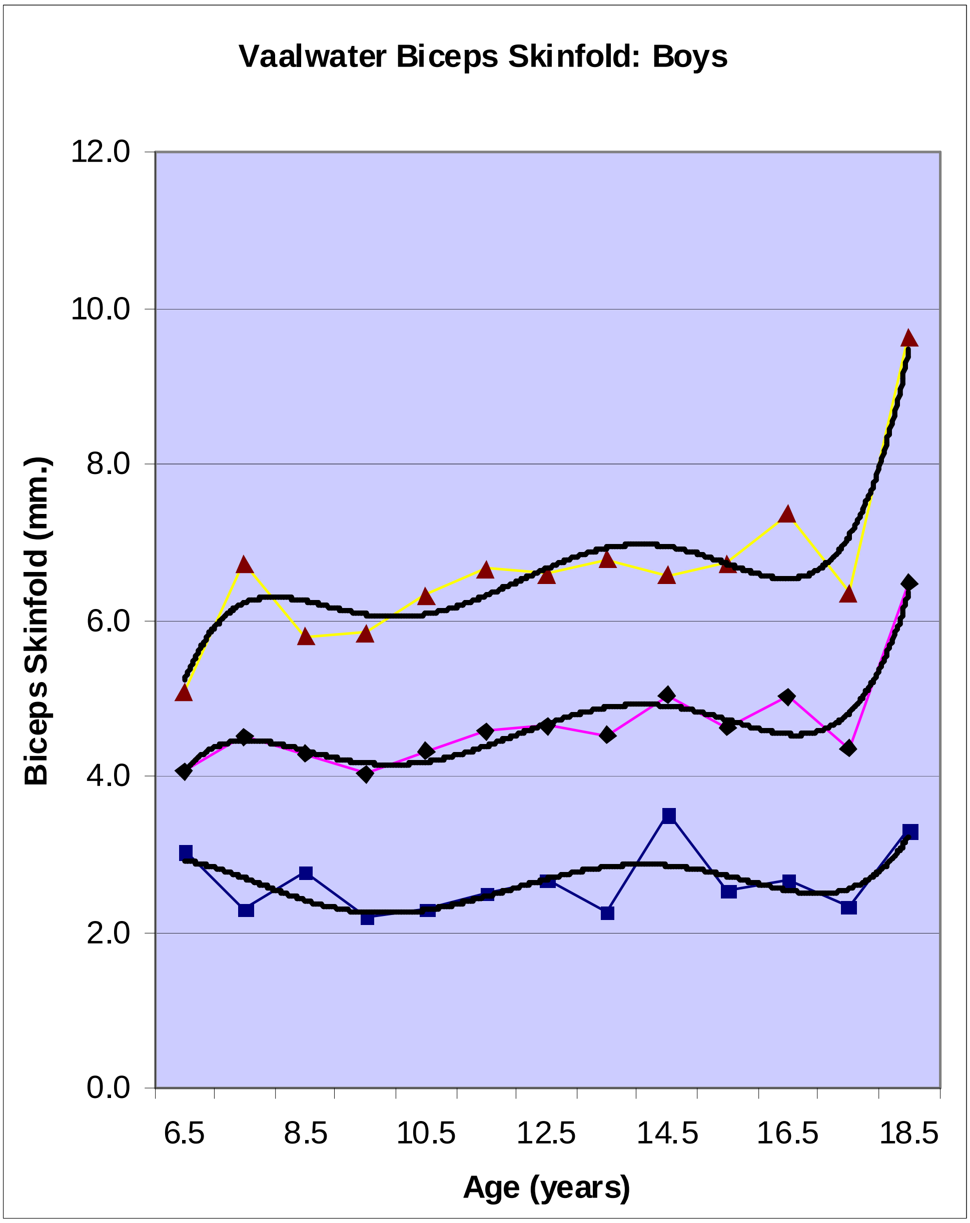
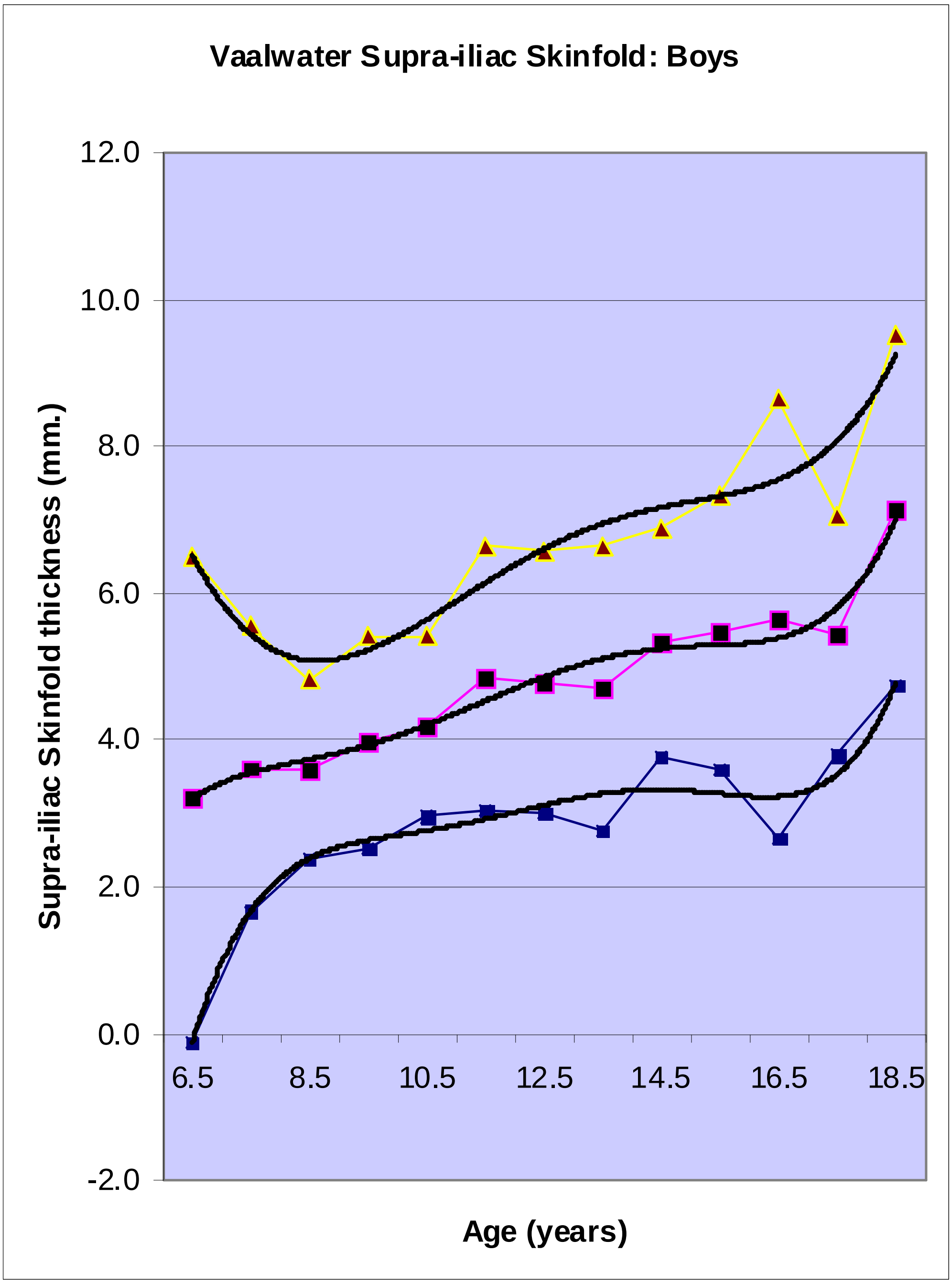


Table 4.44

Supra-iliac skinfold means values of Vaalwater boys (6.0-18.0 years)

Age	N	Mean(M)	SD	(M+2SD)	(M-2SD)
6	6	3.20	1.66	6.51	-0.11
7	27	3.61	0.97	5.56	1.67
8	32	3.60	0.61	4.82	2.39
9	37	3.96	0.72	5.41	2.52
10	50	4.18	0.61	5.41	2.95
11	48	4.85	0.90	6.65	3.04
12	46	4.79	0.89	6.57	3.01
13	39	4.70	0.97	6.64	2.77
14	40	5.33	0.78	6.88	3.77
15	34	5.47	0.93	7.34	3.60
16	37	5.66	1.50	8.65	2.66
17	24	5.43	0.82	7.06	3.79
18	23	7.14	1.20	9.53	4.75
	437				

Figure 4.44
Supra-iliac skinfold means values of Vaalwater boys (6.0- 18.0 years)



Regression lines smoothing by polynomial trend lines of the 5th order.

4.7 Kgamphe (KGA) Data

Kgamphe, the author of this thesis, went back to Vaalwater to take more measurements. These measurements were taken 10 (ten) years after the original Kgamphe-Cameron (VAL) data detailed above.

4.7.1 Introduction

In order to follow up on possible secular trends and possible short- term health changes due to the new political dispensation in South Africa, the author revisited the Vaalwater area to take select measurements from the 8.0 – 13.0 year old boys and girls. This was aimed at following up on possible secular trends or improvements in the growth and development of these children at an individual level.

The selected age groups were the critical ages of puberty in Vaalwater. The following indicators were measured:

4.7.2 Heights (KGA)

Height measurements denotes chronic impact by the environment on growth and development of children

4.7.3 Weights (KGA)

Weights are used to monitor short term impact on growth and development of children

4.7.4 Head Circumferences (KGA)

Head circumference measurements are used as tools for the assessment of brain size

4.7.5 Relaxed Upper Arm Circumference (KGA)

Relaxed upper arm circumference measurements are useful indicators for malnutrition in children. KGA data was subsequently not analysed further due to small sample sizes per age groups for both boys and girl’s individual comparison to the VAL data and WHO Reference, 2007 was however discussed on the concluding chapter

4.8 Conclusion

The age groups were plotted such that the 7.5 year olds include children between ages 7.0 and 7.99 and these were compared to the same age groups of the NCHS. The WHO reference used individual child data to generate the WFA, HFA z-score and perntile statistics.

The final distance data as plotted represent the means and ± 2 SD or ±3SD for each of the eleven variables per age and sex. All the distance curves were smoothed by polynomial trend lines of the 5th order.

Table 4.4 indicated some of the measurement errors that may have occurred e.g in table 4.4, and Table 4.5 where excessive biiliac diameters were observed. On revisiting the raw data it was noticed that some number transpositions were missed e.g Figure 4.40 where the 17.5 year olds showed some discrepancies.

Apart from measurement errors in any growth study, there exists significant variability within and between populations. Birth weights for example vary widely and systematically and even so on worldwide basis. The generation of distance charts for both UB and VAL, will highlight the measurement range for all the variables taken from this particular universe as compared to any other population. One may even identify population factors which may reflect both hereditary and ecological mechanisms.

(Johnston, 1978) reported that the amount of within sample variation that can also occur at birth is impressive. In order to demonstrate this fact he presented the Coefficients of Variation for weight and length at selected ages from the mixed longitudinal data of the Denver Child Research Council (Hansman, 1970). The relative variability at birth is similar to that seen at 5, 10 and 15 years.

In this thesis we wanted to compare relative variability at all ages studied for all the eleven variables measured. The computed Coefficient of Variations for all variables calculated from means and standard deviations for the UB and VAL boys and girls of 6.5 -18.5 years are presented in the next chapter.

Chapter 5 will present relative variability from 6 – 18 years of UB and VAL boys and girls for all variables.

CHAPTER 5

DATA ANALYSIS

5.0 COMPARATIVE ANALYSIS

Analysis for relative variation (Coefficient of variation) was executed in three stages to include comparative variation per variable and sex for each occasion by site and age:

- Comparative variation between Vaalwater (VAL), Ubombo (UB) data and the National Centre of Health Statistics (NCHS) data.
- Tables of all data from all the occasions of Vaalwater (VAL) and Ubombo(UB)
- and their Coefficients of Variation by sex are graphically represented for ease of reference.

There are several advantages of using relative variation (Coefficient of Variation) in the analysis. The use of this measure lies partly in the fact that in many data series, the mean and the standard deviation tend to change together. Once we know the relative variation in an experiment, we can then evaluate the success of the experiment by the computation of the coefficient of variation which is the standard deviation expressed as a percentage of the mean. This allows for checking of any measurements outside one's own measure of variation. Coefficient of variation (CV) is independent of the unit employed because it is the ratio of the standard deviation to the mean. It hence does not have units and allows comparison between different items.

5.1 Introduction

(Eveleth, and Tanner, 1976), emphasized the need for taking accurate measurements and that variation can also depend on the type and methods deployed. They recommend that two years is the recommended age at which to begin stature measurements as opposed to the supine position measurements for height. From 2 to 3 years inclusively, both measurements should be taken. Supine length averages approximately 1 cm more than stature, but the variability of the difference between measurements can be in the range 0-2 cm. They compared the height means of national or urban samples from almost all countries in Europe. At 1 year of age the difference in mean length between the tallest and the shortest population is about 3 cm for both sexes. At 4 years the range increases to about 4cm and by 16 years it is 7 cm. The same increasing difference occurs in weight means. All European populations have means within 0.8 kg of each other at 1 year of age, by 4 years the range for boys is 1.2 kg and for girls 1.5 kg. At 10 years the range is 2.8 kg and 3.3 kg for boys and girls respectively, and at 16 years it is 2.9 for boys and 4.5 for girls. Recent trends have mostly been towards increased similarity between populations, indicating the present known impact of environmental effects. This importance of variability in measurements beyond just height and weight and at all ages from 6-18.99 years in a rural mixed longitudinal study like this one is not common, and have been covered extensively in this chapter.

Four Occasions were selected from each site. From Ubombo (UB), four out of five yearly occasions were selected (occasions 1, 2, 3 and 4). From Vaalwater (VAL), four out of twelve half yearly visits were selected such that they are exactly one year apart (occasions 2, 4, 6 and 8). The criteria used were, a) proximity and timing of each visit between the two sites, b) identical seasonal effects, and c) ensuring that approximately one full year space is between the visits. Although relative variation was estimated in all variables in both boys and girls from Vaalwater and Ubombo respectively, only selected variables were finally used to compare growth and development status of both Vaalwater and Ubombo children to other rural, urban, local and international data sets, particularly against the WHO Reference of 2007.

In other countries, e.g rural areas of Budapest, Moscow, Estonia, Warsaw and East and West Germany where heaviest children have been recorded and the lightest recorded children from Brussels, France, Rumania and Carrara, the figures illustrate the increasing diversity in height and weight between populations as children become older. Within a given population the standard deviations of height and weight increase as the means increase (Eveleth and Tanner, 1976). This can be explained that as the subjects get older, until the close of adolescence when variability again decreases, the standard deviations increase as the means increase. At a given age, the variation of a population is more or less independent of its mean value.

Significant variability exists within and between populations. Within sample variation is best represented by the computation of coefficients of variation. The relative variability at different ages was best demonstrated by (Hansman, 1970) in the following table.

Table 5.1

Coefficient of Variations

Coefficient of Variation of Body Length and Weight at selected ages among Denver Children

Length %		Age(yrs)	Weight %	
M	F		M	F
4.5	3.5	Birth	15.3	13.7
3.0	3.8	5	9.1	10.7
3.3	4.6	10	13.7	17.5
4.0	3.6	15	15.2	14.4

Table 5.1 depicts within sample variationsimilar CV 's between males and females for length at 5 and for weight at 15 years

Tables and figures that follow, show computed CV's for all Ubombo (UB) and Vaalwater (VAL) data sorted by:

- Occasion and 11 variables by sex and
- Kgamphe (KGA) Data was compared to Kgamphe-Cameron (VAL) data

Table 5.2
Variation values of Vaalwater (VAL) boys by age and variable

									Skinfolds			
Age	Occasion	Height	Weight	Sit.Height	Biac-Dia	Bi-iliac Dia	Head Circ.	Reluac	Subscap.	Triceps	Biceps	Supra-iliac
6	2	4.50	7.09	5.04	0.88	4.55	1.96	7.42	18.59	27.87	7.92	28.29
	4	16.96	44.16	13.44	15.02	0.00	1.11	16.36	40.67	34.30	16.23	65.25
	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	2	4.77	11.42	3.54	3.66	5.02	3.07	6.68	25.10	11.08	26.93	35.04
	4	5.07	11.03	3.38	6.81	7.05	1.68	5.86	22.22	28.13	24.80	21.70
	6	7.89	9.16	1.23	6.43	6.37	4.98	3.39	4.59	12.50	5.06	7.37
	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	2	4.09	8.33	4.75	3.71	4.76	2.87	6.91	16.06	21.01	16.13	18.61
	4	6.15	13.69	4.88	6.65	5.76	2.71	7.79	31.42	23.40	24.48	16.72
	6	4.07	13.53	2.19	5.45	4.36	2.07	6.96	12.45	14.45	11.97	17.47
	8	0.68	7.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	11.49
9	2	5.52	8.47	3.30	4.91	5.09	2.86	5.27	14.67	21.10	24.00	20.42
	4	5.36	17.15	5.38	5.60	7.54	2.74	8.85	16.51	23.54	17.25	17.90
	6	4.12	32.58	7.88	4.53	6.67	3.87	16.49	10.73	23.51	21.16	16.89
	8	5.70	21.82	3.93	5.10	8.19	1.56	4.29	7.78	15.98	27.52	17.02
10	2	2.99	9.12	3.93	5.10	8.19	1.56	4.29	7.78	15.98	27.52	17.02
	4	3.64	10.65	5.11	5.01	6.56	2.88	8.91	12.99	21.44	22.59	18.25
	6	4.36	16.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	8	6.94	25.24	2.92	5.50	4.72	3.30	6.46	10.36	23.55	19.79	15.02

Table 5.2 Cont.

Age	Occasion	Height	Weight	Sit.Height	Biac-Dia	Bi-iliac Dia	Head Circ.	Reluac	Skinfolds			
									Subscap.	Triceps	Biceps	Suprailiac
11	2	4.18	15.49	3.59	5.68	5.83	1.26	12.64	4.33	18.62	24.47	13.97
	4	2.16	5.98	1.84	3.99	7.90	1.76	5.54	18.69	27.09	15.17	11.97
	6	2.99	13.21	3.58	5.33	5.81	4.00	7.39	16.25	20.16	18.70	13.95
	8	3.61	12.44	3.79	5.50	5.58	1.56	3.40	20.36	33.06	27.62	24.53
12	2	2.94	9.00	3.76	7.10	4.69	1.87	2.71	25.99	15.48	25.54	18.87
	4	4.79	21.32	6.58	7.06	7.53	3.44	9.37	6.92	21.69	24.87	19.01
	6	4.05	25.76	6.31	5.26	5.49	3.27	13.33	14.03	26.84	22.66	17.03
	8	3.27	13.54	2.62	4.56	3.71	3.81	4.26	13.75	19.05	13.75	19.03
13	2	0.80	3.83	1.39	17.56	3.79	2.56	9.00	19.03	20.00	15.21	16.58
	4	3.34	9.43	3.78	18.24	2.29	1.89	6.30	19.54	19.59	18.28	8.33
	6	6.40	25.69	5.71	19.6	3.47	2.45	11.43	14.39	35.28	32.46	25.89
	8	8.61	32.44	5.04	18.5	3.93	1.64	4.22	12.25	24.31	29.01	30.74
14	2	3.98	10.12	4.09	18.97	4.43	2.69	5.69	19.72	25.18	21.65	21.81
	4	0.64	4.71	1.84	17.81	2.98	2.51	6.57	14.67	16.16	22.31	15.80
	6	2.34	18.56	6.62	18.95	3.10	2.53	8.92	15.99	28.27	5.47	10.18
	8	7.67	23.21	3.85	18.65	7.40	2.62	11.96	12.70	45.12	13.88	12.25
15	2	4.95	10.08	4.05	19.6	5.03	2.62	5.15	9.56	2.30	14.45	16.54
	4	4.07	12.50	4.27	19.81	5.29	2.67	6.92	18.17	16.01	25.77	24.57
	6	0.32	19.64	4.69	20.48	2.01	3.43	7.37	15.69	17.37	40.50	15.67
	8	6.22	12.38	5.07	20.24	5.96	3.54	7.02	12.29	22.92	22.91	10.35

Table 5.2 Cont.

									Skinfolds			
Age	Occasion	Height	Weight	Sit.Height	Biac-Dia	Bi-iliac Dia	Head Circ.	Reluac	Subscap.	Triceps	Biceps	Suprailiac
16	2	1.96	8.08	1.81	20.31	3.18	2.82	4.83	17.10	15.95	12.69	10.99
	4	5.18	12.62	4.32	20.77	8.03	2.11	7.61	23.65	20.17	16.49	28.66
	6	3.32	17.78	3.36	22.33	5.28	2.46	5.78	24.19	42.03	17.59	19.93
	8	2.84	18.71	0.00	20.2	0.00	0.00	0.00	0.00	0.00	36.68	37.98
17	2	2.28	11.04	3.53	22.81	4.50	1.19	9.16	15.64	16.90	22.92	10.82
	4	3.21	12.97	3.78	20.91	6.04	3.03	6.93	11.67	16.67	17.16	17.36
	6	3.72	11.60	0.55	24.31	6.23	2.26	11.93	21.32	25.03	21.46	19.92
	8	0.48	9.72	3.34	22.31	0.00	1.95	7.22	34.21	39.58	28.02	11.04
18	2	4.24	14.83	5.37	56.61	6.27	3.02	2.51	21.81	21.01	22.07	21.18
	4	1.98	4.24	1.86	55.51	16.65	3.15	1.77	16.23	22.41	19.20	10.55
	6	4.74	13.05	3.22	54.1	4.03	3.83	2.50	26.43	27.26	11.14	21.09
	8	1.81	10.75	0.00	56	0.00	0.00	0.00	0.00	0.00	33.09	15.75

Table 5.3
Vaalwater girls showing variation values for all ages and variables

									Skinfolds			
Age	Occasion	Height	Weight	Sit.Height	Biac-Dia	Bi-iliac Dia	Head Circ.	Reluac	Subscap.	Triceps	Biceps	Suprailiac
6	2	1.16	2.82	2.69	3.23	3.70	4.22	8.21	7.96	12.14	23.22	12.38
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	2	2.78	13.39	4.05	4.65	4.68	3.06	9.83	20.04	17.17	26.55	34.41
	4	5.43	14.89	4.75	6.14	7.09	3.05	10.97	13.04	17.14	34.88	18.45
	6	0.12	9.16	1.23	7.45	8.44	4.98	3.39	2.92	10.76	1.87	1.77
	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	2	6.73	20.14	5.50	10.06	8.90	1.68	9.55	23.84	20.12	25.84	15.38
	4	5.09	14.03	3.86	7.68	5.29	2.27	6.96	11.72	22.19	25.17	27.15
	6	2.49	9.07	2.19	4.31	4.05	2.13	7.27	8.16	10.99	17.95	38.48
	8	0.68	7.26	3.86	9.01	7.66	1.27	1.97	2.86	11.49	4.52	7.00
9	2	4.09	5.62	3.07	4.96	5.56	2.62	5.87	14.59	25.65	16.06	26.39
	4	6.26	19.82	5.15	9.55	7.03	1.52	9.52	22.48	24.65	21.76	35.29
	6	8.41	32.57	7.97	10.95	11.94	3.89	16.49	36.38	52.82	30.80	44.74
	8	5.70	21.77	4.51	6.23	7.93	3.09	10.94	27.52	17.02	26.16	20.66
10	2	5.10	20.43	5.15	6.87	7.02	2.90	10.93	35.70	21.50	37.15	29.64
	4	3.78	11.69	2.59	5.26	3.45	4.09	7.32	17.03	35.13	27.71	27.27
	6	4.77	16.18	3.86	7.52	6.11	2.73	8.30	24.44	17.32	19.43	25.41
	8	6.94	25.24	7.22	10.01	9.48	4.07	14.17	38.60	16.77	34.97	45.82

Table 5.3 cont.

Age	Occasion	Height	Weight	Sit.Height	Biac-Dia	Bi-iliac Dia	Head Circ.	Reluac	Skinfolds			
									Subscap.	Triceps	Biceps	Suprailiac
11	2	5.27	18.84	4.41	5.27	5.78	2.08	9.98	17.57	23.78	30.19	25.25
	4	7.39	20.32	4.92	7.47	6.81	2.63	11.23	70.31	26.68	23.90	26.10
	6	3.75	13.18	3.58	4.25	4.28	4.00	7.38	16.82	17.93	55.24	47.18
	8	3.61	31.11	2.67	10.82	5.69	1.38	9.74	27.62	24.53	24.91	20.11
12	2	5.52	12.12	3.97	3.68	5.07	3.50	49.41	25.99	15.48	26.34	28.93
	4	8.84	22.64	5.26	6.05	6.92	2.64	11.30	6.92	21.69	22.17	30.52
	6	9.04	25.76	6.31	9.13	8.81	3.29	13.39	14.03	26.84	23.40	33.40
	8	3.27	13.55	3.26	2.96	4.64	4.62	13.26	13.75	19.05	25.00	25.68
13	2	7.01	19.34	6.04	6.30	6.42	3.80	7.86	24.43	20.98	11.78	25.51
	4	11.68	32.09	3.71	10.01	13.60	2.06	12.19	32.40	17.86	14.51	55.95
	6	6.49	25.69	5.71	6.94	7.07	2.47	14.03	16.41	18.01	12.16	26.56
	8	8.61	32.43	8.01	5.85	10.43	4.12	10.90	29.01	30.74	21.07	45.78
14	2	3.35	16.62	3.97	5.83	6.61	2.79	7.44	27.21	29.89	20.78	17.36
	4	6.23	25.00	5.23	9.88	7.92	3.44	9.67	36.46	25.10	34.48	38.48
	6	6.35	18.56	6.62	6.96	9.92	2.55	8.92	18.32	14.74	15.84	23.90
	8	7.67	26.33	6.67	5.86	4.74	2.46	13.30	13.88	12.25	20.51	24.78
15	2	3.03	10.82	3.08	7.14	4.48	2.82	7.51	33.87	27.66	22.88	31.40
	4	3.47	15.22	2.58	5.10	5.51	2.45	7.48	22.65	29.61	20.81	23.09
	6	4.80	19.64	4.69	5.44	4.29	3.43	7.37	29.89	32.50	30.45	37.04
	8	6.22	12.14	3.78	8.98	5.96	2.78	5.64	22.91	10.35	18.02	18.24

Table 5.3 cont.

Age	Occasion	Height	Weight	Sit.Height	Biac-Dia	Bi-iliac Dia	Head Circ.	Reluac	Skinfolds Subscap.	Skinfolds Triceps	Skinfolds Biceps	Skinfolds Suprailiac
16	2	3.50	13.13	2.61	4.29	3.18	4.01	4.50	35.23	26.18	21.67	31.16
	4	2.74	9.99	2.31	4.07	5.26	2.64	5.24	20.49	23.60	18.43	27.46
	6	4.32	17.78	3.29	5.04	4.41	3.41	5.82	21.38	26.83	32.71	23.33
	8	2.84	18.71	3.53	5.45	5.46	3.37	7.90	36.68	37.98	30.45	27.55
17	2	3.11	11.31	1.46	6.60	4.50	2.04	6.53	22.57	37.75	40.43	23.48
	4	3.06	13.77	3.00	5.06	9.07	3.77	7.24	19.11	29.74	33.86	32.95
	6	2.60	11.60	1.17	2.17	5.76	2.26	11.92	29.10	73.16	43.47	26.49
	8	0.48	6.87	2.21	0.41	4.89	0.13	1.87	28.02	11.04	17.76	6.63
18	2	1.53	16.98	2.47	8.88	6.26	1.79	9.82	23.76	50.92	20.64	21.96
	4	3.70	11.12	1.83	3.17	8.08	1.87	9.12	21.41	48.09	39.16	35.80
	6	2.84	13.05	3.22	3.61	8.77	3.83	5.73	28.16	23.00	22.74	34.07
	8	1.81	10.75	2.57	3.53	3.11	0.73	1.60	33.09	15.75	29.50	64.71

Table 5.4
Ubombo (UB) variation values of girls from 6.0 to 18.0 years for all variables

									Skinfolds			
Age	Occasion	Height	Weight	Sit.Height	Biac-Dia	Bi-iliac Dia	Head Circ.	Reluac	Subscap.	Triceps	Biceps	Suprailiac
6	1	4.05	10.06	2.55	5.25	3.95	3.42	5.30	17.95	18.12	22.83	95.10
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	1	4.65	19.69	3.98	4.76	4.64	3.27	4.44	13.88	12.10	16.00	17.71
	2	3.56	10.12	3.47	9.90	4.20	2.24	4.50	25.39	14.71	19.51	16.60
	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	1	5.07	19.56	4.27	6.58	5.74	2.53	8.24	20.94	25.03	23.28	26.65
	2	4.25	11.07	3.30	8.77	4.80	3.13	7.23	16.02	17.34	21.08	23.12
	3	3.25	6.48	9.84	2.69	2.44	2.24	1.69	1.56	5.24	11.70	13.10
	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	1	3.87	15.70	3.50	6.49	6.48	3.02	7.59	14.21	20.82	30.14	28.11
	2	5.62	17.52	4.64	5.25	7.17	2.92	9.76	29.37	28.91	34.24	23.56
	3	4.57	9.61	3.63	6.18	4.31	3.21	4.26	16.47	15.07	16.67	12.50
	4	2.99	5.53	2.28	3.18	3.65	2.79	2.86	21.00	12.69	13.64	25.73
10	1	4.85	12.75	3.85	6.21	6.67	3.03	9.35	29.19	27.23	30.48	28.18
	2	3.12	11.50	3.58	5.60	5.34	2.78	4.27	16.19	22.73	23.68	24.77
	3	6.34	18.10	5.40	7.18	7.19	2.30	9.66	21.75	24.09	22.27	20.90
	4	4.22	10.82	3.81	4.25	5.52	3.34	5.86	16.12	22.31	23.30	22.17

Table 5.4 cont.

Age	Occasion	Height	Weight	Sit.Height	Biac-Dia	Bi-iliac Dia	Head Circ.	Reluac	Skinfolds			
									Subscap.	Triceps	Biceps	Suprailiac
11	1	5.30	15.29	4.50	7.83	4.07	3.03	10.35	28.19	25.10	22.47	37.82
	2	4.59	16.32	4.17	4.22	5.38	2.51	10.85	23.62	17.42	21.81	21.41
	3	3.93	12.16	4.16	5.23	3.85	3.04	8.98	23.85	26.97	35.29	22.25
	4	3.96	6.59	2.98	4.01	4.14	1.87	4.47	31.15	24.16	27.74	26.45
12	1	6.65	19.64	5.23	8.11	10.45	3.57	11.27	33.75	14.55	35.44	41.79
	2	4.09	15.48	3.97	7.14	6.42	2.86	8.05	15.40	25.65	23.95	14.77
	3	4.43	17.57	4.52	6.64	8.25	2.09	11.07	23.55	17.13	34.23	35.12
	4	3.66	11.97	3.83	5.29	6.92	2.99	5.47	21.26	24.66	20.99	28.99
13	1	5.14	15.70	4.80	4.92	7.13	3.03	9.73	24.36	26.09	54.33	22.69
	2	5.54	18.21	4.89	6.81	4.69	3.22	9.49	30.04	23.41	18.15	77.98
	3	5.32	13.35	3.53	5.91	4.45	2.74	8.00	21.74	28.32	20.00	28.39
	4	4.70	16.26	4.60	6.04	6.97	3.41	10.54	26.25	27.60	25.13	26.04
14	1	5.07	16.93	4.72	5.85	5.07	3.64	8.94	25.30	28.98	33.39	26.44
	2	4.08	9.95	4.22	4.45	5.16	3.12	7.27	N/A	30.02	25.19	N/A
	3	3.24	15.61	3.88	5.19	5.56	2.99	11.19	32.53	38.92	27.04	32.76
	4	3.26	9.46	3.17	8.53	2.89	2.95	7.62	26.80	17.56	31.00	33.96
15	1	3.23	11.51	3.06	6.08	4.86	2.83	8.17	24.95	13.93	27.70	23.62
	2	4.52	13.77	3.92	6.42	6.65	4.05	10.55	0.00	39.25	26.18	0.00
	3	3.97	12.38	4.66	6.06	6.04	2.98	13.15	69.60	44.87	36.80	82.66
	4	3.52	17.55	4.31	7.11	8.77	2.77	10.20	36.46	19.81	15.81	27.81

Table 5.4 cont.

									Skinfolds			
Age	Occasion	Height	Weight	Sit.Height	Biac-Dia	Bi-iliac Dia	Head Circ.	Reluac	Subscap.	Triceps	Biceps	Suprailiac
16	1	3.23	14.14	3.90	4.04	4.97	3.20	10.37	32.81	36.15	34.42	46.59
	2	3.18	8.52	3.02	5.59	0.00	2.78	7.93	N/A	26.47	31.35	0.00
	3	4.42	16.90	4.16	7.06	8.46	3.42	10.08	35.26	36.72	41.24	34.55
	4	4.30	9.95	3.91	3.83	3.46	3.35	12.78	27.99	39.04	37.29	25.72
17	1	3.65	10.62	2.54	4.70	4.98	3.23	6.70	29.22	31.23	24.38	30.91
	2	2.98	16.54	3.19	0.00	N/A	3.92	11.63	N/A	61.35	38.07	N/A
	3	2.87	9.32	2.41	6.56	6.42	3.67	11.30	31.24	28.42	38.16	55.48
	4	4.86	15.99	4.95	3.36	7.34	3.04	9.50	39.37	29.02	33.25	47.36
18	1	3.79	6.60	3.57	6.16	4.39	2.49	5.74	36.36	28.60	29.76	53.67
	2	6.72	16.53	6.15	3.98	N/A	3.92	8.23	N/A	20.00	25.97	0.00
	3	4.57	19.75	2.22	5.59	7.31	3.00	17.23	67.35	73.04	105.57	64.81
	4	3.33	11.00	3.07	6.41	6.79	3.88	9.56	38.82	28.95	51.07	38.61

Table 5.5
Coefficient of Variation for Ubombo (UB) boys of 6.0 – 18.0 years

									Skinfolds			
Age	Occasion	Height	Weight	Sit.Height	Biac-Dia	Bi-iliac Dia	Head Circ.	Reluac	Subscap.	Triceps	Biceps	Suprailiac
6	1	4.06	9.79	2.65	4.73	5.77	2.35	3.47	23.73	7.82	16.71	32.83
	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	1	7.42	18.82	5.17	8.02	8.72	2.81	6.21	16.38	22.76	23.46	23.53
	2	3.27	3.78	1.49	1.50	3.39	1.83	48.25	13.83	20.86	13.21	16.57
	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	1	5.40	11.64	2.41	6.66	5.78	1.88	4.76	18.65	21.47	15.13	14.25
	2	8.48	21.77	6.17	9.19	8.67	3.29	6.00	12.78	6.58	12.13	8.33
	3	3.20	4.19	1.93	3.44	3.90	2.29	4.08	10.30	20.26	7.50	17.90
	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	1	5.54	14.04	3.94	5.54	6.41	1.45	6.24	14.56	11.95	18.43	18.87
	2	5.08	11.51	3.53	4.92	6.15	1.64	5.89	25.48	20.03	17.66	14.06
	3	7.88	17.38	5.28	9.37	8.01	2.55	7.01	13.31	30.69	13.54	16.29
	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	1	6.58	16.21	4.96	6.52	7.64	3.87	7.64	11.11	25.57	17.50	15.97
	2	3.90	15.40	4.73	9.27	7.56	2.87	4.23	15.17	23.94	16.54	16.49
	3	14.40	12.30	4.19	3.00	2.43	1.36	5.26	7.30	14.57	14.20	17.21
	4	3.53	10.78	5.05	2.36	4.98	1.38	3.84	10.52	14.81	22.66	11.24

Table 5.5 cont.

Age	Occasion	Height	Weight	Sit.Height	Biac-Dia	Bi-iliac Dia	Head Circ.	Reluac	Skinfolds Subscap.	Triceps	Biceps	Suprailiac
11	1	4.53	11.94	4.29	4.55	5.22	3.36	8.22	11.63	12.33	17.60	18.89
	2	4.58	12.72	3.30	5.80	6.06	3.31	9.79	22.08	31.42	21.68	31.91
	3	6.50	15.67	5.74	11.06	6.48	1.43	7.18	10.11	13.60	10.47	9.94
	4	5.13	10.16	3.22	4.88	4.04	1.75	5.47	7.79	14.33	16.03	20.42
12	1	5.94	19.54	6.49	8.67	8.13	2.47	11.48	9.27	17.81	18.21	13.26
	2	4.10	10.26	3.12	5.08	3.62	3.35	5.78	10.08	24.21	14.91	16.88
	3	4.41	18.24	5.27	4.79	6.32	1.63	14.39	19.44	37.66	39.78	26.23
	4	7.20	18.51	5.58	8.77	8.66	2.26	12.67	24.84	37.21	38.99	29.10
13	1	4.30	11.98	4.03	7.54	5.36	2.80	6.57	15.44	21.20	20.92	20.55
	2	9.19	22.05	7.08	8.06	9.12	2.28	9.47	14.29	22.97	25.20	23.92
	3	4.03	9.35	3.84	5.33	1.80	3.30	4.00	23.21	16.49	16.81	18.99
	4	3.53	14.69	4.09	4.45	6.89	3.27	10.27	36.00	45.07	34.93	37.07
14	1	7.28	18.08	6.64	8.07	6.24	3.46	6.59	17.94	21.82	28.24	26.97
	2	3.98	14.48	4.71	9.84	6.60	3.04	7.17	14.31	19.50	10.28	10.50
	3	7.32	17.98	6.42	6.50	8.71	1.94	8.96	13.55	22.26	17.05	15.25
	4	6.55	12.39	6.13	6.34	8.26	3.72	3.96	10.97	37.72	38.38	35.06
15	1	3.73	9.19	3.72	2.90	4.64	3.47	7.95	13.98	13.87	15.30	16.08
	2	5.46	16.40	4.98	8.24	7.22	2.93	3.57	21.32	26.60	41.53	25.60
	3	3.35	15.49	5.17	6.84	4.98	2.77	11.79	10.75	17.40	16.62	25.78
	4	5.80	22.57	5.37	7.15	4.33	2.63	11.84	22.55	19.12	18.44	19.34

Table 5.5 cont.

									Skinfolds			
Age	Occasion	Height	Weight	Sit.Height	Biac-Dia	Bi-iliac Dia	Head Circ.	Reluac	Subscap.	Triceps	Biceps	Suprailiac
16	1	4.52	13.09	4.81	6.06	6.88	2.95	9.23	22.22	27.63	24.62	14.88
	2	4.80	8.60	4.39	11.15	6.47	2.56	7.10	18.11	26.08	10.90	11.65
	3	5.07	16.50	4.73	9.36	9.98	3.54	4.66	22.14	18.65	13.99	21.23
	4	2.26	6.82	2.48	4.51	4.46	1.75	6.16	13.51	15.00	15.76	15.78
17	1	3.09	10.70	5.12	3.97	6.05	3.73	8.69	21.29	20.23	14.25	23.28
	2	4.25	9.10	4.32	4.26	7.21	2.83	6.67	17.31	33.33	16.95	22.31
	3	3.81	11.63	2.72	4.79	2.91	2.76	9.65	21.23	41.02	23.10	17.86
	4	3.22	6.67	2.50	7.35	4.37	3.52	12.16	22.05	36.31	21.57	19.21
18	1	2.86	8.99	3.89	3.26	5.71	3.11	5.74	24.25	20.75	19.70	15.33
	2	2.79	10.92	4.86	5.20	6.23	3.29	7.20	26.08	19.10	11.55	18.33
	3	3.09	8.67	2.89	3.45	5.18	1.96	6.80	27.93	41.67	28.67	22.20
	4	3.48	9.51	3.41	8.04	6.74	2.28	4.32	23.61	25.68	18.04	20.78

Table 5.6
Summary of variation of Ubombo (UB) girls mean values of all variables for ages 6.0 – 18.0 years

								Skinfolds			
Age	Height	Weight	Sit.Height	Biac-Dia	Bi-iliac Dia	Head Circ.	Reluac	Subscap.	Triceps	Biceps	Suprailiac
6	3.44	8.40	1.35	1.12	3.34	1.48	4.51	16.05	15.79	19.33	22.31
7	4.34	17.19	2.43	1.58	4.52	1.51	4.45	16.25	12.93	17.21	17.33
8	4.58	15.11	3.00	1.82	5.04	1.37	7.11	16.80	20.14	21.33	23.84
9	4.38	13.97	2.51	1.59	6.00	1.54	7.10	18.95	21.19	27.49	24.10
10	4.56	13.00	2.78	1.69	6.30	1.50	7.65	23.60	24.89	26.59	25.46
11	4.62	14.06	2.97	1.66	4.33	1.40	9.61	26.64	22.74	25.44	30.29
12	5.03	16.89	3.37	2.16	8.85	1.56	9.54	27.75	18.34	29.99	36.27
13	5.17	16.15	3.46	1.91	5.95	1.65	9.51	24.91	26.04	25.27	31.04
14	4.11	13.77	3.28	1.92	4.88	1.74	8.89	27.85	29.12	29.98	30.44
15	3.73	13.61	3.04	2.14	6.06	1.71	9.91	37.60	23.66	25.96	38.61
16	3.68	12.54	3.04	1.85	6.12	1.71	9.97	32.34	34.19	35.64	36.92
17	3.53	11.95	2.48	1.79	5.73	1.87	9.19	31.91	33.15	30.51	41.61
18	4.43	12.66	3.26	1.95	5.92	1.93	9.23	42.56	31.36	45.75	47.59

Figure 5.1
Graphical representations of variation of Ubombo (UB) girls mean values of all variables for ages 6.0 – 18.0 years

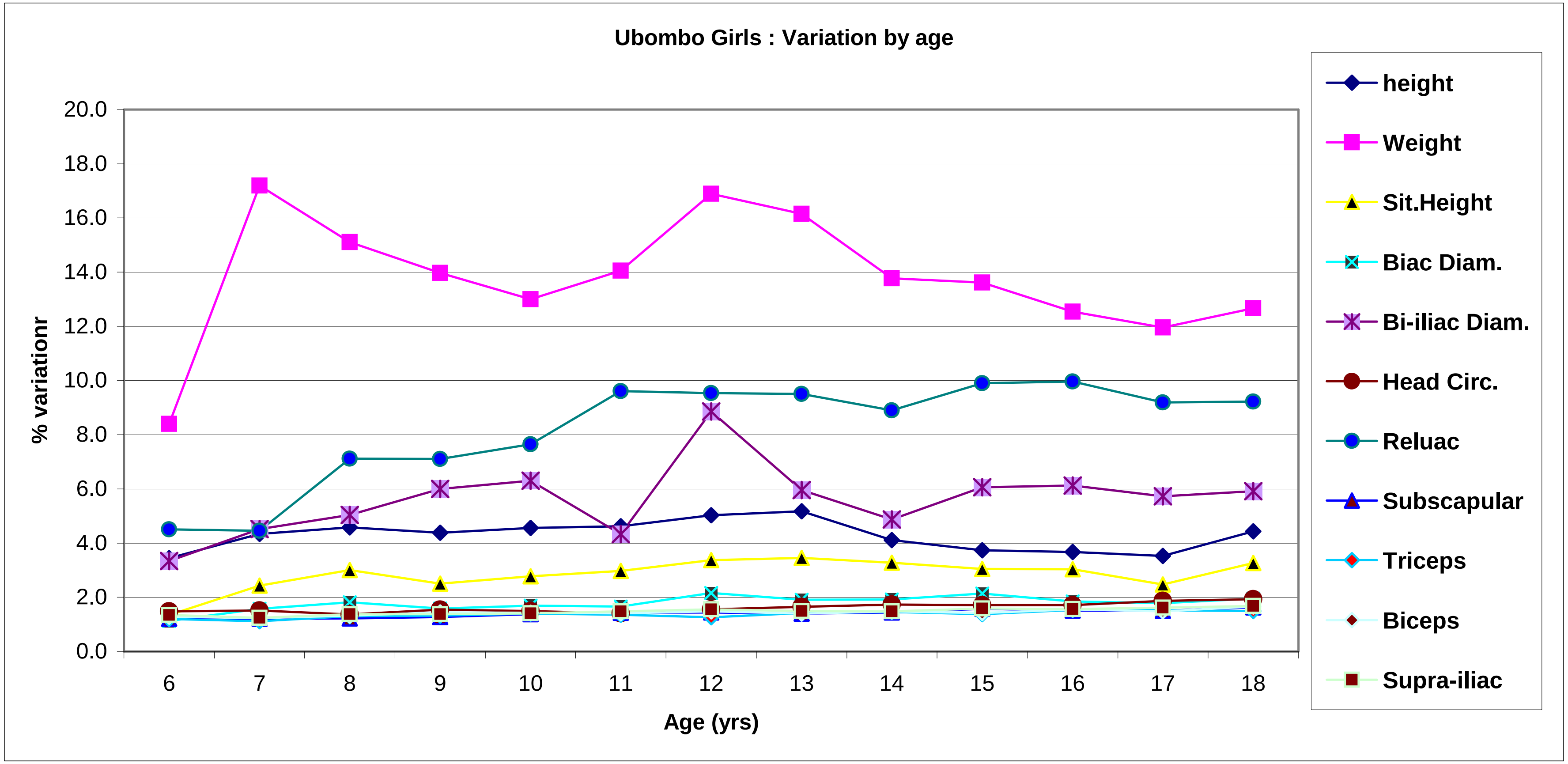


Table 5.7
Summary of variation of Ubombo (UB) boys mean values of all variables for ages 6.0 – 18.0

								Skinfolds			
Age	Height	Weight	Sit.Height	Biac-Dia	Bi-iliac Dia	Head Circ.	Reluac	Subscap.	Triceps	Biceps	Suprailiac
6	4.06	9.79	2.65	4.73	5.77	2.35	3.47	23.73	7.82	16.71	32.83
7	6.66	16.10	4.50	6.83	7.77	2.63	12.33	15.91	22.44	21.69	22.38
8	6.20	14.39	3.74	7.13	6.60	2.44	5.11	15.32	16.23	13.13	12.61
9	5.94	14.23	4.13	6.26	6.71	1.77	6.31	17.36	18.47	17.12	16.95
10	7.00	14.73	4.75	6.35	6.42	2.87	5.81	11.73	22.37	17.10	15.89
11	5.07	12.79	4.26	6.40	5.54	2.70	7.95	12.93	18.11	16.82	18.47
12	6.45	15.80	4.97	6.98	6.42	2.66	9.95	13.53	26.47	24.21	19.19
13	5.30	14.04	4.72	6.73	5.58	2.87	7.01	20.06	24.33	23.53	23.16
14	6.27	16.38	5.98	8.08	7.10	3.05	6.91	14.88	23.68	23.32	22.14
15	4.55	14.77	4.61	5.94	5.46	3.05	7.93	17.40	19.51	20.80	21.16
16	4.41	11.80	4.40	7.57	7.09	2.81	7.54	20.07	23.93	18.16	15.21
17	3.63	9.70	4.03	4.77	5.74	3.23	8.75	20.14	30.95	17.93	21.35
18	3.02	9.40	3.72	4.65	5.88	2.68	6.05	25.40	27.12	20.14	18.91

Figure 5.2
Graphs of variation of Ubombo (UB) boys mean values of all variables for ages 6.0 – 18.0 years

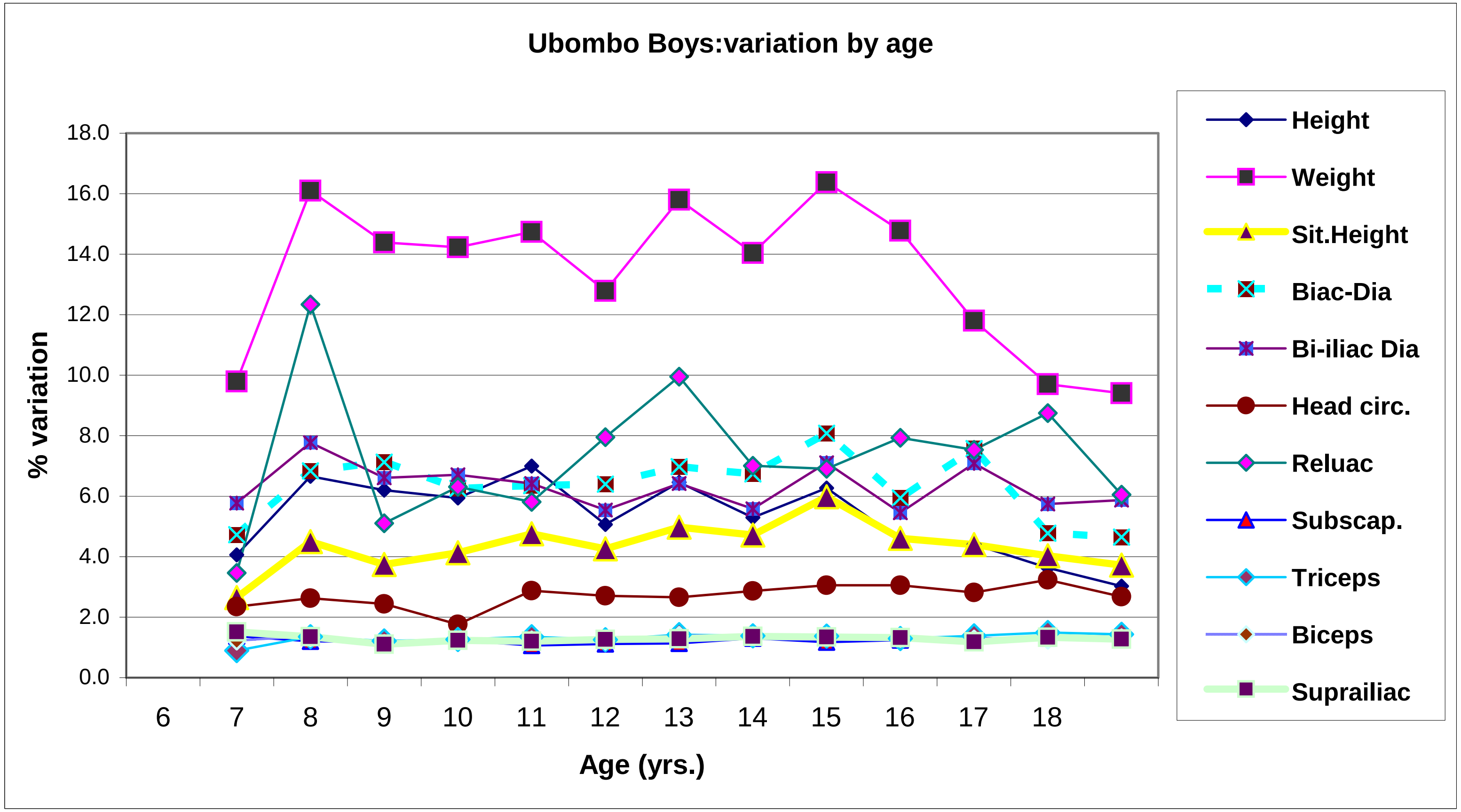


Table 5.8
Summary of variation: Vaalwater (VAL) girls mean values of all variables for ages 6.0 – 18.0 years

								Skinfolds			
Age	Height	Weight	Sit.Height	Biac-Dia	Bi-iliac Dia	Head Circ.	Reluac	Subscap.	Triceps	Biceps	Suprailiac
6	1.02	2.42	2.35	2.81	3.22	3.69	7.09	7.02	4.24	21.03	10.77
7	4.02	13.91	4.24	5.70	6.33	3.21	9.98	14.90	4.94	29.67	23.54
8	4.95	14.50	4.12	7.86	6.53	1.97	7.79	15.78	5.32	23.05	24.35
9	6.08	19.26	5.14	8.22	7.89	2.57	10.27	24.32	5.61	22.88	34.68
10	5.01	17.77	4.53	7.29	6.28	3.38	9.77	28.03	6.16	28.80	30.63
11	4.90	21.43	3.83	7.09	5.60	2.52	9.53	31.42	6.22	33.63	30.76
12	6.78	18.74	4.79	5.64	6.48	3.48	21.54	15.32	6.13	24.06	30.07
13	8.45	0.00	5.80	7.28	9.27	3.16	10.82	25.45	6.88	14.64	36.64
14	5.56	20.82	5.34	7.19	7.30	2.86	9.42	25.50	7.94	24.11	25.99
15	4.16	14.97	3.51	6.73	5.12	2.88	7.21	27.82	8.70	23.27	29.22
16	3.38	14.39	2.84	7.14	4.60	3.47	5.52	28.88	9.93	24.33	27.76
17	2.68	11.87	2.07	4.29	6.75	2.56	7.73	23.67	11.38	35.51	26.57
18	2.66	12.89	2.60	4.50	7.23	2.43	6.73	27.09	12.62	29.13	36.88

Figure 5.3
Graphs of variation patterns of Vaalwater (VAL) girls of 6.0 – 18.0 years

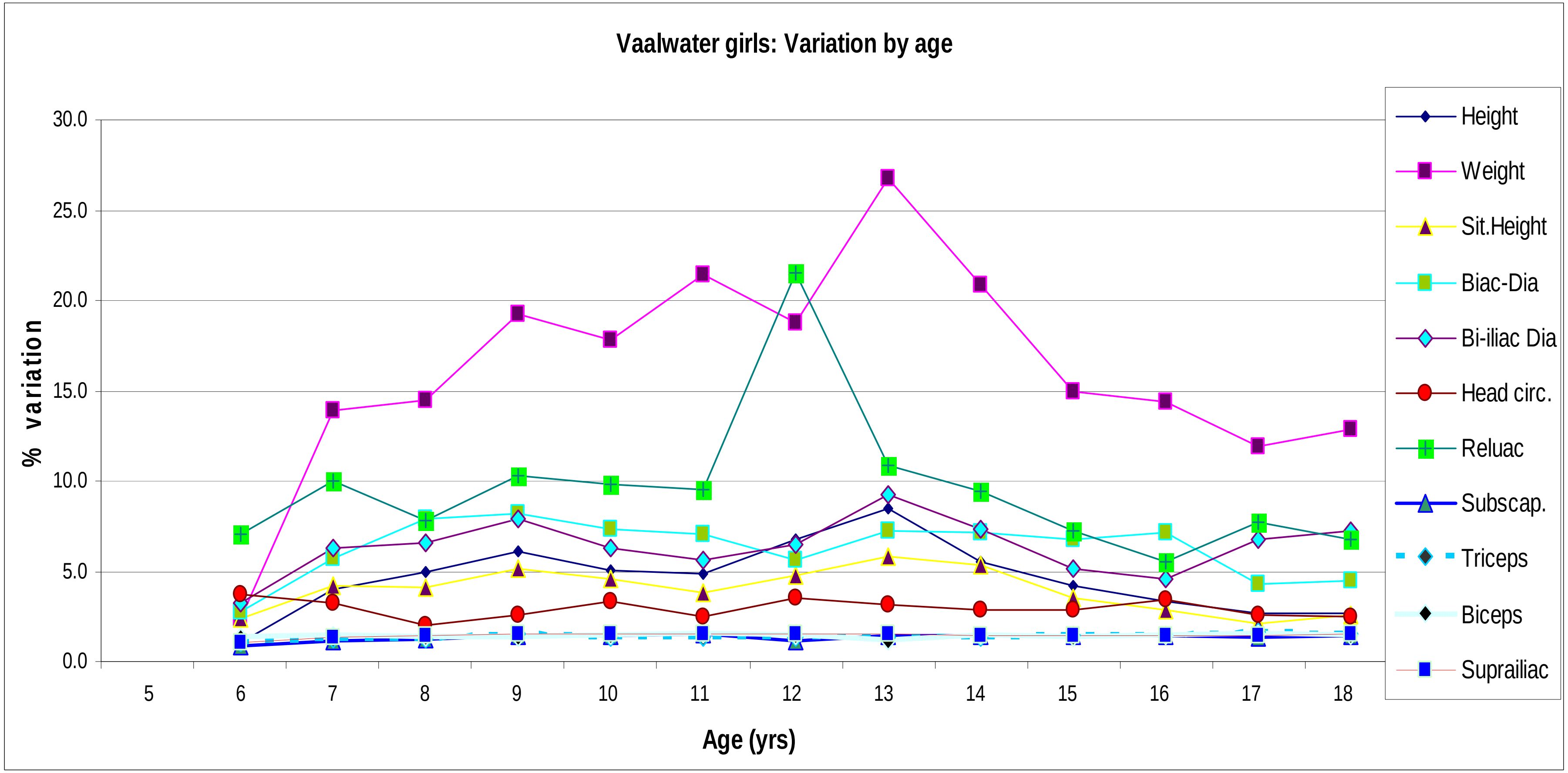
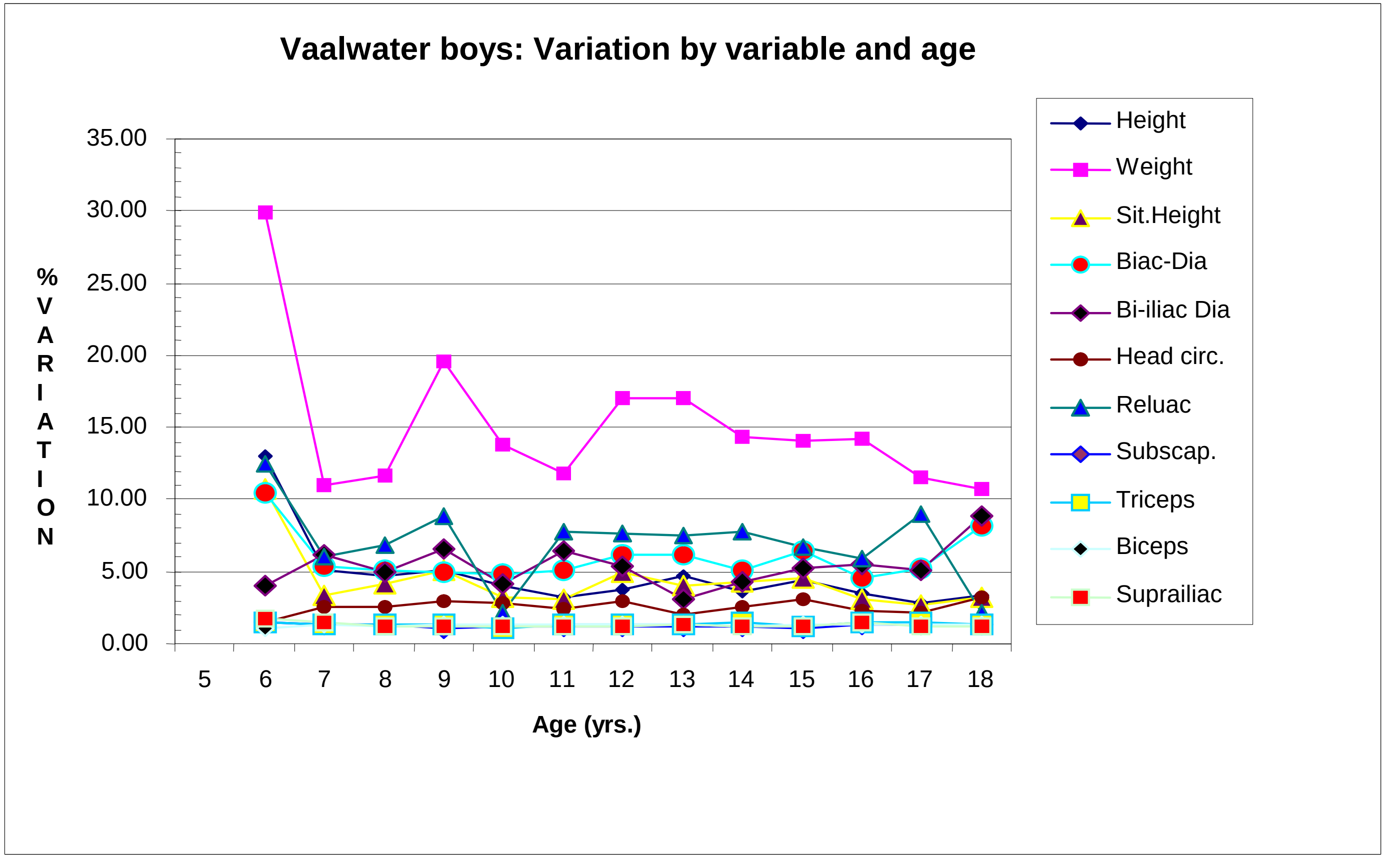


Table 5.9
Summary of variation of Vaalwater (VAL) boys mean values of all variables of ages 6.0 – 18.0 years

								Skinfolds			
Age	Height	Weight	Sit.Height	Biac-Dia	Bi-iliac Dia	Head Circ.	Reluac	Subscap.	Triceps	Biceps	Suprailiac
6	13.00	29.87	10.66	10.46	3.96	1.47	12.48	33.13	32.20	12.62	51.77
7	5.15	11.05	3.29	5.41	6.10	2.57	6.02	22.05	19.72	24.57	26.95
8	4.73	11.61	4.12	5.10	4.98	2.48	6.87	21.46	19.78	17.53	16.85
9	5.14	19.57	5.11	5.01	6.56	2.88	8.91	12.99	21.44	22.59	18.25
10	4.08	13.76	3.17	4.87	4.09	2.77	2.18	17.29	13.40	23.28	14.69
11	3.22	11.80	3.11	5.03	6.44	2.39	7.77	14.66	23.18	22.63	18.61
12	3.71	17.02	4.96	6.14	5.35	2.97	7.58	15.32	21.05	21.08	18.57
13	4.72	17.05	4.06	6.16	3.12	2.07	7.50	16.85	25.03	24.91	20.58
14	3.69	14.34	4.32	5.07	4.29	2.61	7.81	16.46	29.08	15.19	14.59
15	4.43	14.04	4.54	6.46	5.22	3.07	6.68	13.64	14.86	22.61	17.08
16	3.54	14.24	3.12	4.59	5.46	2.26	5.88	21.06	26.61	23.32	26.50
17	2.79	11.51	2.73	5.25	5.14	2.14	8.97	21.25	25.75	23.14	15.07
18	3.41	10.75	3.19	8.19	8.90	3.28	2.18	20.75	22.91	24.39	16.74

Figure 5.4
Graphs of variation patterns of Vaalwater (VAL) boys of 6.0 – 18.0 years



5. 2 Conclusion

CV for all eleven variables was computed from the ratio of the Standard Deviation (SD) and the Weighted Mean (M) expressed as a percentage. Coefficient of Variation (CV) = (Standard Deviation / Weighted Mean) X 100

Key findings were divided into two main groups:

- High variability variables were in the following order: weight, relaxed upper arm circumference, bi-iliac and bi-acromial diameters
- Low variability variables were height, sitting height, head circumference and the skinfolds from biceps, triceps, sub-scapular and supra-iliac sites.

5.3 Findings

5.3.1 Comparison by occasion

Only select occasions were used for analysis. The criterion for this selection was based on eliminating possible seasonal effect by selecting the same season during which measurements were taken.

Tables 5.1, 5.2, 5.3 and 5.4, indicate different occasions for all variables. Data from occasions 2, 4, 6 and 8 from Vaalwater (VAL) and occasions 1, 2, 3 and 4 from Ubombo (UB) were utilised for computing the CVs.

5.4 Comparison by age

For both UB and VAL, similar age groups in each occasion indicated no significant difference in their average weighted means for all variables tested and hence the age groups could be pooled together. T-Test per variable and age were computed and $P>0.05$ was found to apply to all variables hence allowing for data to be pooled. (t-test results are at annexure A)

5.5 Comparison by sex

Since CV is a ratio, the CV does not have units and does not differentiate between boys and girls. Both UB and VAL CV's showed high variation in the following order; weight, relaxed upper arm circumference, bi-iliac and bi-acromial diameters.

5.6 T-Test Results

There is no significant differences between UB and VAL distance measurements ($P>0.05$). (T-tests under appendix A).

Due to small sample sizes from Kgamphe (KGA) data, the comparisons were only made for the limited age groups respectively and KGA data alone was not used in the overall conclusions reached in this thesis.

Comparative variation using the CV's also indicated that weight, relaxed upper arm circumference, had the highest within sample variation.

5.7 Conclusion

In this analysis, it was possible to compare the Coefficient of Variation between all the variables from Ubombo and Vaalwater for boys and girls respectively. Weight was the most variable for both sexes and at all ages.

Chapter 6 deals with comparative data of select metrical traits of individual subjects at one level and at the population or group level. WHO Reference 2007 data were used as a standard to assess the growth and development status of UB and VAL children.

CHAPTER 6

COMPARATIVE STUDIES OF SELECTED METRICAL TRAITS

6.0 INTRODUCTION

This chapter is devoted to the actual results and findings obtained in the study. Selected metrical traits, e.g. height for age (HFA), weight for age(WFA) and other derived variables e.g. Body Mass Index(BM)I, and Peak Height velocities(PHV) were estimated for UB and VAL boys and girls and were subsequently used for comparison to other studies, particularly against the newly released WHO Reference, of 2007. HFA is one of three anthropometric indices commonly used as an indicator for malnutrition. A deficit in height-for-age does not necessarily establish the specific processes that lead a particular child or a group of children to be malnourished. Height-for-age reflects linear growth achieved pre- and post-natal, and its deficits indicate long-term, cumulative effects of inadequacies of health, diet, or care. For children up to about two years of age, height is measured by recumbent length. For older children, height is measured by stature while standing.

Shortness in height, refers to a child having low height-for-age. Shortness may reflect either normal variation in growth or a deficit in growth. Stunting refers to shortness that is a deficit, i.e., linear growth that failed to reach genetic potential as a result of suboptimal health or nutrition conditions. (Beaton , 1990) have argued that stunting is a population proxy for multifaceted deprivations. Recent research has found that linear bone growth occurs in an episodic or saltatory process such that a stasis period of one or more days of no growth is punctuated by a daily saltation of growth (Lampl , 1992). Lampl's research suggested that stunting must result from a decreased frequency of growth events, decreased amplitude of growth when an event occurs, or both.

Stunting is defined as height <-2 SD below that expected on the basis of the international growth reference. National prevalence's of stunting in developing countries range up to 64.2% (WHO, 1997, p.18). There are often large disparities within countries. For example, in Mozambique, 34.0% of children in Maputo province and 74.0% in Zambezi province were stunted according to a national survey done in 1995. Where the prevalence of stunting is high, it can be assumed that most short children are stunted because of environmental reasons. It also follows that where stunting rates are high, the majority of

children (and not only those below the traditional cut-off point) are not reaching their growth potential.
Stunting was estimated using the cut-off of children falling below the 5th percentile of the NCHS height for age reference charts and these were compared to the WHO Reference 2007 analysis.

6.1 Analysis

6.1.1 Interpretation and comparison of Ubombo and Vaalwater data

The KwaZulu-Natal income dynamics study (KIDS) of 1993-1998 was a longitudinal household dataset for South African policy analysis. It concluded that 2/3 of households that were below the poverty line in 1993 and the same numbers still remained below the poverty line in 1998. The subsistence base of the other third of households had risen above the poverty line by 1998. They further concluded that not only were those households in poverty in 1993 at high risk of remaining there, but two thirds did, but also those just above the poverty line were at substantial risk of falling back into poverty, half of them did fall back into poverty (May , 1999). UB and VAL children who were at high risk for stunting, thinness or wasting were assessed by AnthroPlus software and compared to the WHO standards.

The AnthroPlus software provided by the WHO describes in detail how to interpret the following indicators for a child:

Length/height-for-age: reflects attained height in cm. at that age. It can help in identifying stunted (short) children due to prolonged under nutrition or repeated illness. Children who are tall for their age can also be identified.

Weight-for-age: reflects body weight relative to the child's age on a given day. This indicator is used to assess whether a child is underweight or severely underweight. It is NOT used to classify a child as overweight or obese. Where age is not accurately known, weight cannot be relied upon as a child may be underweight either because of shortness/stunting or thinness or both. Fluid retention increases child's weight masking what may actually be low weight. Oedema was not recorded in the UB and VAL data, but trends followed after four visit indicate their pattern of growth clearly.

Weight-for-length/height: this indicator reflects body weight in proportion to attained growth in height. The indicator is useful where children's ages are unknown, and it helps in identifying children with low weight-for-height who may be wasted or severely wasted. Wasting is usually caused by a recent illness or food shortage that causes acute and severe weight loss, although chronic under nutrition or illness can cause this condition. Children with high weight-for-height may be at risk of becoming overweight or obese.

6.1.2 BMI (body mass index)-for-age

This is an indicator that is especially useful for screening for overweight and obesity. The BMI-for-age chart and Weight-for-height chart tend to show very similar results.

6.1.3 Individual Analysis

6.1.3.1 AnthroPlus Software

WHO AnthroPlus software licence agreement is needed to use the software (WHO, 2009.), it can be downloaded free of charge at the following website http://www.who.int/growthref/tools/en/.

This WHO AnthroPlus software was designed and developed to facilitate the application of the WHO Reference 2007 for 5-19 years to monitor the growth of school-age children and adolescents and hence included the WHO Child Growth Standards for 0-5 years (published in 2006 as Who Anthro) for weight-for-age, height-for-age and BMI-for-age and windows of achievement for six gross motor milestones (www.who.int/childgrowth). In 2008, WHO Athro was updated to include Head-circumference for age, arm-circumference-for-age, triceps and sub-scapular skinfold-for-age. AnthroPlus, the new version, allows and enables both individual and population growth monitoring.

WHO AnthroPlus consists of three modules:

- Anthropometric calculator (AC): facilitates deriving nutritional results for an individual child.
- Individual Assessment (IA): enables the user to collect and save data for children who are repeatedly examined up to the age of 19 years.
- Nutritional Survey (NS): Allows capturing growth surveys and their analysis.

The WHO Reference 2007 provides a smooth transition from the child growth standards for 0-5 years to the older age group of 5-19 years. The data tables and charts cover 1st to the 99th percentile and from -3 to +3 standard deviations (SD). It covers age ranges 5-19 years for the height-for-age and the BMI-for-age indicators but covers only 5-10 year age range for the weight-for-age indicator. This is a major improvement given the limitations of previous reference data e.g. NCHS and many other reference data that allowed limited ranges of standard deviation scores(SD scores or Z-scores or even the percentiles.

Weight-for-age is not a good indicator as it cannot distinguish between height and body mass in an age period where many children are experiencing the pubertal growth spurt and may appear as having excess weight by weight-for-age indicator when in fact they are just tall. BMI-for-age has been recommended as a good indicator for assessing thinness, overweight and obesity in children 10-19 years.

The use of AthroPlus for data capturing and analysis requires standardized measurement procedures and the details of the procedures used to generate the WHO Reference are available at http://www.who.int/childgrowth/trainin/en, as indicated under materials and methods in this thesis.

6.2 Results

6.2.1 Individual Assessments (IA)

The capturing of all individual data was necessary in order to generate the ireport of each individual child. This allows for a “diagnosis” of the growth status through the graphical plots. If the child’s WFA is below the -2 Z score line, the child is considered underweight. If the weight is above the 1 z-score line and HFA is above the 1 z-score line, the weight-for-age will be in the normal range.

A child whose HFA is above the median and weight-for-height above the 3 Z-score line the child is obese. It is important to consider all of child’s growth charts together, particularly if only one of the charts shows a problem If a child is underweight according to WFA chart, height must be considered including weight-for-height and focus more on the weight-for-height and height charts.

HFA reflects attained growth in height. Stunting(HFA<-2SD) implies that that child had for a long time received inadequate nutrients to support normal growth it may also mean that that child has suffered repeated infections. A stunted child child may have a normal weight-for-height Z-score line but have low weight-for-age measure due to shortness

Weight-for-height is a reliable growth indicator even when age is not known. Wasting (weight-for-height (WFH) <-2SD) usually results from a recent severe event.

6.2.1.1 Ubombo children

The individual child measurements were plotted on growth charts derived from the WHO Multicentre Growth Reference Study. These were plotted in the Boy's Growth Record or the Girl's Growth record so that trends can be observed over time particularly useful in longitudinal studies and hence, growth problems identified.

Children who have been seen on four occasions were particularly singled out to give an example of the longitudinal results.

Children were selected as high risk for weight, height and BMI. All children were analysed individually and were later combined means for various measurements. Some of the individual children are plotted below to show how they compare to the WHO Reference data.

All software modules mentioned above enable the user to derive nutritional status information in z-scores and percentiles and the WHO Reference 2007 allows for 61-228 months for height-for-age and BMI-for-age but only 61-120 months for weight-for-age.

For 5-19 year olds, the interpretation of height-for age and weight-for-age is as for children 0-60 months as indicated above, but for BMI-for-age the recommended cut-offs for overweight and obesity are not the same as in preschool children. In this 5-19 age group, the +1 SD in the WHO reference is equivalent to 85th percentile and coincides at 19 years with the adults cut-off of BMI=25 kg/m2 which is the cut-off for overweight. Similarly the +2 SD, equivalent to the 97th percentile coincides at 19 years with the adult's cut-off of 30 kg/m2 which is the recommended cut-off for obesity. The +3 SD cut-off point, will then be considered severely obese. It corresponds to a BMI of above 35 kg/m2 .

The software uses default lower and upper SD boundaries as flag limits to identify any extreme or potentially incorrect Z-score values, e.g. lower SD for WAZ, HAZ and BAZ are -6, -6 and -5 with upper SD's as +5, +6 and +5 respectively. All flagged Z-scores are excluded.

The next set of graphs is using the following colour coding:

- **GREEN**: numeric range $-1SD \le z \le +1 SD$ graph median line at 50th percentile.
- **GOLD**: numeric range $-2SD \le z < -1SD$ or $+1SD < z \le +2SD$, graph line -1SD and +1SD at 15th and 85th percentile.
- **RED**: numeric range $-3SD \le z < -2SD$ or $+2SD < z \le +3SD$,graph line -2SD and +2SD at 3rd and 97th percentile.
- **BLACK**: numeric range $z < -3SD$; $z > +3SD$ graph line -3SD and +3SD the percentile is Not Available (N/A).

Clinical signs of marasmus and kwashiorkor require special attention. The wasting associated with marasmus will be appararent in the child's graphs for weight-for-age and weight-for-height. The oedema(fluid retention) associated with kwashiorkor can hide the fact that a child has very low weight. When you plot the weight of a child who has oedema of both feet, it is important to note on the growth chart that the child has oedema. A child with oedema of both feet is assumed to have a z-score below -3 and should be referred for specialised care.

Figure 6.1

UB308 subject BMI z-score

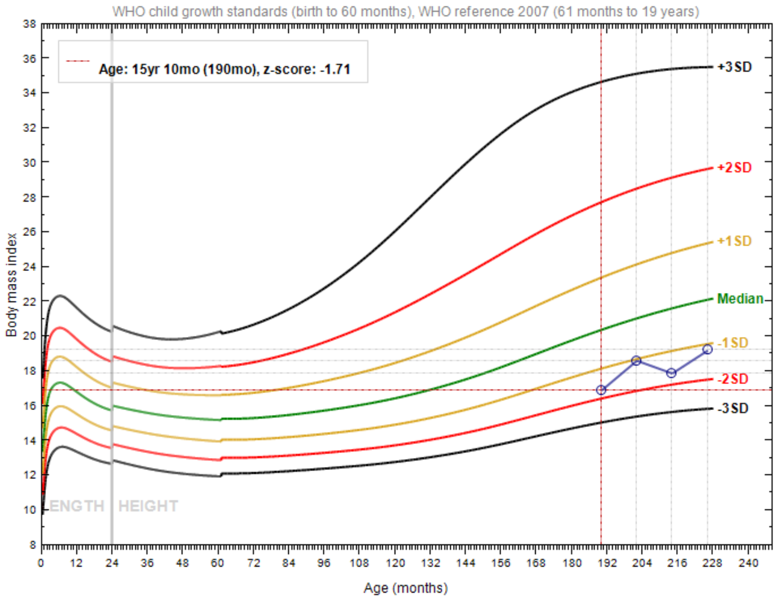
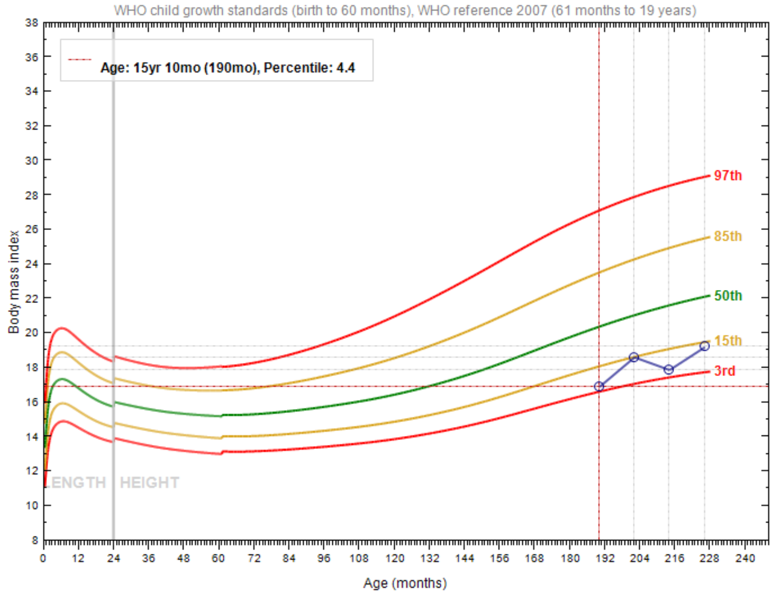


Figure 6.2

UB308 subject BMI percentile



Subject number 308's data, has been captured and by selecting the Z-score option of the individual's assessment of the AthroPlus software, and the selection of the BMI for analysis, the above graphs were automatically generated. BMI z-scores show a range from -3SD to +3SD while the percentiles are from 3rd percentile to 97th percentile. Subject UB308 is thin for age but not wasted and hence falls within the normal range.

Figure 6.3

Ub308 height-for-age z-score (HFAZ)

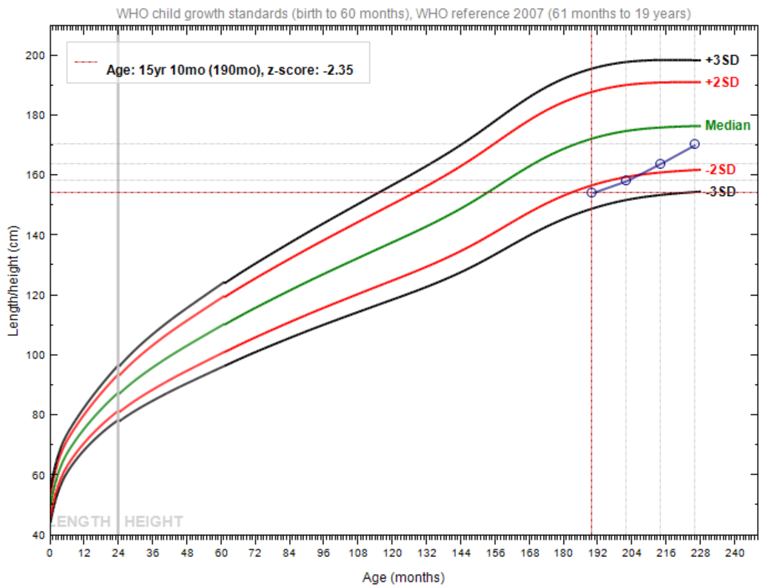
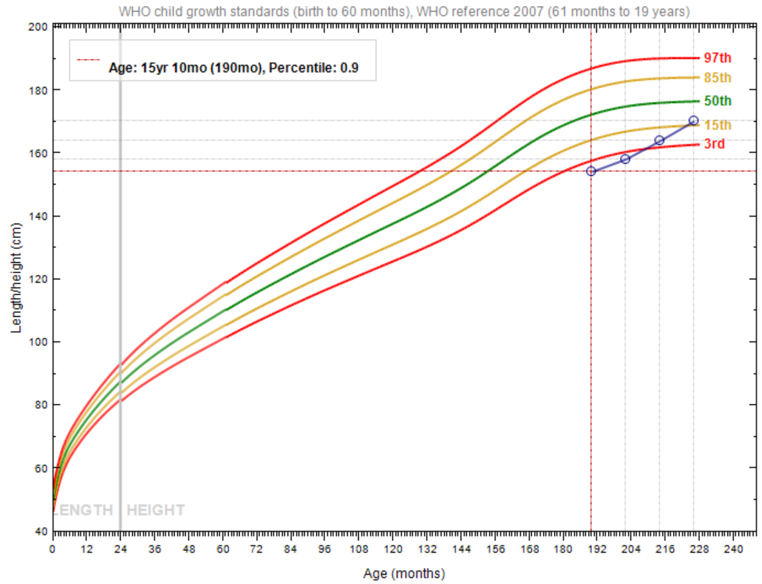


Figure 6.4

Ub308 height-for-age percentile



Again using subject UB308, HFAZ scores of four occasion measurements were generated. Z-scores indicate a possible “catch-up” where at each age the graphs moved towards the Median of the WHO Reference data or towards the 50th percentile. This shows that the child was at puberty and hence the” growth spurt”. The child was short for age(stunted) at the first visit (height below -2SD) and by the third visit the child was within the normal height for age range of > -2SD but < median.

Figure 6.5

Ub662 four visits; WFAZ

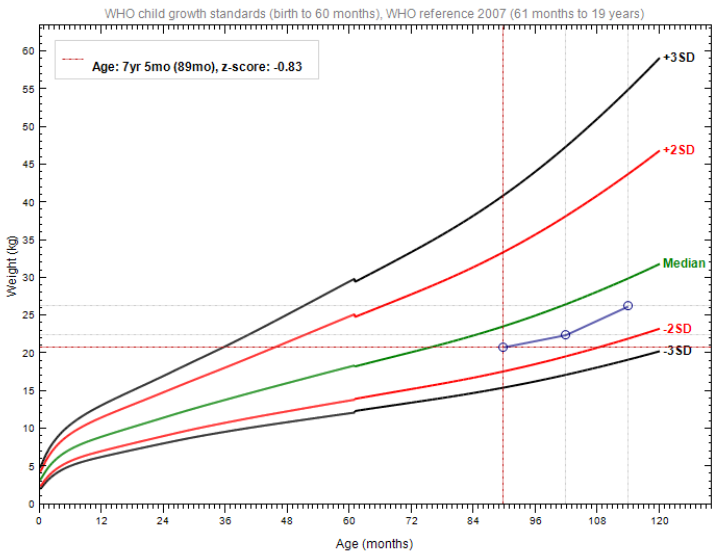
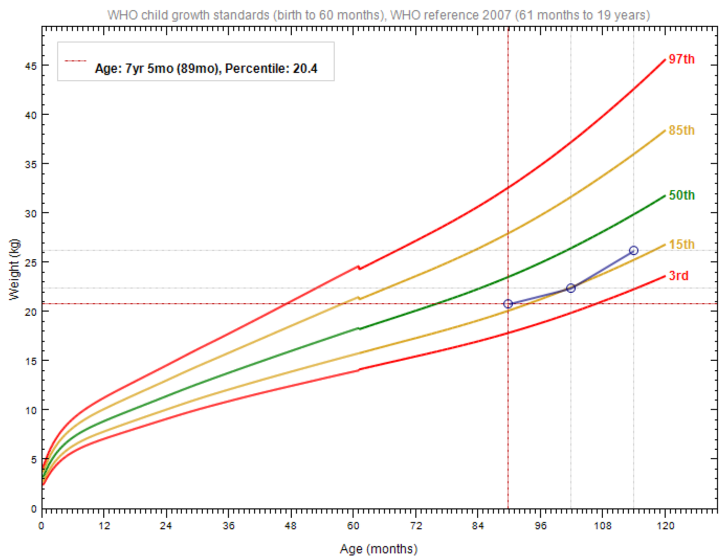


Figure 6.6

Ub662 four visits: WFA percentile



Figures 6.5 and 6.6 above, denotes that in assessing WFAZ using the weight-for-age WHO Reference data, the data does not go beyond 10 years. Subject UB662 show normal weight-for-age (WFAZ) z-score line between -2SD and the Median or between the 15th and the 50th percentile of the WHO reference.

Figure 6.7

Ub662 four visits HFA percentile

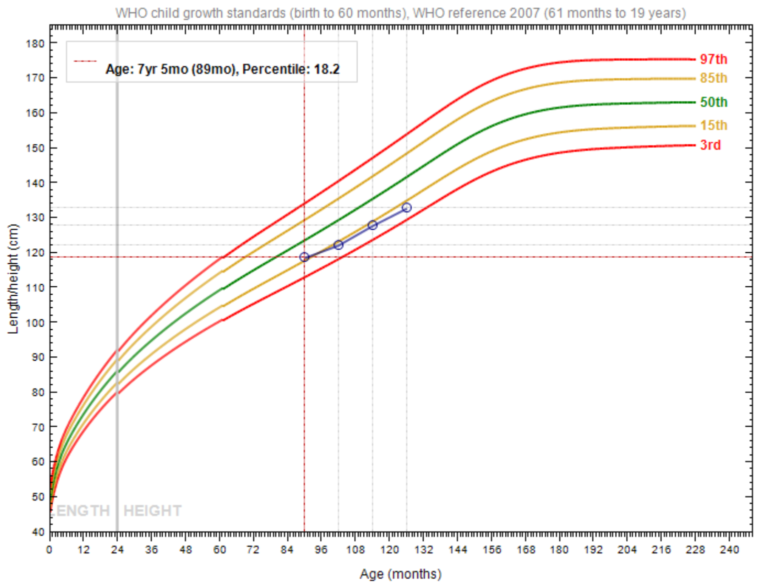
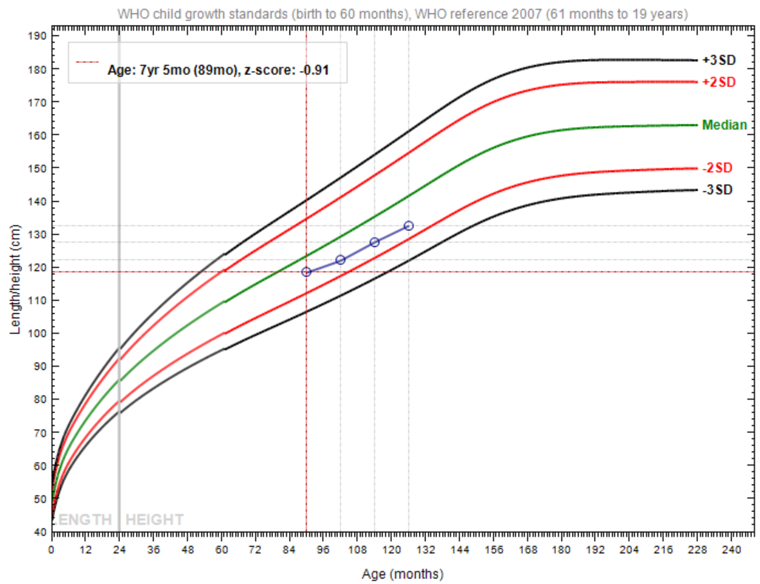


Figure 6.8

Ub662 four visits HFAZ



The graph shows the subject’s height measurements on four occasions to be on the borderline of the 15th percentile towards the 3rd percentile (stunting), whereas the z-score is indicating that the UB662 is falling within the normal range of the WHO HFAZ reference between the median and -2SD. If the trend continues towards the 3rd centile, the child is at risk.

Figure 6.9

Ub662 four visits BMI-for-age Z-score

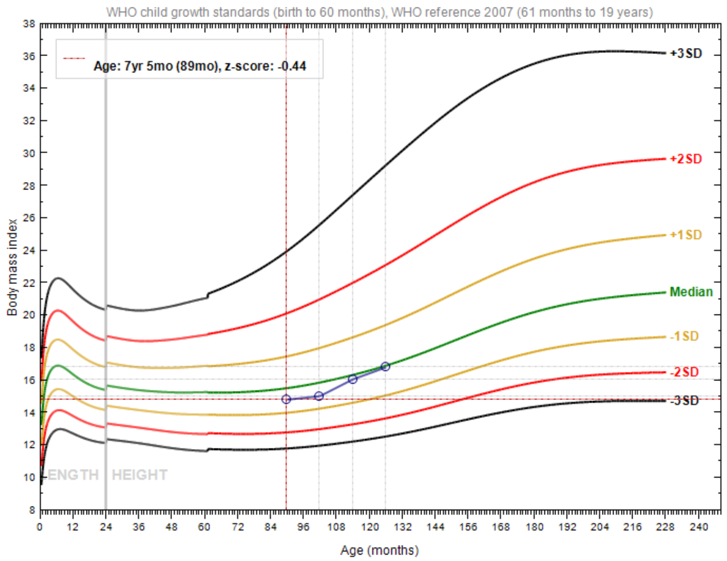
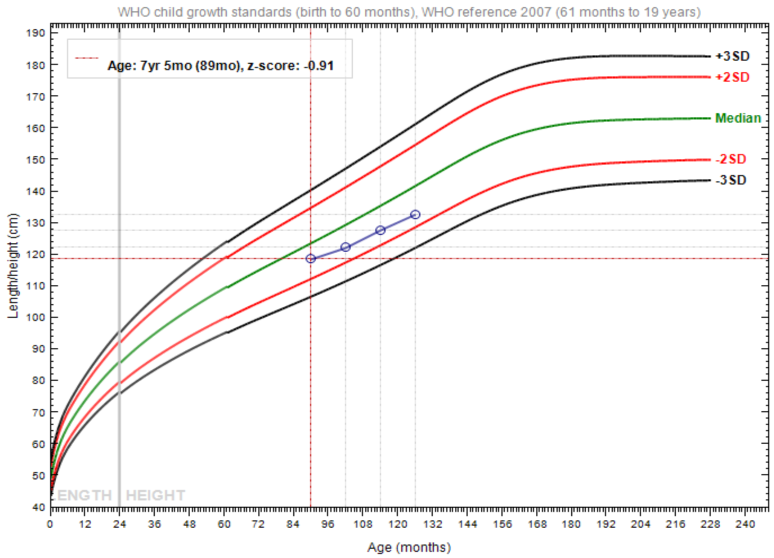


Figure 6.10

Ub662 four visits BMI-for-age percentile



Figures 6.9 and 6.10 show subject UB662 being within the normal range of the BMI-for-age of the WHO reference.

6.2.1.2 VAL children

VAL children were randomly selected to give further examples of individual assessment using WHO Reference 2007. Subjects who were measured on four occasions were selected to show the suitability of AnthroPlus software in monitoring longitudinal data.

WHO recommended the default classification system used to present child nutritional status to be that of z-scores or standard deviation (SD) scores, mainly because it includes the extreme ends of the distribution and allow derivation of means and SDs of z-scores and percentiles. If age is unknown the software derives only the BMI value. If weight is missing the software can only derive HAZ and HAP. If height is missing the software derives WAZ and WAP only. If a child has oedema the software derives HAZ and HAP only. AnthroPlus results are given in different colour codes that depicts the z-score range.

Figure 6.11

Val421 Four visits WFA percentile

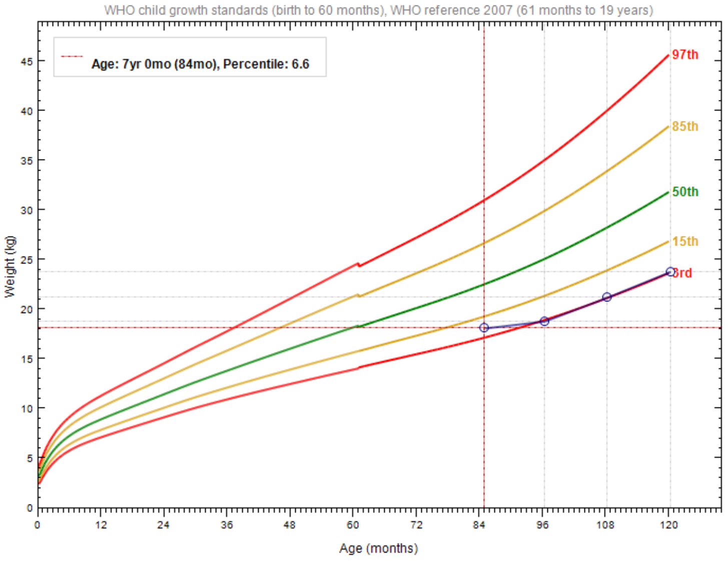
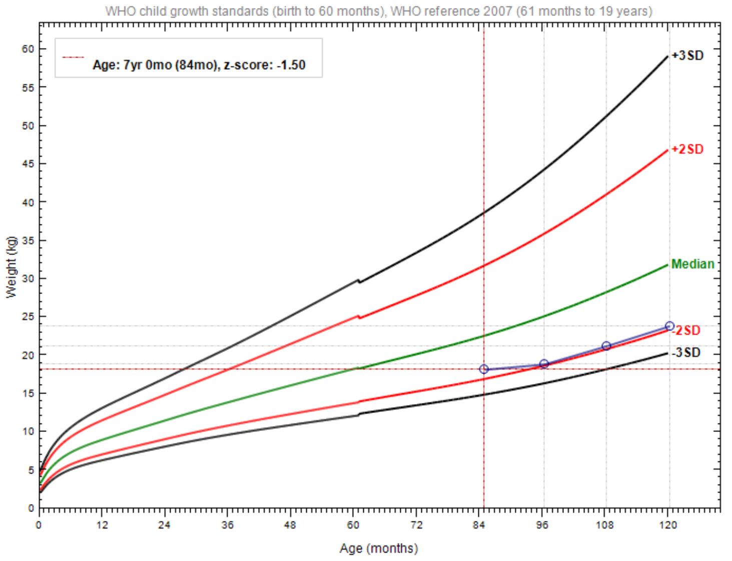


Figure 6.12

Val421 four visits WFAZ



The above figures assess the Val421 individual in terms of weight-for-age. VAL421 subject is bordering on being underweight at -2SD and at 3rd percentile on more than three occasions. This child is underweight for age and at risk and would need referral for further examination or nutritional intervention.

Figure 6.13

Val421 four visits HFA percentile

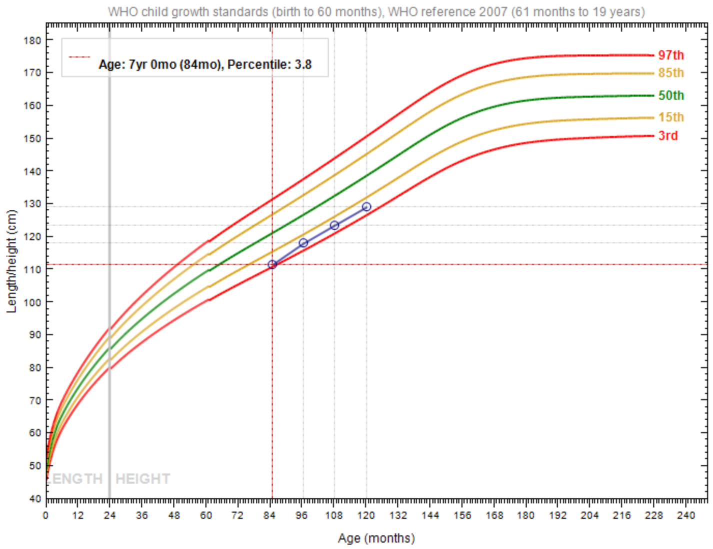
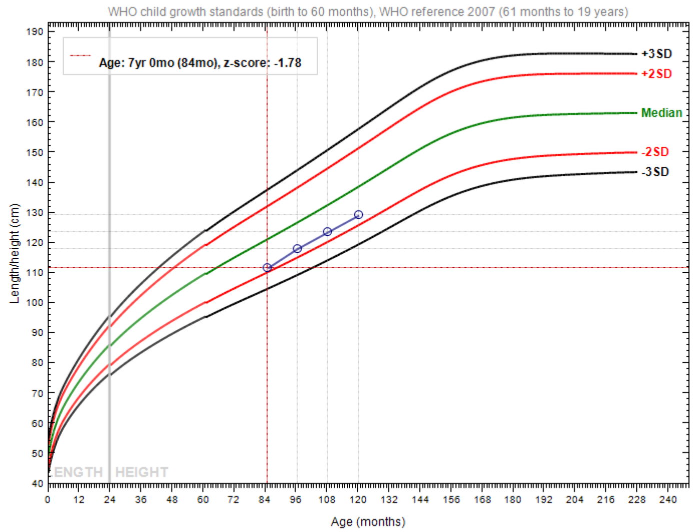


Figure 6.14

Val421 four visits HFAZ percentile



Although the VAL421 subject is short for age using the WHO Reference percentile between the 3rd and the 15h percentile the Z-score falls between the -2SD and the median which is normal. This child is at risk and may require follow up. The z-score line of the child is steady on the edge of the -2 line indicating a possible adaptation or chronic effects.

Figure 6.15

Val421 four visits BMI-for-age Z-score

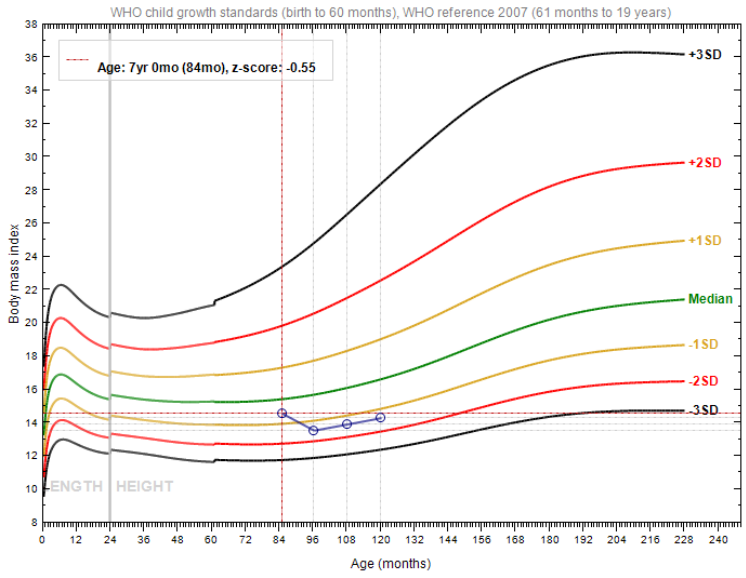
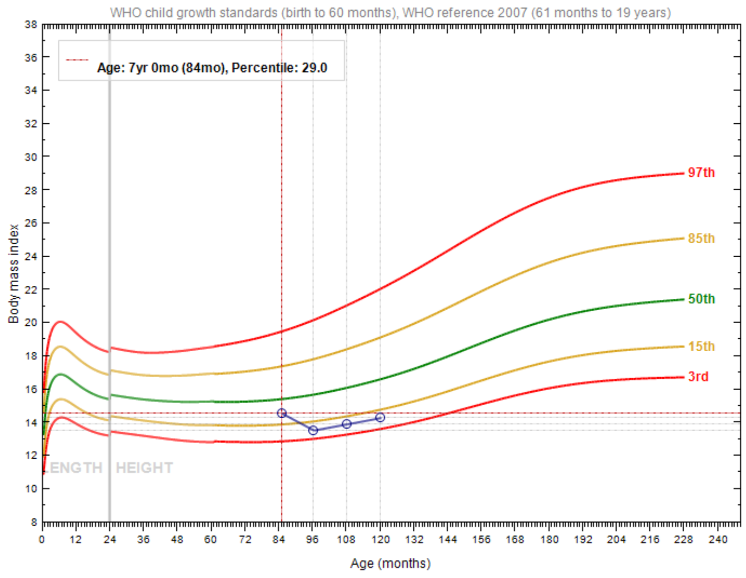


Figure 6.16

Val421 four visits BMI-for-age percentile



The BMI-for-age cut-off points are <-2SD for thinness and <-3SD for severe thinness. Val421 subject is not thin but shows a steady weight for height z-score line falling within the normal range as compared to the WHO reference but closer to the cut-of point. A longer longitudinal study becomes imperative to follow up these type of children.

6.3.1 Reports

6.3.1.1 Generation of reports using AnthroPlus Software

6.3.1.1.1 Individual Reports

Table 6.1
Example of an individual assessment report from AnthroPlus software

First name:	val03
Last name:	4visits
Date of birth:	########
Male	

Results:

No.	Date of visit	Observer ID	Wt (kg)	Oedema (y/n)	Is recumbent (y/n)	Ln/ht (cm)	Age	Age (months)	WAZ	HAZ	BAZ
1	########	user-PC\KGAMPHE	22.1	n	n	122.6	8yr 3mo	99.7	-1.24	-1.1	-0.81
2	########	user-PC\KGAMPHE	22.7	n	n	126.4	9yr 3mo	111.1	-1.68	-1.24	-1.4
3	########	user-PC\KGAMPHE	25.1	n	n	130.5	10yr 3mo	123.1		-1.33	-1.21
4	########	user-PC\KGAMPHE	26.6	n	n	134.3	11yr 3mo	135		-1.51	-1.5

z-scores are based on WHO standards (birth to 60 months) and WHO reference 2007 (61 months to 19 years).

WAZ was not generated beyond 10 years as per the WHO Reference 2007 requirements and explanation

Table 6.2
UBOMBO boys: Height-for-age z-scores (HFAZ) and prevalence per age

Age groups		N	Height-for-age (%)				
Years	Months		< -3SD(95% CI)	< -2SD (95% CI)		Mean	SD
Total (0-19)	(0-228)	777	3.3"(1.9%, 5.9%)"	19.4	"(15.2%, 24.5%)"	-1.08	1.11
Total (5-9)	(61-119)	134	3"(0.9%, 9.6%)"	11.2	"(5.8%, 20.6%)"	-0.6	1.25
Total (10-14)	(120-179)	314	4.8"(2.4%, 9.4%)"	24.2	"(17.1%, 33.1%)"	-1.16	1.22
Total (15-19)	(180-228)	329	2.1"(0.8%, 5.8%)"	18.2	"(12.6%, 25.6%)"	-1.21	0.85
				6 – 18 years			
6	(72-83)	29	3.4"(0.4%, 23%)"	10.3	"(3.1%, 29.1%)"	-0.64	1.35
7	(84-95)	23	0"(-, -)"	8.7	"(1.9%, 31.4%)"	-0.47	1.25
8	(96-107)	34	2.9"(0.4%, 19.8%)"	11.8	"(4.3%, 28.6%)"	-0.6	1.25
9	(108-119)	46	4.3"(1%, 16.7%)"	13	"(5.7%, 27%)"	-0.61	1.26
10	(120-131)	41	2.4"(0.3%, 16.7%)"	14.6	"(6.4%, 30%)"	-0.85	1.17
11	(132-143)	57	3.5"(0.8%, 13.6%)"	14	"(6.9%, 26.4%)"	-0.84	1.21
12	(144-155)	67	3"(0.7%, 11.8%)"	22.4	"(12.3%, 37.2%)"	-0.98	1.16
13	(156-167)	72	5.6"(2%, 14.5%)"	25	"(14.6%, 39.4%)"	-1.23	1.23
14	(168-179)	77	7.8"(3.4%, 16.9%)"	37.7	"(25.2%, 52.1%)"	-1.66	1.13
15	(180-191)	87	3.4"(1.1%, 10.6%)"	27.6	"(17.2%, 41.1%)"	-1.45	0.91
16	(192-203)	85	2.4"(0.6%, 9.4%)"	22.4	"(12.8%, 36.2%)"	-1.31	0.85
17	(204-215)	89	2.2"(0.5%, 9%)"	10.1	"(4.5%, 21.1%)"	-1	0.77
18	(216-227)	65	0"(-, -)"	12.3	"(5.1%, 26.8%)"	-1.06	0.82

Prevalence rates and age groups of UB boys that are <-2SD and <-3SD and their percentages as compared to the WHO reference; the 13 and 14 year olds are severely stunted at 5.6% and 7.8% respectively. 3.3% of the total UB boys are severely stunted with the mean of -1.08 and SD(1.11). The most affected age group are the 14 year old with the prevalence of 7.8%(3.4%,16.9%) at 95% CI.

Table 6.3
Ubombo boys: Weight-for-age z-scores (WFAZ)

Age groups		N	Weight-for-age** (%)			
Years	**Months**		**< -3SD(95% CI)**	**< -2SD (95% CI)**	**Mean**	**SD**
Total (0-19)	**(0-228)**	**140**	**1.4"(0.2%, 9.7%)"**	**8.6"(3.8%, 18.1%)"**	**-0.66**	**1.02**
Total (5-9)	**(61-119)**	**134**	**1.5"(0.2%, 10.2%)"**	**7.5"(3.5%, 15.2%)"**	**-0.62**	**1.01**
Total (10-14)	**(120-179)**	**6**	**0"(-, -)"**	**33.3"(4.2%, 85.1%)"**	**-1.51**	**1.08**
				6 – 10 years		
6	**(72-83)**	**29**	**0"(-, -)"**	**3.4"(0.4%, 23%)"**	**-0.45**	**1.07**
7	**(84-95)**	**23**	**0"(-, -)"**	**0"(-, -)"**	**-0.48**	**0.89**
8	**(96-107)**	**34**	**2.9"(0.4%, 19.8%)"**	**8.8"(2.7%, 25.2%)"**	**-0.7**	**1.01**
9	**(108-119)**	**46**	**2.2"(0.3%, 14.9%)"**	**13"(5.7%, 27%)"**	**-0.75**	**1.05**
10	**(120-131)**	**6**	**0"(-, -)"**	**33.3"(4.2%, 85.1%)"**	**-1.51**	**1.08**

Table 6.3 shows prevalence rates of underweight (<-2SD) and severely underweight children (<-3SD) and their confidence intervals per age from 6 to 10 years. The most severely underweight UB boys are those at ages 8 and 9 (2.9% (0.4%,19.8%) 95% CI and 2.2%(0.3%,14.9%)95% CI respectively.

**) Weight-for-age reference data are not available beyond age 10 because this indicator does not distinguish between height and body mass in an age period where many children are experiencing the pubertal growth spurt and may appear as having excess weight (by weight-for-age) when in fact they are just tall.

-) There are no 95% CI's for prevalence (p) ≤ 0.00005 or ≥ 0.99995

Table 6.3
Ubombo boys: BMI-for-age z-scores (BAZ) Total sample

Age groups		**N**	**BMI-for-age (%)**						
Years	**Months**		**< -3SD(95% CI)**	**< -2SD(95% CI)**	**> +1SD (95% CI)**	**> +2SD(95% CI)**	**> +3SD(95% CI)**	**Mean**	**SD**
Total (0-19)	**(0-228)**	**777**	**0.3"(0%, 1.8%)"**	**2.7"(1.5%, 5%)"**	**0.9"(0.4%, 2.1%)"**	**0.1"(0%, 0.9%)"**	**0"(-, -)"**	**-0.64**	**0.74**
Total (5-9)	**(61-119)**	**134**	**0"(-, -)"**	**0.7"(0.1%, 5.2%)"**	**1.5"(0.4%, 5.9%)"**	**0"(-, -)"**	**0"(-, -)"**	**-0.35**	**0.72**
Total (10-14)	**(120-179)**	**314**	**0.6"(0.1%, 4.5%)"**	**4.1"(1.8%, 9.2%)"**	**1"(0.3%, 3%)"**	**0.3"(0%, 2.3%)"**	**0"(-, -)"**	**-0.78**	**0.75**
Total (15-19)	**(180-228)**	**329**	**0"(-, -)"**	**2.1"(0.8%, 5.7%)"**	**0.6"(0.1%, 4.2%)"**	**0"(-, -)"**	**0"(-, -)"**	**-0.62**	**0.71**

Table 6.3 is the total sample of all Ubombo boys from 6 to 18.99 years and their BMI-for-age prevalence rates. The 10-14 year olds indicates that 0.6% are severely wasted while 4.1% are wasted. 1% (0.3%,3%)95% CI of these are at risk for overweight and 0.3% (0%,2.3) are overweight but none were obese.

Table 6.4
Ubombo boys 6-18.99 years: Age by age BMAZ

Age groups		N	BMI-for-age (%)						
Years	Months		< -3SD(95% CI)	< -2SD(95% CI)	> +1SD (95% CI)	> +2SD(95% CI)	> +3SD(95% CI)	Mean	SD
6	(72-83)	29	0"(-, -)"	0"(-, -)"	6.9"(1.6%, 25.4%)"	0"(-, -)"	0"(-, -)"	-0.03	0.77
7	(84-95)	23	0"(-, -)"	0"(-, -)"	0"(-, -)"	0"(-, -)"	0"(-, -)"	-0.24	0.63
8	(96-107)	34	0"(-, -)"	0"(-, -)"	0"(-, -)"	0"(-, -)"	0"(-, -)"	-0.45	0.68
9	(108-119)	46	0"(-, -)"	2.2"(0.3%, 14.9%)"	0"(-, -)"	0"(-, -)"	0"(-, -)"	-0.54	0.69
10	(120-131)	41	0"(-, -)"	0"(-, -)"	2.4"(0.3%, 16.7%)"	0"(-, -)"	0"(-, -)"	-0.46	0.68
11	(132-143)	57	0"(-, -)"	3.5"(0.8%, 13.6%)"	1.8"(0.2%, 12.2%)"	0"(-, -)"	0"(-, -)"	-0.66	0.77
12	(144-155)	67	0"(-, -)"	3"(0.7%, 11.8%)"	0"(-, -)"	0"(-, -)"	0"(-, -)"	-0.75	0.66
13	(156-167)	72	1.4"(0.2%, 9.8%)"	6.9"(2.4%, 18.5%)"	0"(-, -)"	0"(-, -)"	0"(-, -)"	-0.91	0.69
14	(168-179)	77	1.3"(0.2%, 9.2%)"	5.2"(1.5%, 16.4%)"	1.3"(0.2%, 9.2%)"	1.3"(0.2%, 9.2%)"	0"(-, -)"	-0.95	0.83
15	(180-191)	87	0"(-, -)"	4.6"(1.3%, 14.6%)"	0"(-, -)"	0"(-, -)"	0"(-, -)"	-0.91	0.75
16	(192-203)	85	0"(-, -)"	1.2"(0.2%, 8.4%)"	2.4"(0.3%, 15.7%)"	0"(-, -)"	0"(-, -)"	-0.71	0.72
17	(204-215)	89	0"(-, -)"	0"(-, -)"	0"(-, -)"	0"(-, -)"	0"(-, -)"	-0.43	0.59
18	(216-227)	65	0"(-, -)"	3.1"(0.4%, 20.2%)"	0"(-, -)"	0"(-, -)"	0(-, -)"	-0.39	0.65

This is the breakdown of UB boys by age showing their BMI-for-age. The 13 and 14 year old UB boys are 1.4% (0.2%,9.8%)95% CI and 1.3% (0.2%,9.2%)95% CI wasted respectively and 1.3% (0.2%,9.2%)95% CI was overweight while 1.3%(0.2%,9.2%)95% CI are at risk of being overweight.

Table 6.5
Ubombo girls: Height-for-age z-scores (HAZ) Totals

Age groups		N	Length/height-for-age (%)			
Years	Months		< -3SD(95% CI)	< -2SD(95% CI)	Mean	SD
Total (0-19)	(0-228)	1126	2.2"(1.2%, 4.1%)"	9.1"(6.5%, 12.6%)"	-0.66	1.11
Total (5-9)	(61-119)	191	2.1"(0.4%, 9.5%)"	6.3"(2.8%, 13.5%)"	-0.43	1.17
Total (10-14)	(120-179)	628	3"(1.5%, 5.9%)"	12.1"(8.2%, 17.4%)"	-0.81	1.13
Total (15-19)	(180-228)	306	0.7"(0.2%, 2.6%)"	4.9"(2.4%, 9.8%)"	-0.51	0.97

Table 6.5 shows total subjects from Ubombo girl's height-for-age prevalence rates. The children are too short for age and stunted. Height-for-age <-2SD are prevalent at all ages and most severe between the ages 10-14 years being 3%(1.5%,5.9%)95% CI severely stunted and 12.1% (8.2%,17.4%)95% CI were stunted.

Table 6.6
Ubombo girls: HFAZ (6 – 18.99 years)

Age groups		N	Length/height-for-age (%)			
Years	**Months**		**< -3SD(95% CI)**	**< -2SD(95% CI)**	**Mean**	**SD**
6	(72-83)	18	0"(-, -)"	0"(-, -)"	-0.08	0.83
7	(84-95)	36	2.8"(0.4%, 18.7%)"	5.6"(1.3%, 20.8%)"	-0.37	1.09
8	(96-107)	49	2"(0.3%, 14%)"	8.2"(3%, 20.5%)"	-0.39	1.35
9	(108-119)	85	2.4"(0.6%, 9.2%)"	7.1"(3.1%, 15.2%)"	-0.59	1.13
10	(120-131)	108	1.9"(0.4%, 7.4%)"	10.2"(5.1%, 19.4%)"	-0.77	1.03
11	(132-143)	138	5.1"(2.4%, 10.5%)"	16.7"(10.4%, 25.7%)"	-0.9	1.3
12	(144-155)	118	4.2"(1.7%, 10%)"	14.4"(8.3%, 23.8%)"	-0.8	1.23
13	(156-167)	135	1.5"(0.4%, 5.9%)"	11.9"(6.4%, 21%)"	-0.76	1.05
14	(168-179)	129	2.3"(0.7%, 7.2%)"	7"(3.3%, 14%)"	-0.79	0.99
15	(180-191)	103	1"(0.1%, 6.9%)"	3.9"(1.4%, 10.2%)"	-0.63	0.93
16	(192-203)	107	0"(-, -)"	3.7"(1.4%, 9.9%)"	-0.51	0.91
17	(204-215)	64	1.6"(0.2%, 11.2%)"	7.8"(2.7%, 20.8%)"	-0.48	1.07
18	(216-227)	28	0"(-, -)"	7.1"(1.5%, 28.3%)"	-0.23	1.17

Table 6.6 show UB girls at all the ages except the 6 year olds to be at risk in terms of the number of short for age and stunted children i.e. UB girls falling below the <-2SD and <-3SD HFA of the WHO reference. The 11 and 12 year olds are 5.1% (2.4%,10.5%)95% CI and 4.2%(1.7%,10%)95% CI with the mean:sd of -0.9:1.3 and -0.8:1.23 severely stunted respectively, while 16.7% of the 11 year olds and 14.4 % of the 12 year olds are stunted.

Table 6.7
Ubombo girls: Weight-for-age (WFAZ) 6-10 years

Age groups		N	Weight-for-age** (%)				
Years	Months		< -3SD(95% CI)	< -2SD(95% CI)		Mean	SD
Total (0-19)	(0-228)	204	1.5"(0.2%, 10%)"	5.9	"(2.6%, 12.7%)"	-0.38	1.05
Total (5-9)	(61-119)	192	1.6"(0.2%, 10.6%)"	6.3	"(2.8%, 13.5%)"	-0.38	1.05
Total (10-14)	(120-179)	11	0"(-, -)"	0	"(-, -)"	-0.58	0.94
				6-10 years			
6	(72-83)	18	0"(-, -)"	0	"(-, -)"	0.14	0.98
7	(84-95)	37	2.7"(0.3%, 18.3%)"	5.4	"(1.3%, 20.3%)"	-0.21	1.19
8	(96-107)	49	2"(0.3%, 14%)"	10.2	"(4.2%, 22.9%)"	-0.41	1.17
9	(108-119)	85	1.2"(0.2%, 8.3%)"	5.9	"(2.4%, 13.7%)"	-0.58	0.89
10	(120-131)	11	0"(-, -)"	0	"(-, -)"	-0.58	0.94

Underweight and severely underweight UB girls showing WFA<-2SD and <-3SD are those at 7(2.7%), 8(2%) and 9(1.2%) years of age, and other children within the same age range are underweight .

**) Weight-for-age reference data are not available beyond age 10 because this indicator does not distinguish between height and body mass in an age period where many children are experiencing the pubertal growth spurt and may appear as having excess weight (by weight-for-age) when in fact they are just tall.

-) There are no 95% CI's for prevalence (p) ≤ 0.00005 or ≥ 0.99995

Table 6.8
Ubombo girls: BMI-for-age (BAZ) total samples

Age groups		N	BMI-for-age (%)						
Years	**Months**		**< -3SD(95% CI)**	**< -2SD(95% CI)**	**> +1SD(95% CI)**	**> +2SD(95% CI)**	**> +3SD(95% CI)**	**Mean**	**SD**
Total (0-19)	**(0-228)**	**1128**	**0"(-, -)"**	**1.8"(1%, 3.2%)"**	**7.1"(5.1%, 9.8%)"**	**1.2"(0.6%, 2.1%)"**	**2"(0%, 0.7%)"**	**-0.13**	**0.85**
Total (5-9)	**(61-119)**	**192**	**0"(-, -)"**	**0"(-, -)"**	**5.2"(2.7%, 9.8%)"**	**2.6"(1.1%, 6%)"**	**1"(0.3%, 4.1%)"**	**-0.2**	**0.82**
Total (10-14)	**(120-179)**	**628**	**0"(-, -)"**	**2.9"(1.6%, 5.1%)"**	**4.3"(2.5%, 7.4%)"**	**0.8"(0.3%, 2.2%)"**	**0"(-, -)"**	**-0.28**	**0.83**
Total (15-19)	**(180-228)**	**307**	**0"(-, -)"**	**0.7"(0.2%, 2.6%)"**	**14"(8.5%, 22.1%)"**	**1"(0.2%, 4.1%)"**	**0"(-, -)"**	**0.22**	**0.82**

Total Ubombo girls assessed for BMI-for-age shows extreme cases of obesity BAZ (%) >+2SD, 2%(0%,0.7%) of all the UB girls are obese and 1%(0.3%,4.1%) of 6-9 year olds are obese and 2.6%(1.1%,6%) of them were overweight. other age groups are also overweight at different percentage levels. None of the UB girls are severely wasted (<-3SD) while about 2.9% (1.6%,5.1%) of the 10-14 year olds and 0.7% of the 15-19 year olds are wasted and thin for age.

Table 6.9
Ubombo girls: BMAZ 6-18 years

Age groups		N	BMI-for-age (%)						
Years	Months		< -3SD(95% CI)	< -2SD(95% CI)	> +1SD(95% CI)	> +2SD(95% CI)	> +3SD(95% CI)	Mean	SD
6	(72-83)	18	0"(-, -)"	0"(-, -)"	16.7"(4.8%, 44.1%)"	11.1"(2.4%, 38.9%)"	5.6"(0.6%, 35.5%)"	0.19	1.19
7	(84-95)	37	0"(-, -)"	0"(-, -)"	5.4"(1.3%, 20.3%)"	5.4"(1.3%, 20.3%)"	2.7"(0.3%, 18.3%)"	-0.12	0.98
8	(96-107)	49	0"(-, -)"	0"(-, -)"	6.1"(1.9%, 18%)"	2"(0.3%, 14%)"	0"(-, -)"	-0.23	0.81
9	(108-119)	85	0"(-, -)"	0"(-, -)"	2.4"(0.6%, 9.2%)"	0"(-, -)"	0"(-, -)"	-0.32	0.63
10	(120-131)	108	0"(-, -)"	0.9"(0.1%, 6.6%)"	7.4"(3.1%, 16.5%)"	3.7"(1.4%, 9.7%)"	0"(-, -)"	-0.31	0.88
11	(132-143)	138	0"(-, -)"	6.5"(2.8%, 14.4%)"	4.3"(1.5%, 11.7%)"	0.7"(0.1%, 5.1%)"	0"(-, -)"	-0.45	0.89
12	(144-155)	118	0"(-, -)"	4.2"(1.5%, 11.6%)"	3.4"(1%, 10.9%)"	0"(-, -)"	0"(-, -)"	-0.39	0.87
13	(156-167)	135	0"(-, -)"	1.5"(0.4%, 5.9%)"	3"(0.9%, 9.6%)"	0"(-, -)"	0"(-, -)"	-0.25	0.76
14	(168-179)	129	0"(-, -)"	0.8"(0.1%, 5.5%)"	3.9"(1.6%, 9.2%)"	0"(-, -)"	0"(-, -)"	-0.02	0.68
15	(180-191)	104	0"(-, -)"	1.9"(0.5%, 7.7%)"	12.5"(5.9%, 24.5%)"	0"(-, -)"	0 "(-, -)"	-0.02	0.91
16	(192-203)	107	0"(-, -)"	0"(-, -)"	13.1"(6.4%, 24.8%)"	0"(-, -)"	0"(-, -)"	0.28	0.67
17	(204-215)	64	0"(-, -)"	0"(-, -)"	15.6"(6.8%, 32.1%)"	0"(-, -)"	0"(-, -)"	0.4	0.8
18	(216-227)	28	0"(-, -)"	0"(-, -)"	21.4"(6.9%, 49.9%)"	10.7"(2.1%, 40%)"	0"(-, -)"	0.51	0.82

Table 6.9 denotes the highest frequency of obesity >+3SD at 6 years (5.6%) and at 7 years 2.7%, and overweight children (>+2SD) prevalence at the following age groups 8(2%), 10 (3.7%) and 11(0.7%) years while UB girls at all age groups are at risk of overweight. Other wasted children are shown at the ages 10(0.9%), 11(6.5%), 12(4.2%), 13(1.5%), 14(0.8%) and 15(1.9%) years.

Table 6.10
VAL boys and girls: WFAZ 6-10 years

Age groups		N	Weight-for-age** (%)			
Years	Months		< -3SD (95% CI)	< -2SD (95% CI)	Mean	SD
Total (0-19)	(0-228)	313	2.6"(1.2%, 5.5%)"	12.1"(8.2%, 17.6%)"	-0.99	1.04
Total (5-9)	(61-119)	308	2.3"(1%, 5.2%)"	11.7"(7.8%, 17.1%)"	-0.97	1.03
Total (10-14)	(120-179)	4	25"(0.5%, 95.9%)"	50"(2.5%, 97.5%)"	-2.29	0.58
Total (15-19)	(180-228)	0				
			6 - 18.99 years			
6	(72-83)	46	0"(-, -)"	8.7"(3.2%, 21.7%)"	-0.69	1.11
7	(84-95)	73	1.4"(0.2%, 9.5%)"	11"(5.5%, 20.7%)"	-0.91	1.04
8	(96-107)	84	2.4"(0.6%, 9.3%)"	13.1"(7.4%, 22.2%)"	-1.04	1.02
9	(108-119)	98	4.1"(1.5%, 10.5%)"	13.3"(7.8%, 21.7%)"	-1.13	1.02
10	(120-131)	4	25"(0.5%, 95.9%)"	50"(2.5%, 97.5%)"	-2.29	0.58

**) Weight-for-age reference data are not available beyond age 10 because this indicator does not distinguish between height and body mass in an age period where many children are experiencing the pubertal growth spurt and may appear as having excess weight (by weight-for-age) when in fact they are just tall.

-) There are no 95% CI's for prevalence (p) ≤ 0.00005 or ≥ 0.99995

Table 6.11
VAL boys and girls: HFAZ scores 6-18 years

Age groups		N	height-for-age (%)			
Years	**Months**		**< -3SD(95% CI)**	**< -2SD(95% CI)**	**Mean**	**SD**
Total (0-19)	**(0-228)**	**953**	**4.2"(2.7%, 6.6%)"**	**18.9"(15.3%, 23.1%)"**	**-1.05**	**1.15**
Total (5-9)	**(61-119)**	**308**	**1"(0.3%, 3%)"**	**11"(7.3%, 16.3%)"**	**-0.7**	**1.2**
Total (10-14)	**(120-179)**	**428**	**6.8"(3.9%, 11.4%)"**	**25.2"(19.7%, 31.7%)"**	**-1.32**	**1.11**
Total (15-19)	**(180-228)**	**216**	**3.7"(1.5%, 9%)"**	**17.6"(11.2%, 26.5%)"**	**-1.03**	**1.04**
			6 – 18.99 years			
6	**(72-83)**	**46**	**2.2"(0.3%, 14.8%)"**	**13"(5.8%, 26.8%)"**	**-0.41**	**1.59**
7	**(84-95)**	**73**	**0"(-, -)"**	**13.7"(7.4%, 23.9%)"**	**-0.7**	**1.17**
8	**(96-107)**	**84**	**1.2"(0.2%, 8.3%)"**	**10.7"(5.6%, 19.6%)"**	**-0.8**	**1.19**
9	**(108-119)**	**98**	**1"(0.1%, 7.1%)"**	**9.2"(4.8%, 16.9%)"**	**-0.78**	**1.03**
10	**(120-131)**	**92**	**6.5"(2.9%, 14%)"**	**18.5"(11.7%, 27.9%)"**	**-1.06**	**1.15**
11	**(132-143)**	**87**	**6.9"(3.1%, 14.8%)"**	**19.5"(12.3%, 29.6%)"**	**-1.2**	**1.04**
12	**(144-155)**	**80**	**10"(5%, 19%)"**	**27.5"(18.7%, 38.5%)"**	**-1.45**	**1.11**
13	**(156-167)**	**84**	**7.1"(3.2%, 15.2%)"**	**35.7"(26%, 46.8%)"**	**-1.56**	**1.14**
14	**(168-179)**	**85**	**3.5"(1.1%, 10.6%)"**	**25.9"(17.5%, 36.5%)"**	**-1.37**	**1.04**
15	**(180-191)**	**75**	**6.7"(2.7%, 15.3%)"**	**22.7"(14.4%, 33.8%)"**	**-1.24**	**1.13**
16	**(192-203)**	**62**	**4.8"(1.5%, 14.4%)"**	**19.4"(11.1%, 31.6%)"**	**-1.18**	**0.98**
17	**(204-215)**	**47**	**0"(-, -)"**	**14.9"(7.1%, 28.7%)"**	**-0.81**	**0.95**
18	**(216-227)**	**27**	**0"(-, -)"**	**7.4"(1.7%, 27.2%)"**	**-0.54**	**0.91**

The above table depicts VAL boys to be severely stunted 4.2%(2.7%,6.6%)95% CI and stunted 18.9%(15.3%,23.1%)95% CI with the mean(-1.05) and SD(1.15). The most affected age group is the 11 year olds 10%(5%,19%)95% CI as severely stunted and 27.5%(18.7%,38.5%) stunted.

Table 6.12
VAL boys: height-for-age z-scores 6-18 years

Age groups		N	Length/height-for-age (%)			
Years	Months		% < -3SD(95% CI)	% < -2SD(95% CI)	Mean	SD
Total (0-19)	(0-228)	449	3.3(1.7%, 6.6%)	22(16.7%, 28.5%)	-1.21	1.07
Total (5-9)	(61-119)	149	2(0.6%, 6.2%)	12.8(7.1%, 21.9%)	-0.79	1.23
Total (10-14)	(120-179)	200	2.5(0.9%, 7%)	23(15.9%, 32.1%)	-1.36	0.88
Total (15-19)	(180-228)	99	7.1(2.6%, 18%)	34.3(21.7%, 49.7%)	-1.53	1
			6-18 years			
6	(72-83)	24	4.2(0.5%, 27.4%)	16.7(5.9%, 38.9%)	-0.4	1.82
7	(84-95)	33	0(-, -)	15.2(6.1%, 32.9%)	-0.82	1.12
8	(96-107)	40	2.5(0.3%, 17%)	17.5(8.3%, 33.3%)	-1.04	1.2
9	(108-119)	49	2(0.3%, 14%)	6.1(1.9%, 18%)	-0.82	0.91
10	(120-131)	40	2.5(0.3%, 17%)	5(1.2%, 18.9%)	-0.92	0.92
11	(132-143)	38	2.6(0.3%, 18%)	7.9(2.4%, 23%)	-1.05	0.83
12	(144-155)	41	2.4(0.3%, 16.6%)	19.5(9.8%, 35.2%)	-1.41	0.77
13	(156-167)	39	0(-, -)	41(26.3%, 57.6%)	-1.63	0.72
14	(168-179)	42	4.8(1.1%, 18%)	40.5(26.3%, 56.4%)	-1.75	0.88
15	(180-191)	34	11.8(4.3%, 28.6%)	38.2(23%, 56.2%)	-1.77	1.01
16	(192-203)	30	10(3%, 28.6%)	40(22.8%, 60%)	-1.78	0.91
17	(204-215)	20	0(-, -)	35(16.4%, 59.6%)	-1.34	0.95
18	(216-227)	12	0(-, -)	16.7(3.3%, 54.3%)	-0.81	0.92
19	(228-228)	3	0(-, -)	0(-, -)	-0.51	0.55

The HFAZ scores for VAL boys and girls indicated that they are 3.3%(1.7%,6.6%)95% CI severely stunted and 22%(16.7%,28.5% stunted at the mean(-1.21) and SD(1.07), with the most severely stunted being the 14 year olds 4.8%(1.1%,18%) 95% CI and 40.5%26.3,56.4%) stunted.

Table 6.13
VAL boys and girls: BMI-for-age z-scores 6-18 years

Age groups		N	BMI-for-age (%)						
Years	**Months**		**< -3SD(95% CI)**	**< -2SD(95% CI)**	**> +1SD(95% CI)**	**> +2SD(95% CI)**	**> +3SD(95% CI)**	**Mean**	**SD**
Total (0-19)	**(0-228)**	**951**	**3(1.8%,5.2%)**	**16.5(13.2,20.4)**	**1.1(0.5%,2.2%)**	**0.1(0%,0.7%)**	**0(-,-0)**	**-1.14**	**0.93**
Total (5-9)	**(61-119)**	**307**	**0(-,-)**	**5.9(3.4%, 10%)**	**2.3(1%, 5.2%)**	**0.3(0%, 2.3%)**	**0(-,-)**	**-0.78**	**0.8**
Total (10-14)	**(120-179)**	**427**	**5.4 (3%, 9.6%)**	**26(20.4%, 32.5%)**	**0.5(0.1%, 1.9%)**	**0(-,-0)**	**0(-,-0)**	**-1.46**	**0.91**
Total (15-19)	**(180-228)**	**216**	**2.8 (1%, 7.7%)**	**13(8.2%, 19.8%)**	**0.5(0.1%, 3.3%)**	**0(-,-0)**	**0(-,-0)**	**-1.0**	**0.93**

The above table depicts the VAL children to be severely wasted 3%(1.8%,5.2%)95% CI and 16.5%(13.2,20.4%)95% CI wasted at the mean(-1.44 and SD(0.93). The 10-14 year old are mostly affected 5.4%(3%,9.6%)95% CI severely wasted and 26%(20.4%,32.5%)95% CI wasted.

Table 6.14
VAL boys: Weight-for-age (WFAZ) 6-10 years

Age groups		N	Weight-for-age** (%)			
Years	Months		% < -3SD(95% CI)	% < -2SD(95% CI)	Mean	SD
Total (0-19)	(0-228)	151	3.3(1.1%, 9.2%)	12.6(7.1%, 21.3%)	-1.1	0.98
Total (5-9)	(61-119)	149	3.4(1.2%, 9.3%)	12.8(7.2%, 21.6%)	-1.1	0.98
Total (10-14)	(120-179)	1	0(., .)	0(., .)	-1.91	0
Total (15-19)	(180-228)	0				
				6-10 years		
6	(72-83)	24	0(-, -)	8.3(1.9%, 30.2%)	-0.72	1.22
7	(84-95)	33	3(0.4%, 20.4%)	12.1(4.3%, 29.5%)	-1.09	0.91
8	(96-107)	40	5(1.2%, 18.9%)	17.5(8.3%, 33.3%)	-1.29	0.98
9	(108-119)	49	4.1(1%, 15.6%)	12.2(5.4%, 25.3%)	-1.19	0.86
10	(120-131)	1	0(., .)	0(., .)	-1.91	0

**) Weight-for-age reference data are not available beyond age 10 because this indicator does not distinguish between height and body mass in an age period where many children are experiencing the pubertal growth spurt and may appear as having excess weight (by weight-for-age) when in fact they are just tall.

-) There are no 95% CI's for prevalence (p) ≤ 0.00005 or ≥ 0.99995

Table 6.15
VAL boys: BMI-for-age 6-10 years

Age groups		N	BMI-for-age (%)						
Years	**Months**		**< -3SD(95% CI)**	**< -2SD(95% CI)**	**> +1SD(95% CI)**	**> +2SD(95% CI)**	**> +3SD(95% CI)**	**Mean**	**SD**
6	(72-83)	24	0(-, -)	4.2(0.5%, 27.4%)	0(-, -)	0(-, -)	0(-, -)	-0.65	0.84
7	(84-95)	33	0(-, -)	9.1(2.8%, 26%)	0(-, -)	0(-, -)	0(-, -)	-0.83	0.7
8	(96-107)	40	0(-, -)	7.5(2.4%, 21.2%)	2.5(0.3,17)	0(-, -)	0(-, -)	-0.92	0.75
9	(108-119)	48	0(-, -)	2.1(0.3%, 14.2%)	0(-, -)	0(-, -)	0(-, -)	-0.94	0.58
10	(120-131)	39	5.1(1.2,19.3)	7.7(2.4%, 22.2%)	0(-, -)	0(-, -)	0(-, -)	-1.22	0.74
11	(132-143)	38	7.9(1.7,29.4)	18.4(8.1%,36.7%)	0(-, -)	0(-, -)	0(-, -)	-1.36	0.94
12	(144-155)	41	4.9(1.1,18.4)	22(11.5%, 37.8%)	0(-, -)	0(-, -)	0(-, -)	-1.54	0.8
13	(156-167)	39	2.6(0.3%, 17.4)	20.5(10.3%, 36.8%)	0(-, -)	0(-, -)	0(-, -)	-1.39	0.83
14	(168-179)	42	4.8(1.1%, 18%)	28.6(16.6%, 44.6%)	0(-, -)	0(-, -)	0(-, -)	-1.51	0.79
15	(180-191)	34	5.9(1.4%, 22%)	14.7(6%, 31.9%)	0(-, -)	0(-, -)	0(-, -)	-1.4	0.81
16	(192-203)	30	6.7(1.5%, 24.9%)	30(14.2%, 52.6%)	0(-, -)	0(-, -)	0(-, -)	-1.52	0.9
17	(204-215)	20	5(0.6%, 32.3%)	10(2.2%, 35.5%)	0(-, -)	0(-, -)	0(-, -)	-1.25	0.77
18	(216-227)	12	0(-, -)	8.3(0.8%, 50.1%)	0(-, -)	0(-, -)	0(-, -)	-1.18	0.73

**) Weight-for-age reference data are not available beyond age 10 because this indicator does not distinguish between height and body mass in an age period where many children are experiencing the pubertal growth spurt and may appear as having excess weight (by weight-for-age) when in fact they are just tall.

-) There are no 95% CI's for prevalence (p) ≤ 0.00005 or ≥ 0.99995

Table 6.16
VAL girls: HFAZ scores 6-18 years

Age groups		N	Length/height-for-age (%)			
Years	Months		< -3SD (95% CI)	< -2SD(95% CI)	Mean	SD
Total (0-19)	(0-228)	504	5(2.7%, 8.9%)	16.1(11.6%, 21.9%)	-0.91	1.2
Total (5-9)	(61-119)	159	0(-, -)	9.4(5.3%, 16.1%)	-0.61	1.17
Total (10-14)	(120-179)	228	10.5(5.7%, 18.7%)	27.2(19.2%, 36.9%)	-1.29	1.27
Total (15-19)	(180-228)	117	0.9(0.1%, 6.2%)	3.4(1.2%, 9.2%)	-0.6	0.87
				6-18 years		
6	(72-83)	22	0(-, -)	9.1(2%, 32.7%)	-0.42	1.34
7	(84-95)	40	0(-, -)	12.5(5.1%, 27.6%)	-0.6	1.21
8	(96-107)	44	0(-, -)	4.5(1.1%, 17.3%)	-0.59	1.15
9	(108-119)	49	0(-, -)	12.2(5.4%, 25.3%)	-0.74	1.15
10	(120-131)	52	9.6(3.9%, 21.6%)	28.8(17.9%, 43%)	-1.16	1.29
11	(132-143)	49	10.2(4.2%, 22.9%)	28.6(17.3%, 43.3%)	-1.32	1.17
12	(144-155)	39	17.9(8.5%, 34%)	35.9(22%, 52.6%)	-1.49	1.39
13	(156-167)	45	13.3(5.9%, 27.4%)	31.1(18.9%, 46.7%)	-1.49	1.42
14	(168-179)	43	2.3(0.3%, 15.9%)	11.6(4.7%, 25.9%)	-0.99	1.05
15	(180-191)	41	2.4(0.3%, 16.6%)	9.8(3.6%, 24.1%)	-0.8	1.05
16	(192-203)	32	0(-, -)	0(-, -)	-0.61	0.66
17	(204-215)	27	0(-, -)	0(-, -)	-0.41	0.74
18	(216-227)	15	0(-, -)	0(-, -)	-0.33	0.88

The above table depicts VAL girls as severely stunted 5%(2.7%,8.9%)95% CI and stunted 16.1%(11.6%,21.9%) 95% CI with mean(-0.91) and SD(1.2).

Table 6.17
VAL girls: Weight-for-age (WFAZ) 6-10 years

Age groups		N		Weight-for-age** (%)		
Years	**Months**		**< -3SD(95% CI)**	**< -2SD(95% CI)**	**Mean**	**SD**
Total (0-19)	**(0-228)**	**162**	**1.9(0.6%, 5.7%)**	**11.7(6.7%, 19.6%)**	**-0.89**	**1.09**
Total (5-9)	**(61-119)**	**159**	**1.3(0.3%, 5.1%)**	**10.7(6%, 18.3%)**	**-0.86**	**1.07**
Total (10-14)	**(120-179)**	**3**	**33.3(0.1%, 99.7%)**	**66.7(0.3%, 99.9%)**	**-2.41**	**0.64**
Total (15-19)	**(180-228)**	**0**				
				6-10 years		
6	**(72-83) 22**	**0**	**(-, -)**	**9.1(2%, 32.7%)**	**-0.65**	**1.01**
7	**(84-95) 40**	**0**	**(-, -)**	**10(3.6%, 24.6%)**	**-0.75**	**1.12**
8	**(96-107)**	**44**	**0(-, -)**	**9.1(3.4%, 22.2%)**	**-0.82**	**1**
9	**(108-119)**	**49**	**4.1(1%, 15.6%)**	**14.3(6.8%, 27.7%)**	**-1.07**	**1.16**
10	**(120-131)**	**3**	**33.3(0.1%, 99.7%)**	**66.7(0.3%, 99.9%)**	**-2.41**	**0.64**

**) Weight-for-age reference data are not available beyond age 10 because this indicator does not distinguish between height and body mass in an age period where many children are experiencing the pubertal growth spurt and may appear as having excess weight (by weight-for-age) when in fact they are just tall.

-) There are no 95% CI's for prevalence (p) ≤ 0.00005 or ≥ 0.99995

Table 6.18
VAL girls; BMI-for-age (WFAZ) 6-18 years

Age groups		N	BMI-for-age** (%)						
Years	Months		<-3SD(95% CI)	< -2SD(95% CI)	> +1SD(95% CI)	> +2SD(95% CI)	> +3SD(95% CI)	Mean	SD
Total (0-19)	(0-228)	504	2.8(1.2, 6.1)	18.3(13.7, 23.9)	1.8(0.8%, 3.9%)	0.2(0%, 1.4%)	0(-, -)	-1.07	1.01
Total (5-9)	(61-119)	159	0(-, -)	6.3(3%, 12.7%)	3.8(1.5%, 9.2%)	0.6(0.1%, 4.4%)	0(-, -)	-0.71	0.87
Total (10-14)	(120-179)	228	5.7(2.6, 12)	31.6(23.6, 40.8)	0.9(0.2%, 3.5%)	0(-, -)	0(-, -)	-1.51	0.98
Total (15-19)	(180-228)	117	0.9(0.1, 6.2)	8.5(4.1%, 17%)	0.9(0.1%, 6.1%)	0(-, -)	0(-, -)	-0.69	0.9
				6-18 years					
6	(72-83)	22	0(-, -)	0(-, -)	9.1(2%, 32.7%)	0(-, -)	0(-, -)	-0.59	0.9
7	(84-95)	40	0(-, -)	0(-, -)	2.5(0.3%, 17%)	2.5(0.3%, 17%)	0(-, -)	-0.55	0.85
8	(96-107)	44	0(-, -)	4.5(1.1, 17.3)	2.3(0.3%, 15.5)	0(-, -)	0(-, -)	-0.66	0.78
9	(108-119)	49	0(-, -)	16.3(8.3, 29.6)	4.1(1%, 15.6%)	0(-, -)	0(-, -)	-0.91	0.95
10	(120-131)	52	1.9(0.3, 13.2)	15.4(7.7, 28.4)	1.9(0.3, 13.2)	0(-, -)	0(-, -)	-1.16	0.94
11	(132-143)	49	6.1(1.9, 18)	30.6(18.9, 45.5)	2(0.3%, 14%)	0(-, -)	0(-, -)	-1.51	0.9
12	(144-155)	39	12.8(5.2, 28.2)	43.6(28.5, 60)	0(-, -)	0(-, -)	0(-, -)	-1.8	0.92
13	(156-167)	45	4.4(1.1, 16.9)	46.7(31.9, 62)	0(-, -)	0(-, -)	0(-, -)	-1.83	0.93
14	(168-179)	43	4.7(1.1, 17.7)	25.6(14.3, 41.4)	0(-, -)	0(-, -)	0(-, -)	-1.33	1.05
15	(180-191)	41	2.4(0.3, 16.6)	14.6(6.5, 29.7)	0(-, -)	0(-, -)	0(-, -)	-0.87	1.02
16	(192-203)	32	0(-, -) 6.3	(1.4, 23.2)	3.1(0.4%, 20.9%)	0(-, -)	0(-, -)	-0.71	0.85
17	(204-215)	27	0(-, -) 3.7	(0.5%, 24.5%)	0(-, -)	0(-, -)	0(-, -)	-0.63	0.75
18	(216-227)	15	0(-, -) 6.7	(0.7%, 41.6%)	0(-, -)	0(-, -)	0(-, -)	-0.26	0.85

***) Values are based on WHO standards (birth to 60 months) and WHO reference 2007 (61 months to 19 years).**
For each indicator all children with a plausible z-score are included in the evaluation (as defined under Survey options).
Percentages below median based on weight-dependent indicators are defined as <-3 SD or oedema, and <-2 SD or oedema. Oedema cases are excluded when deriving mean and SD of z-scores.

Table 6.19
Z-scores: VAL boys Means 6-18 years

Age (months)	WAZ	HAZ	BAZ
6(72)	-0.23	0.5	-0.91
7(84)	-1.09	-1.14	-0.52
8(96)	-1.33	-1.26	-0.77
9(108)	-0.97	-1.29	-0.25
10(120)	-1.13	-1.03	-0.78
11(132)		-0.88	-0.17
12(144)		-1.23	-1.51
13(156)		-1.87	-1.18
14(168)		-1.91	-1.91
15(180)		-2.18	-1.37
16(192)		-2.16	-1.06
17(204)		-1.32	-1.58
18(216)		-1.26	-0.92

VAL boy's z-cores were computed automatically by the AnthroPlus software. These reports were converted into Excel spread sheet and used to generate tables.

Table 6.20
Z-scores: VAL girls Means 6-18 years

Age (months)	WAZ	HAZ	BAZ
6(72)	-0.74	-0.61	-0.57
7(84)	-0.72	-0.68	-0.49
8(96)	-0.12	-0.75	0.4
9(108)	-0.82	-0.72	-0.59
10(120)	-1.24	-1.08	-0.89
11(132)		-1.33	-1.16
12(144)		-1.88	-1.38
13(156)		-1.74	-1.5
14(168)		-1.44	-1.61
15(180)		-0.85	-1.04
16(192)		-0.77	-0.76
17(204)		-0.57	-0.57
18(216)		-0.34	-0.45

VAL girls Z-core table above was generated by the conversion of the AnthroPlus report from all Val girls into an excel spreadsheet.

Table 6.21
Z-scores: UB girls Means 6-18 years

Age (months)	WAZ	HAZ	BAZ
6(72)	0.08	-0.14	0.2
7(84)	0.3	-0.03	0.4
8(96)	-0.35	-0.57	-0.05
9(108)	-0.61	-0.75	-0.27
10(120)	-0.88	-0.97	-0.48
11(132)		-0.97	-0.2
12(144)		-1.05	-0.3
13(156)		-1.44	0.49
14(168)		-0.82	-0.08
15(180)		-0.8	-0.04
16(192)		-0.67	0.1
17(204)		-0.55	0.39
18(216)		0.7	-0.4

UB girls Z-scores generated from means per age generated by AnthroPlus software of the WHO Reference 2007.

Table 6.22
Z-scores: UB boys Means 6-18 years

Age (months)	WAZ	HAZ	BAZ
6(72)	-0.67	-0.84	-0.21
7(84)	-0.34	-0.74	0.18
8(96)	-0.66	-0.71	-0.33
9(108)	-0.55	-0.63	-0.28
10(120)	-0.94	-0.68	-0.85
11(132)		-1.06	-0.44
12(144)		-0.94	-0.68
13(156)		-1.34	-0.97
14(180)		-1.81	-0.99
15(192)		-1.55	-0.85
16(204)		-1.32	-0.76
17(216)		-1.14	-0.57

Table 6.13 highlights the Z-scores of UB boys from 6-17.5 years as generated by the AnthroPlus software of the WHO Reference 2007. The comparison of the WHO and NCHS were also carried out and the prevalence's compared.

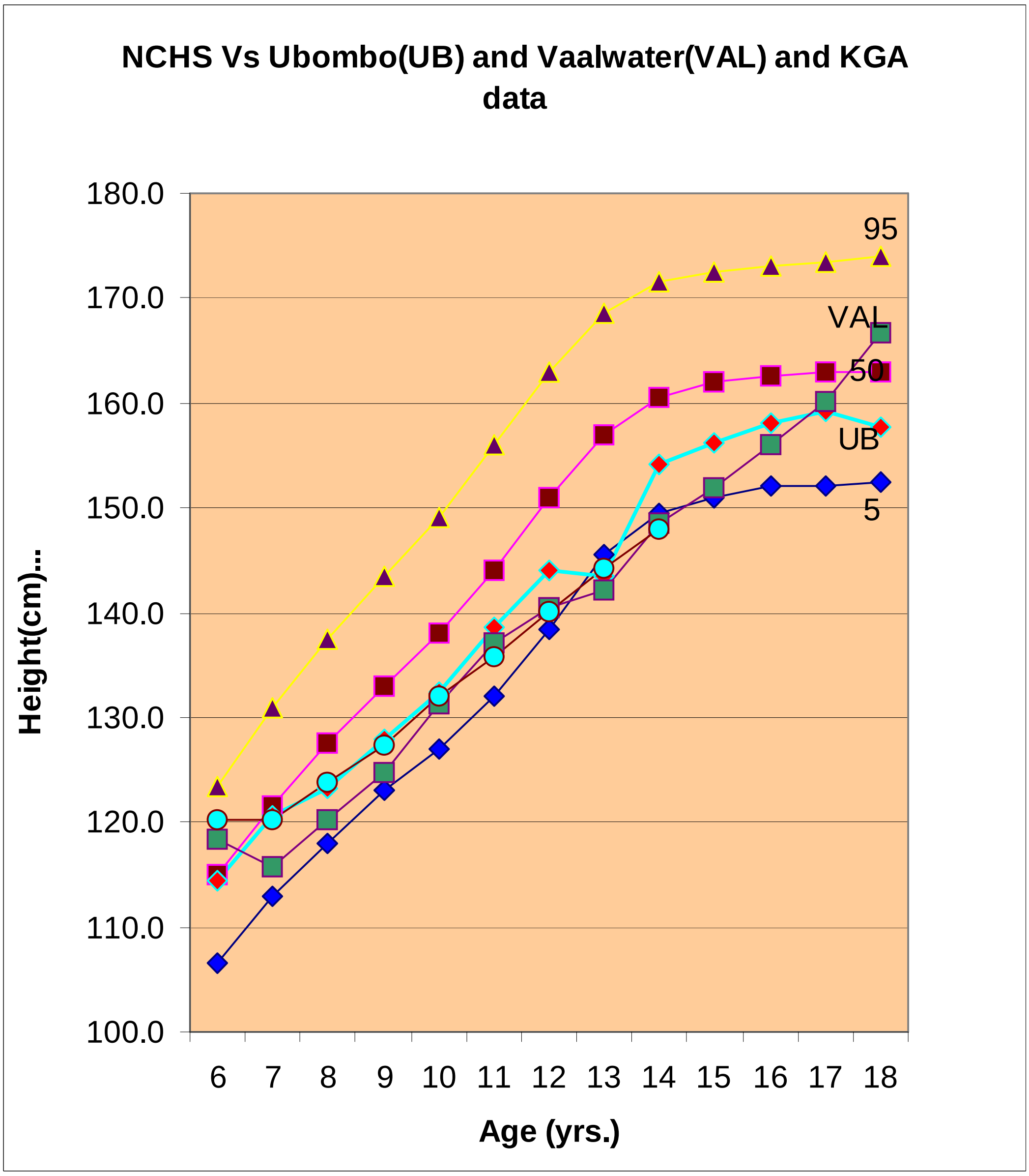
6.3.2 Comparisons: UB, VAL, KGA and NCHS: Height – Girls

The availability of the WHO Reference 2007 data allowed for the comparison to the results obtained from the NCHS centiles.

Table 6.23
Mean height measurements of Ubombo (UB) and Vaalwater (VAL) girls appraised against the NCHS measurements of girls from 6.0-18.0 years of age

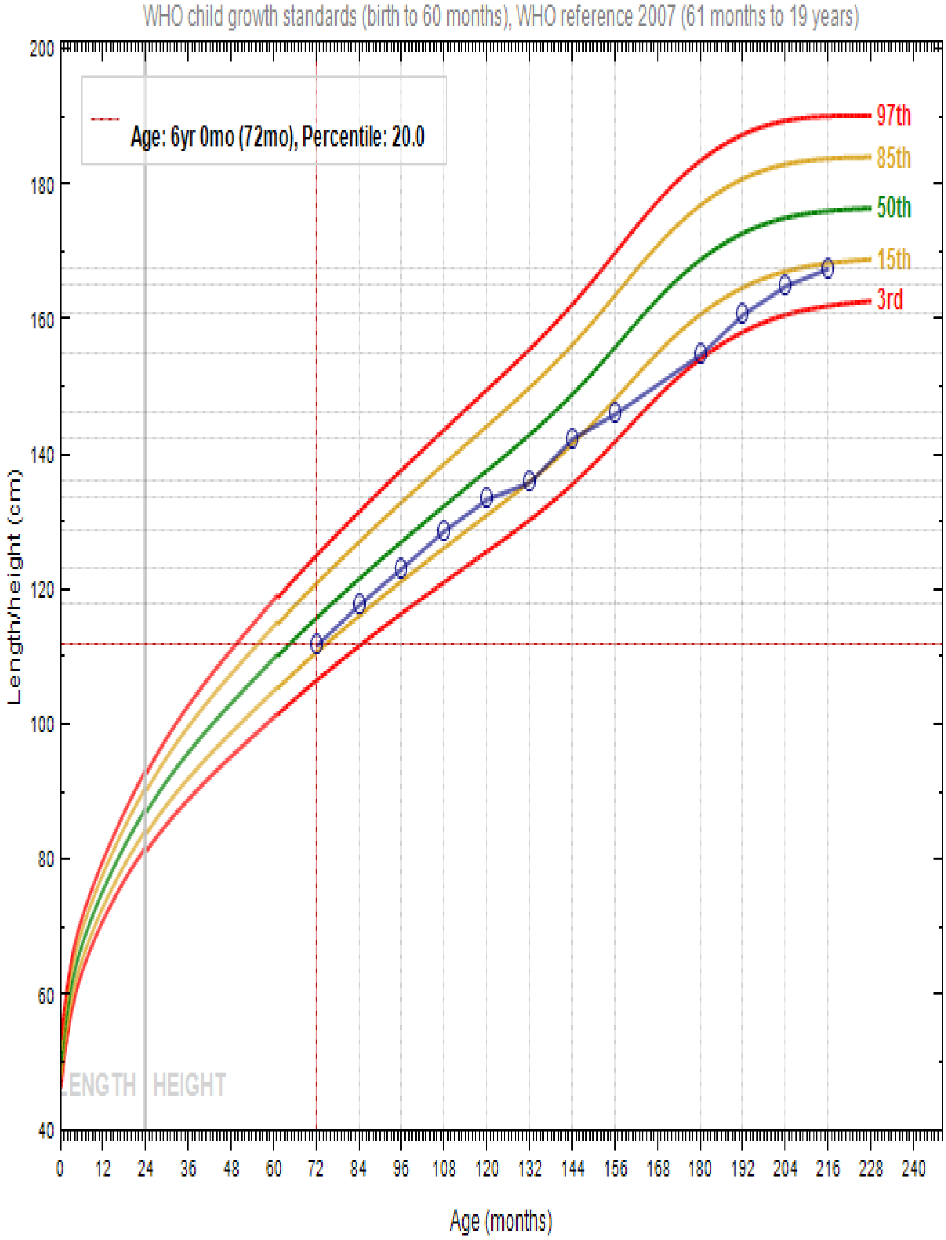
		NCHS				
Age	5	50	95	UB	VAL	KGA
6	106.5	115.0	123.5	114.4	118.43	120.30
7	113.0	121.5	131.0	120.7	115.70	120.30
8	118.0	127.5	137.5	123.2	120.17	123.72
9	123.0	133.0	143.5	127.9	124.80	127.37
10	127.0	138.0	149.0	132.4	131.20	131.95
11	132.0	144.0	156.0	138.5	137.16	135.76
12	138.5	151.0	163.0	144.1	140.40	140.07
13	145.5	157.0	168.5	143.4	142.17	144.23
14	149.5	160.5	171.5	154.1	148.53	148.20
15	151.0	162.0	172.5	156.2	151.91	
16	152.0	162.5	173.0	158.0	156.10	
17	152.0	163.0	173.5	159.2	160.21	
18	152.5	163.0	174.0	157.7	166.77	

Figure 6.17
Height measurements taken from Ubombo (UB) and Vaalwater (VAL) Girls from 6.0-18.0 years



6.3.3 Comparison to WHO Reference 2007

Figure 6.18
UB boys: Height-for-age percentile compared to WHO Reference 2007



The above figure depicts the height-for-age of UB boys and their z-scores as compared to WHO reference. The boys are within the WHO normal range between the ages 6-11 years and then they cross the 15th percentile towards the 3rd SD and towards the 15th percentile towards the age of 18 years. The children are much shorter between these age groups as compared with the NCHS estimates and graphical representation above. NCHS does not allow for the estimation of prevalence percentages.

Figure 6.19
UB girls: Height-for-age percentile compared to WHO Reference 2007

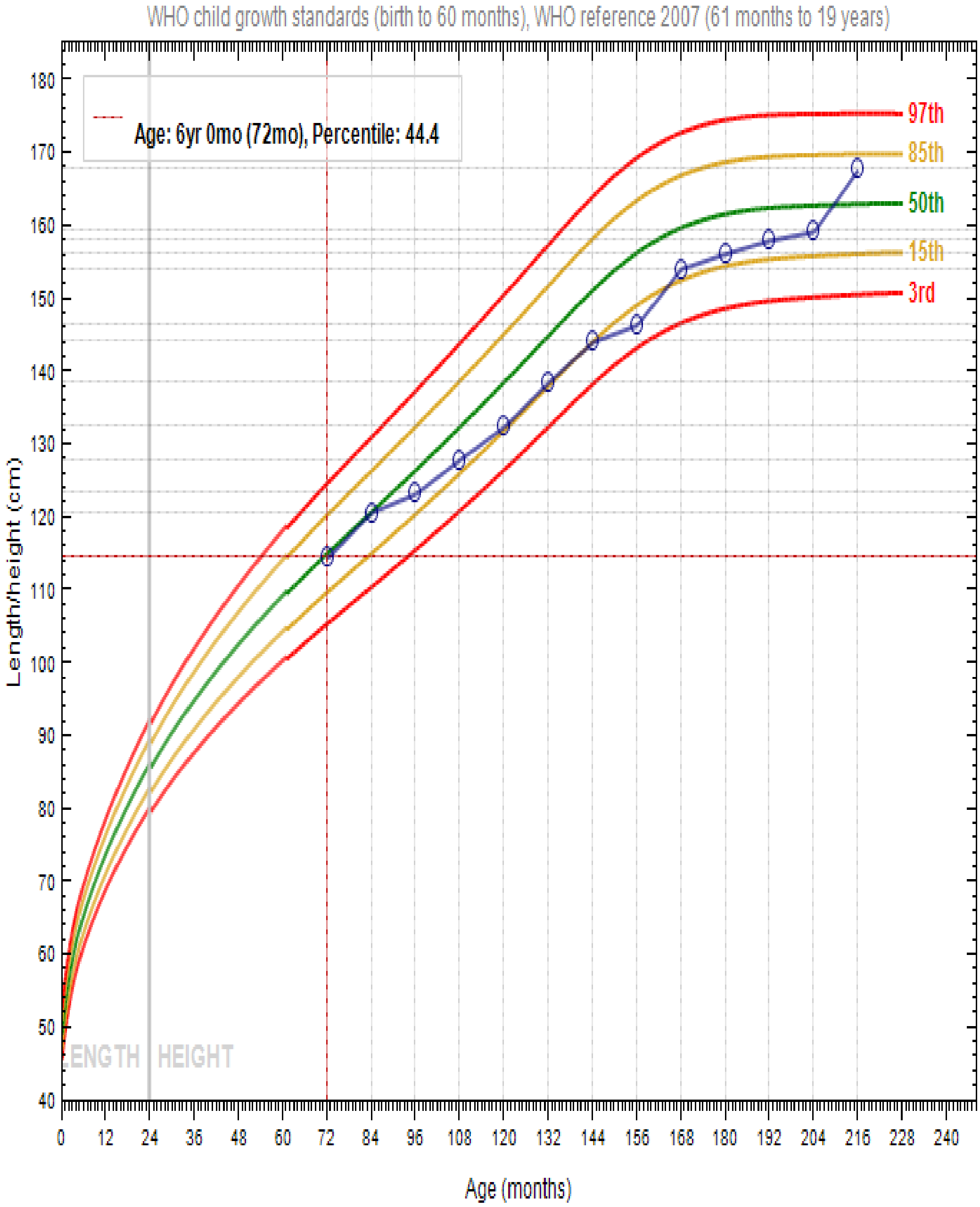
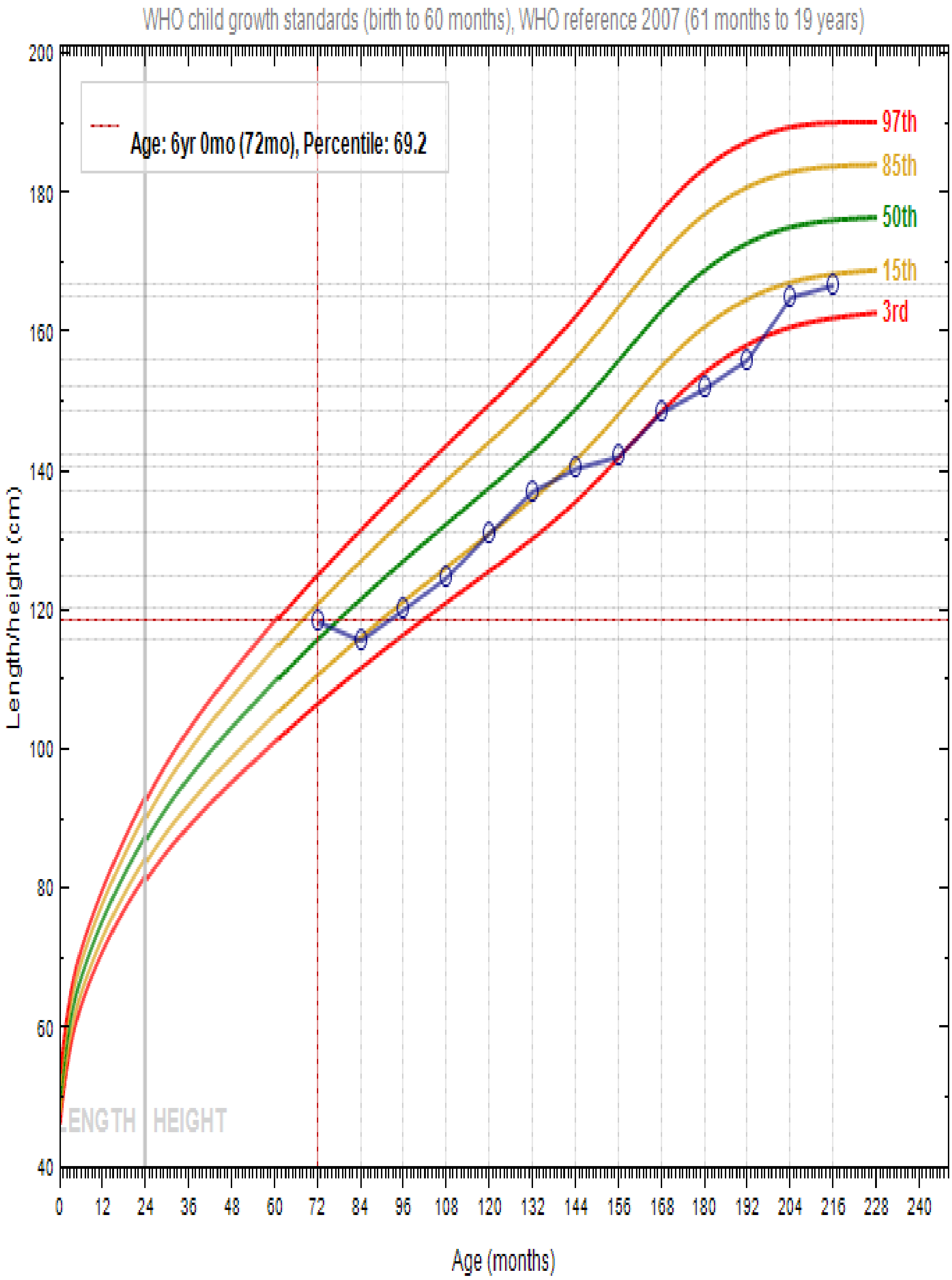


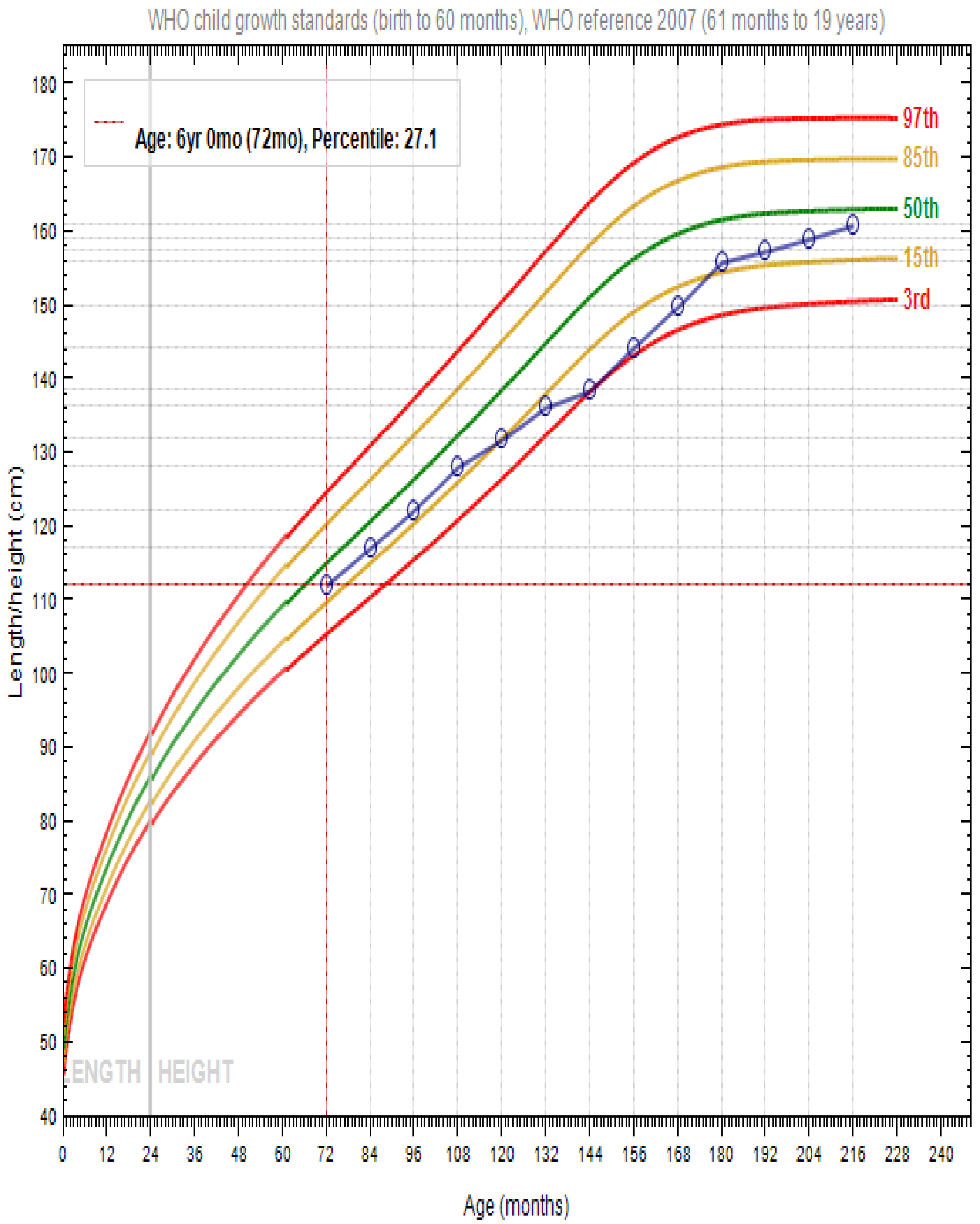
Figure 6.16 shows height-for-age for Ub girls that falls within the normal range of WHO reference from 6-18.99 years. At the age of 17 years the Ub girls catch-up with the 50th percentile of the WHO data and crosses this line at 18.99 years.

Figure 6.20
VAL boys: Height-for-age percentile compared to WHO Reference 2007



Height-for-age percentile of VAL boys falls below the 3rd percentile (stunting) at 15 and 16 years respectively but recovers at 17 and 18 years towards the 50th percentile. The boys are short for age from the age of 13, 14, 15, 16 and 17 years.

Figure 6.21
VAL girls: Height-for-age percentile compared to WHO Reference 2007



VAL girls show a trend towards the 5oth percentile of height-for-age by the age of 18.99 years. There was a sudden drop in height from 11-12 years but recovered soon after that.

Figure 6.22
UB boys: BMI-for-age percentiles compared to WHO Reference 2007

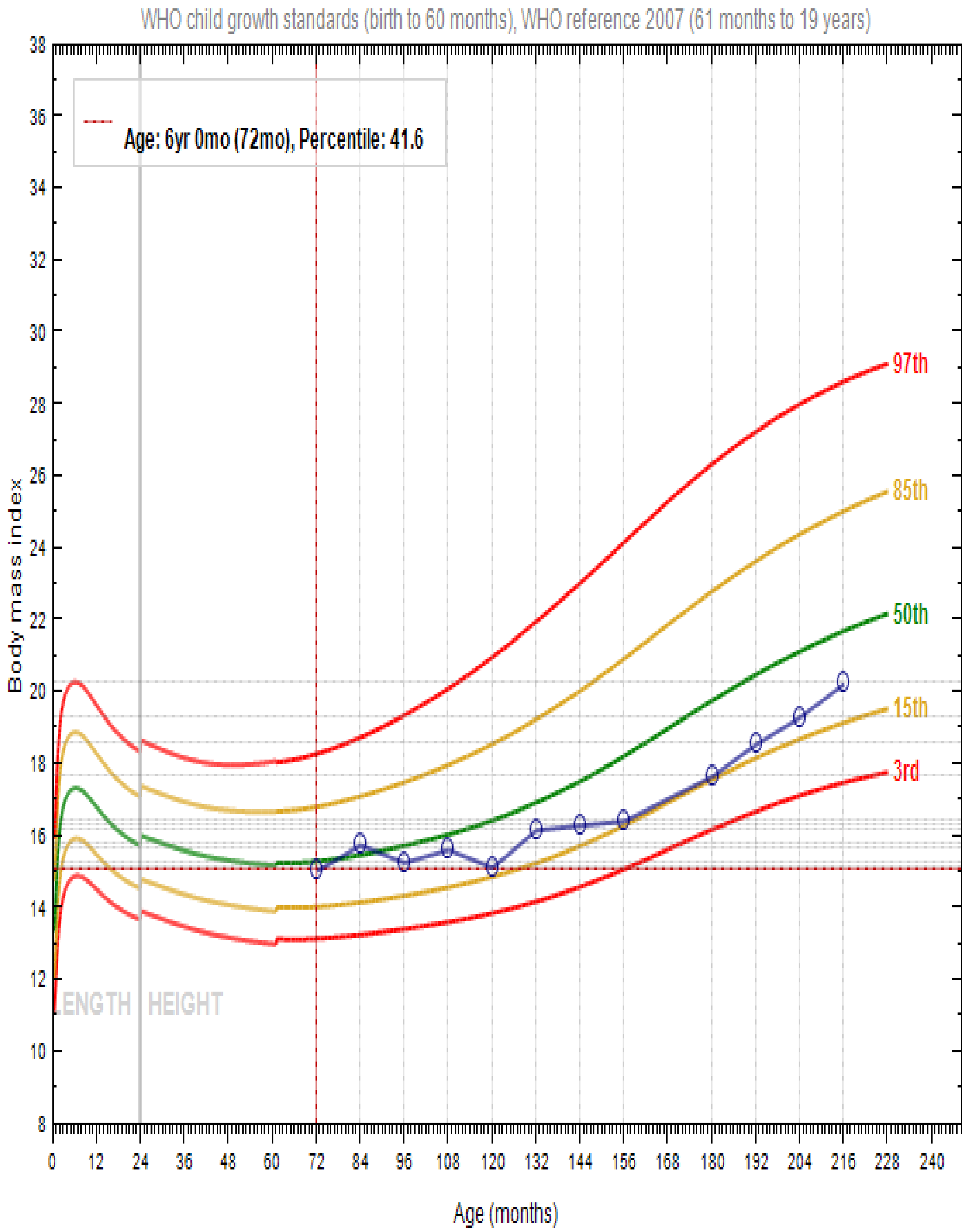
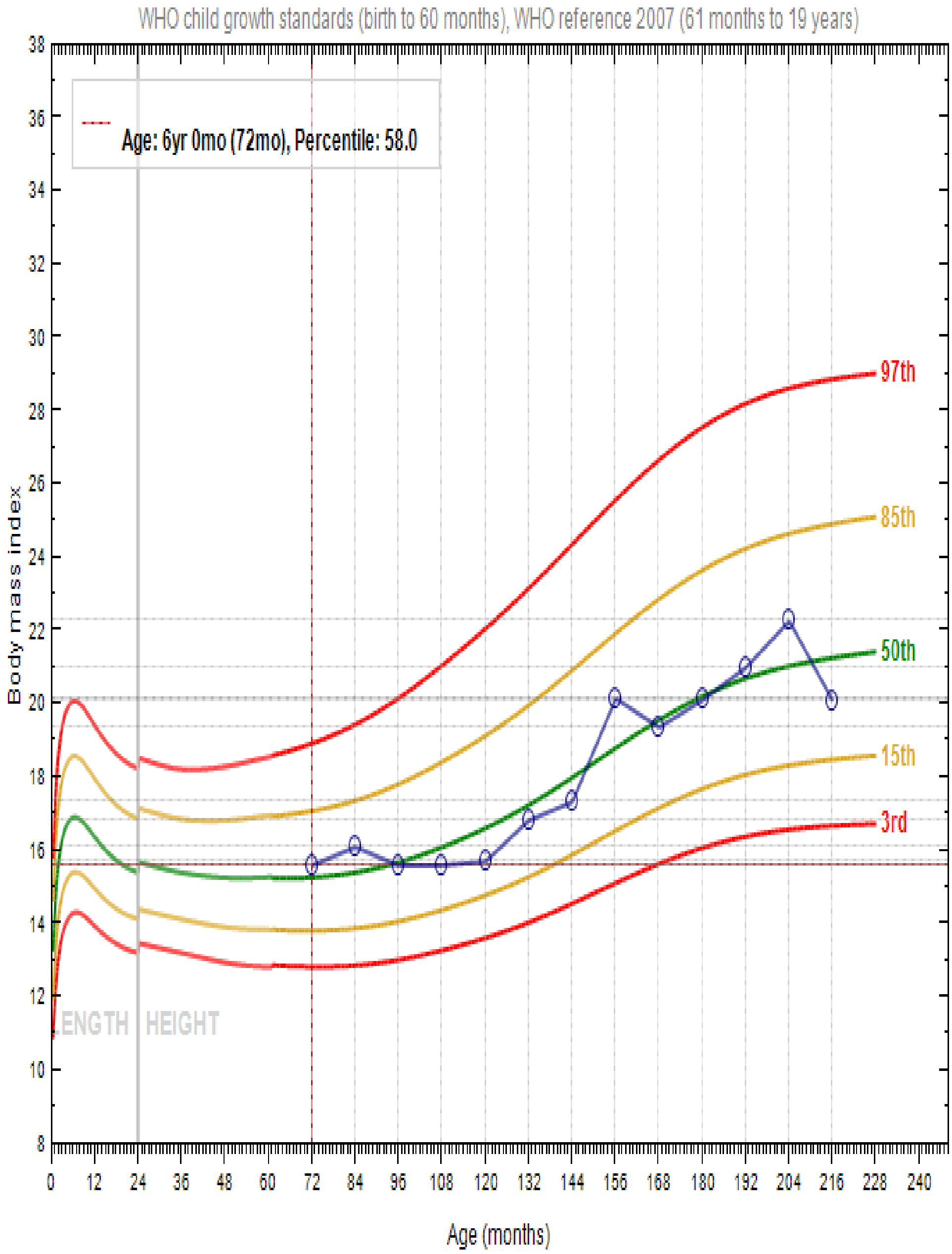


Figure 6.19 above shows that UB boys' BMI-for-age falls within the normal range of the WHO BMI-for-age Reference percentiles at all ages from 6 to 18.99 years.

Figure 6.23
UB girls: BMI-for-age compared to WHO Reference 2007



This figure depicts UB girls' BMI-for-age being along the 50th percentile of the WHO reference and at some ages being above the median.

Figure 6.24
VAL boys: BMI-for-age percentile compared to WHO Reference 2007

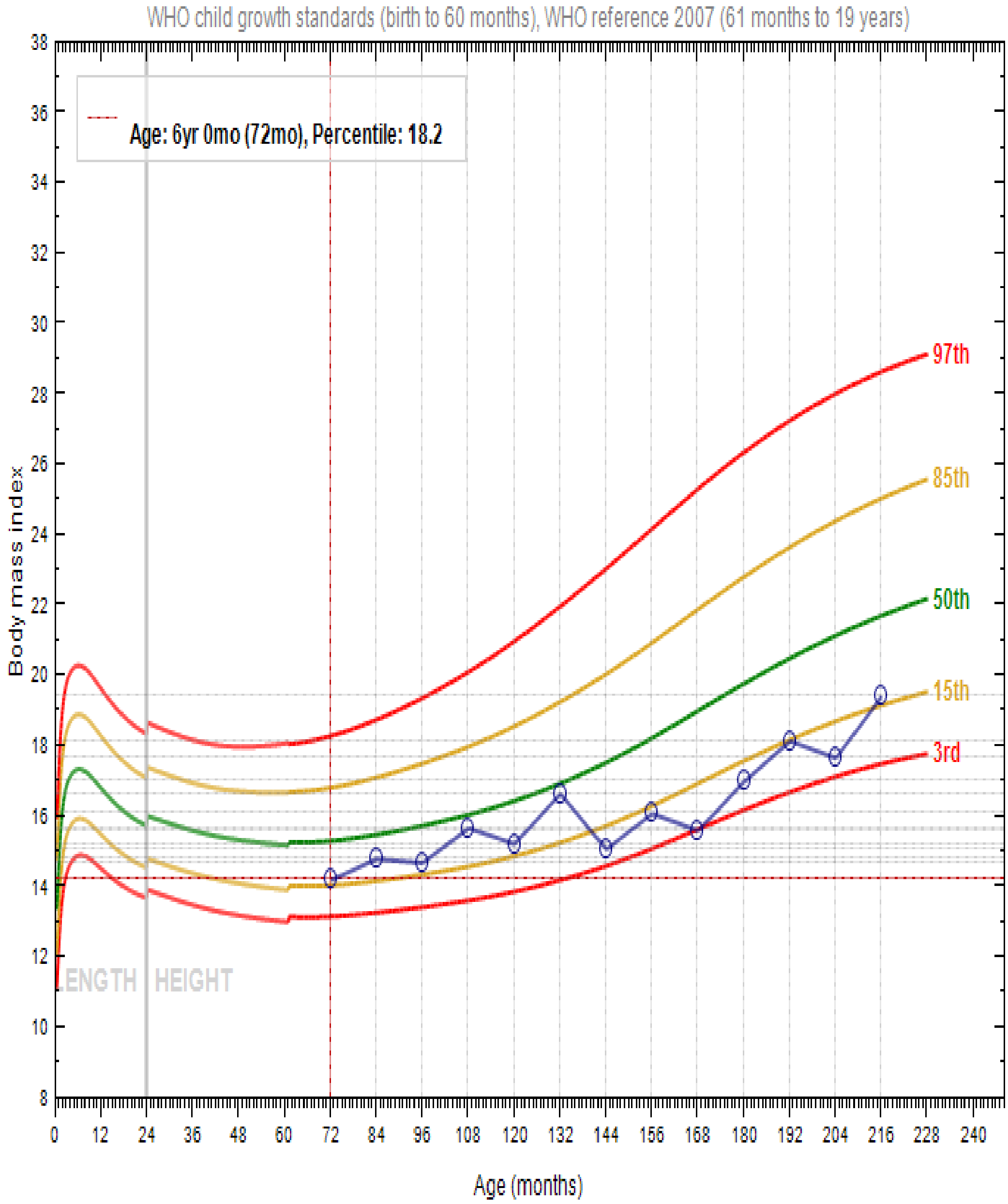
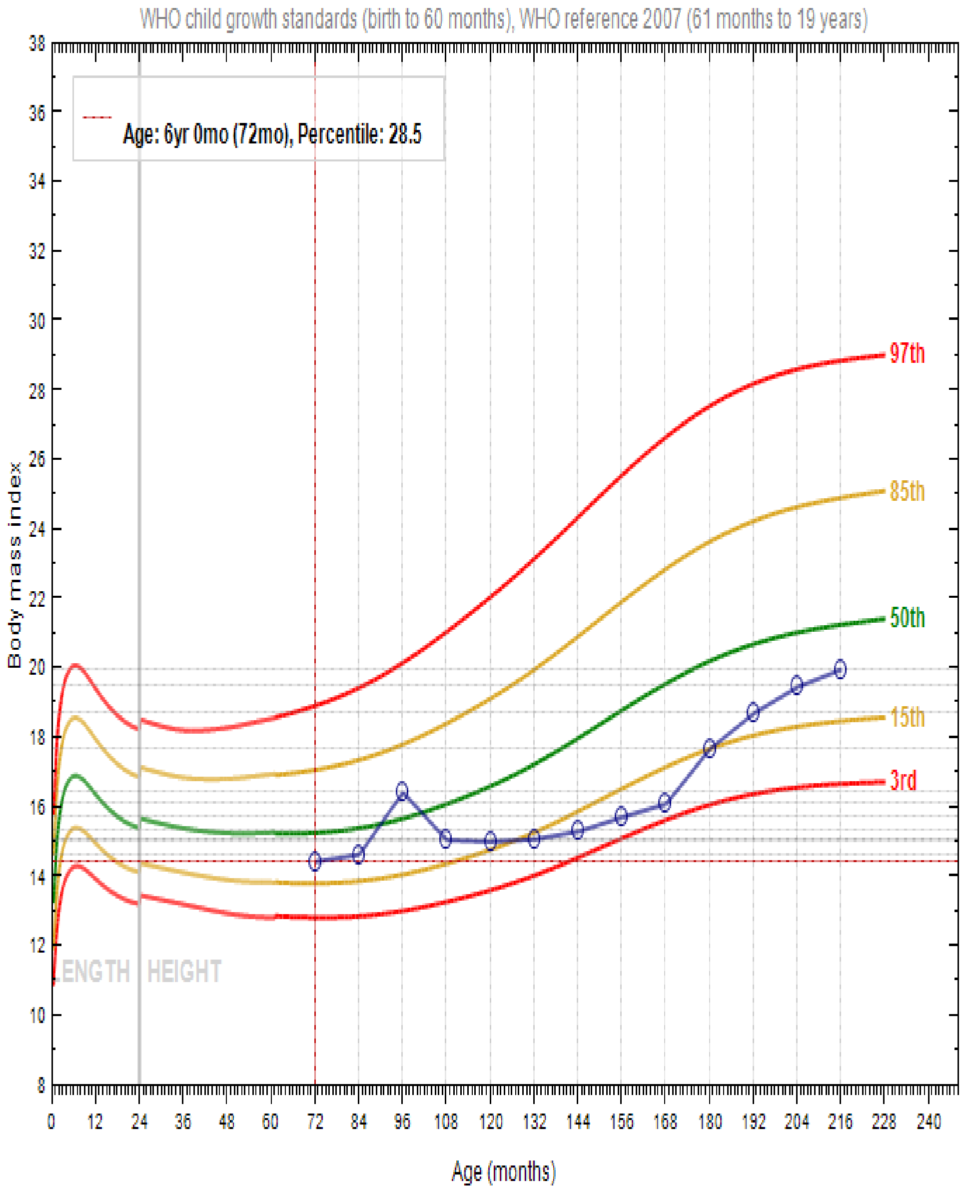


Figure 6.21 shows VAL boys BMI-for-age percentiles falling within the normal range between 50th and 15th percentile from 6-11 years and then crosses the 15th percentile from the age of 12 years up to the 18th year where the graph touches the 15th percentile away from the 3rd percentile cut-off point for thinness.

Figure 6.25
VAL girls: BMI-for-age compared to WHO reference 2007



This figure depicts VAL girls BMI-for-age shows a graph line moving towards the 50th percentile at the age of 18. Children between the ages of 10 and 14 are thin.

Table 6.24
NCHS weight data, Cameron-Kgamphe data for UB and VAL, compared to the Kgamphe (KGA) data for girls

	NCHS					
Age	5	50	95	UB	VAL	KGA
6	16.0	20.0	27.0	20.4	19.9	20.5
7	18.0	23.0	31.5	23.4	19.8	25.1
8	20.0	26.0	36.0	23.7	21.2	23.0
9	22.5	29.0	41.0	25.5	24.4	25.2
10	25.0	33.0	48.0	27.5	26.2	27.2
11	27.5	37.0	55.0	32.3	31.3	29.4
12	31.0	41.5	61.5	36.0	29.7	31.4
13	34.5	46.0	67.5	40.2	32.5	38.5
14	38.0	49.5	72.5	46.0	34.4	37.6
15	41.0	52.0	76.0	49.0	39.2	
16	43.0	54.0	78.0	52.4	44.2	
17	44.5	55.0	79.5	56.4	48.1	
18	45.0	56.0	81.0	56.5	54.0	

Figure 6.26
NCHS weight data; (Kgamphe and Cameron) (UB) and (VAL) data compared to the Kgamphe (KGA) data-Girls (Pink)

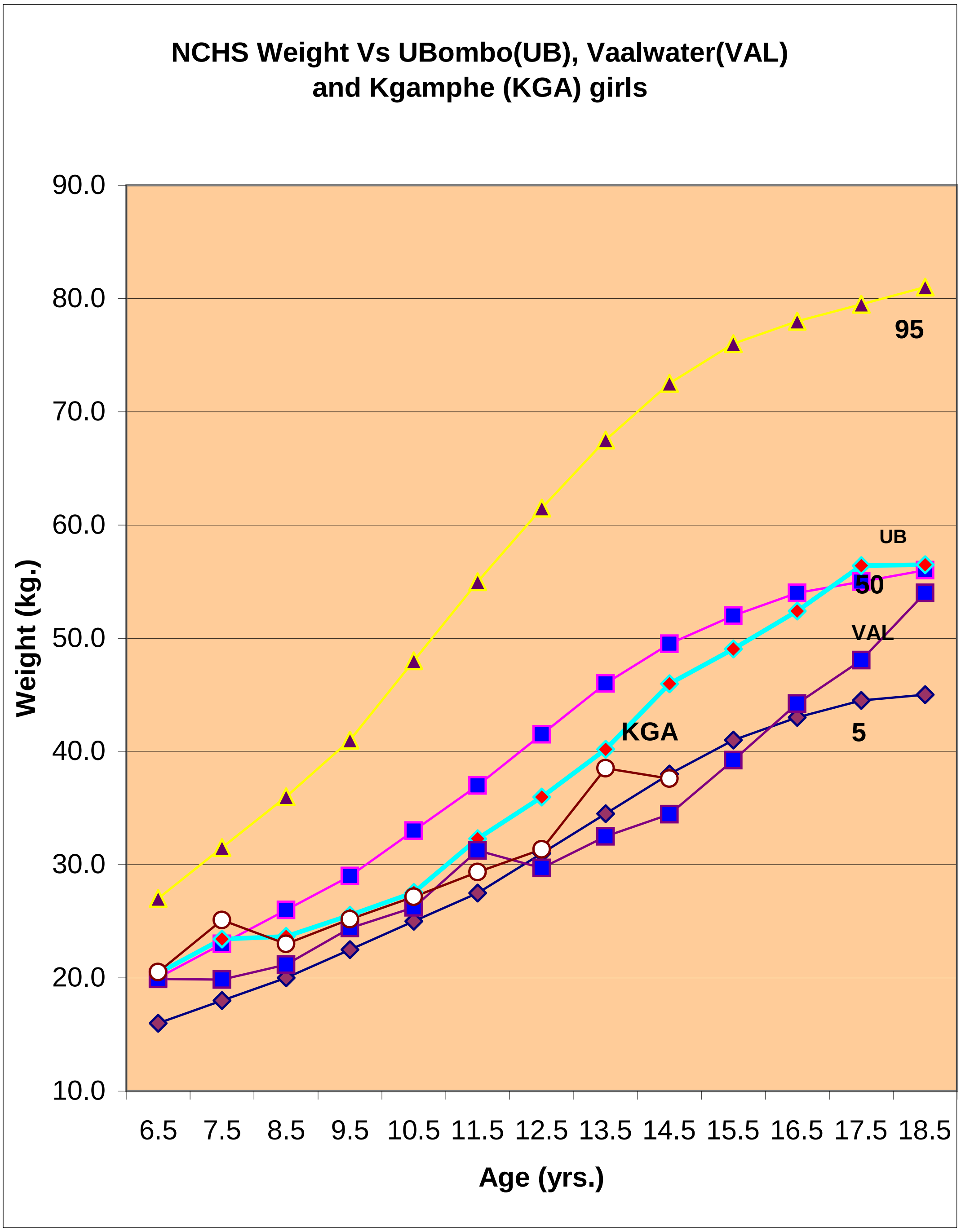
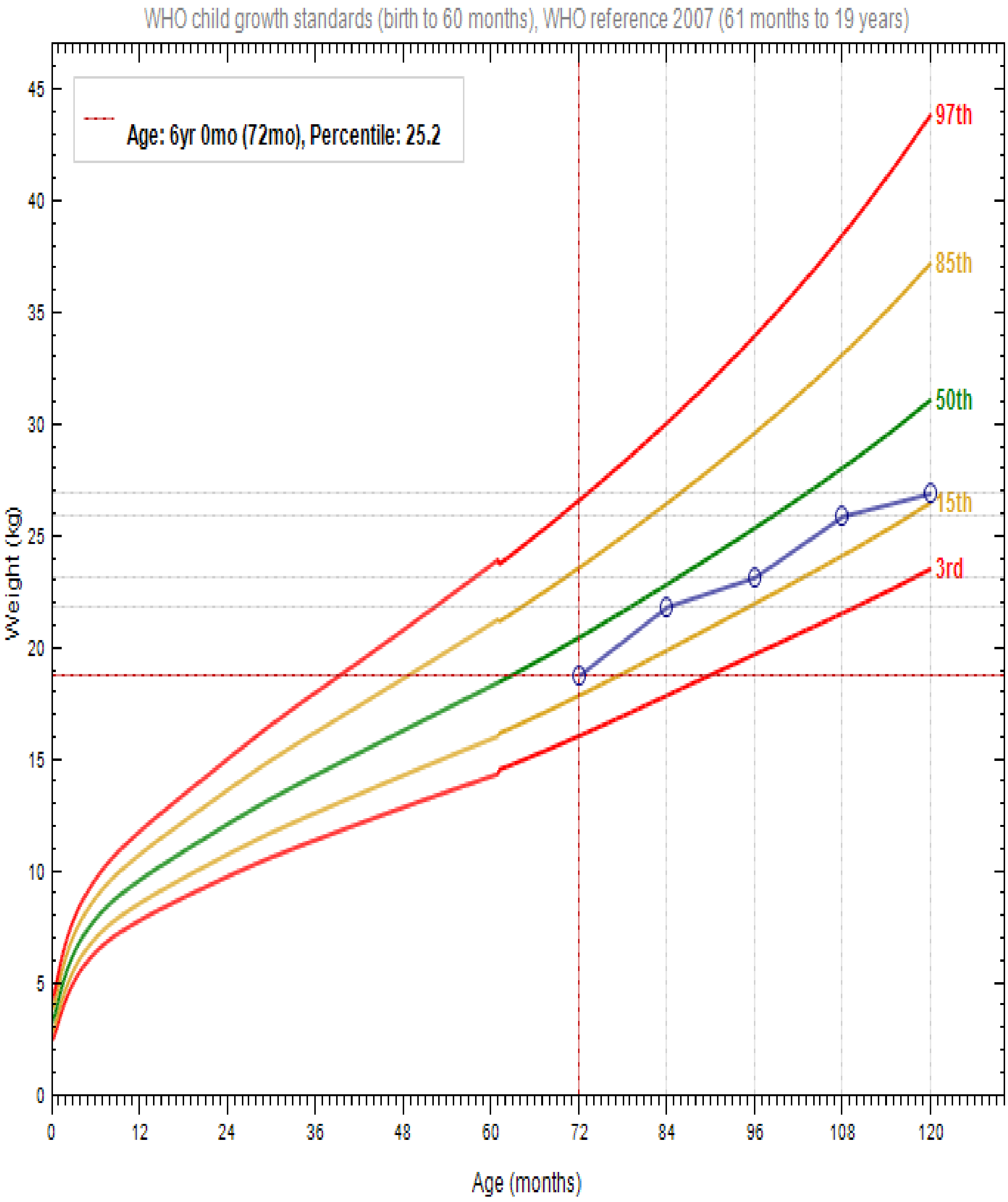


Table 6.25
UB boys: Weight-for-age percentiles compared to WHO Reference 2007



UB boys show their weight-for-age graph in blue from 6-10 years falling between the normal range of 15th and 50th percentile of the WHO WFA percentile chart.

Table 6.26
UB girls: Weight-for-age percentiles compared to WHO Reference 2007

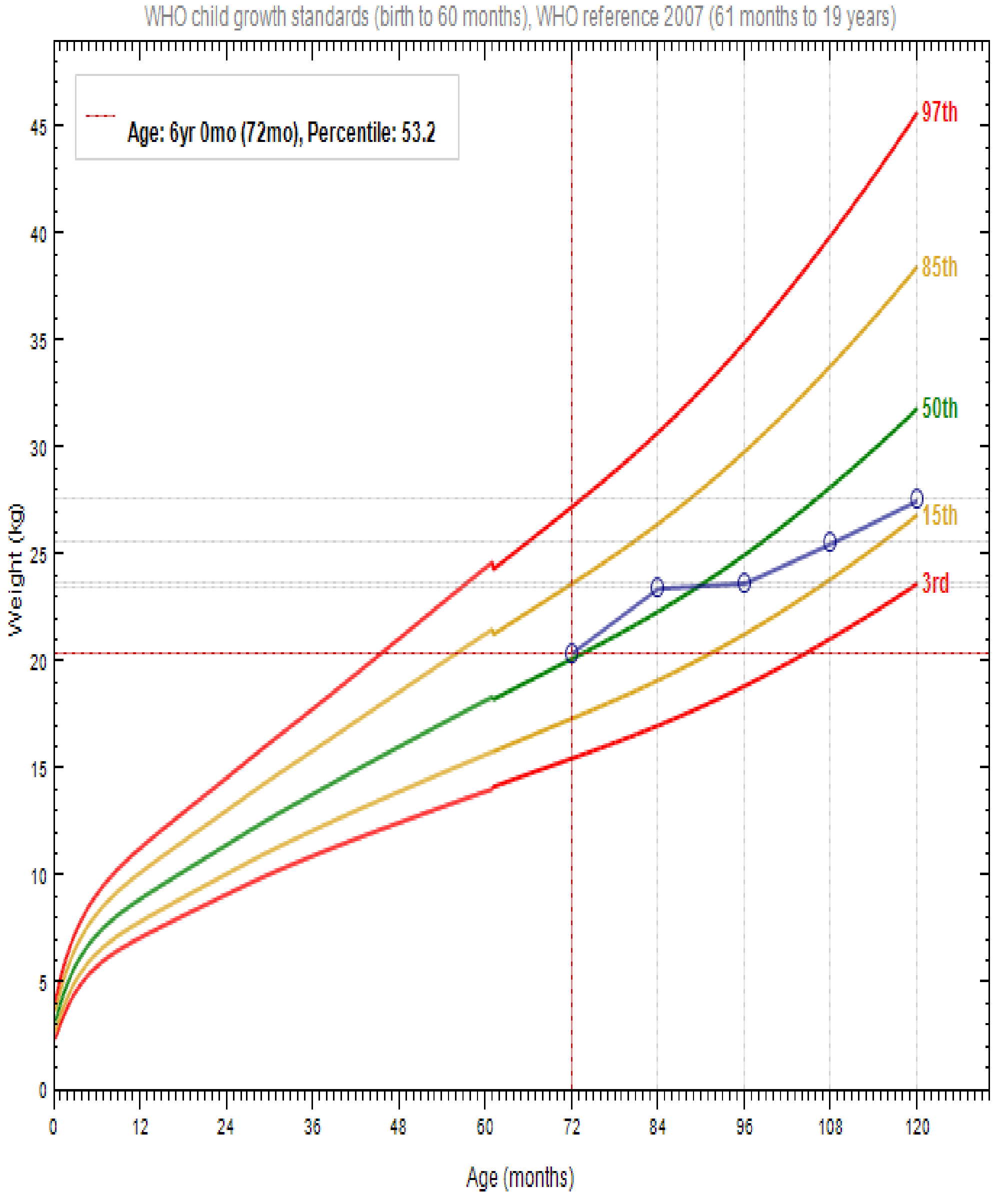


Figure 6.25 depicts weight-for-age of UB girl's graphs on and above the 50th WHO reference graph between six and seven years and falling away towards the 15th percentile by the age of 10 years.

Figure 6.27
VAL boys: Weight-for-age compared to WHO Reference 2007

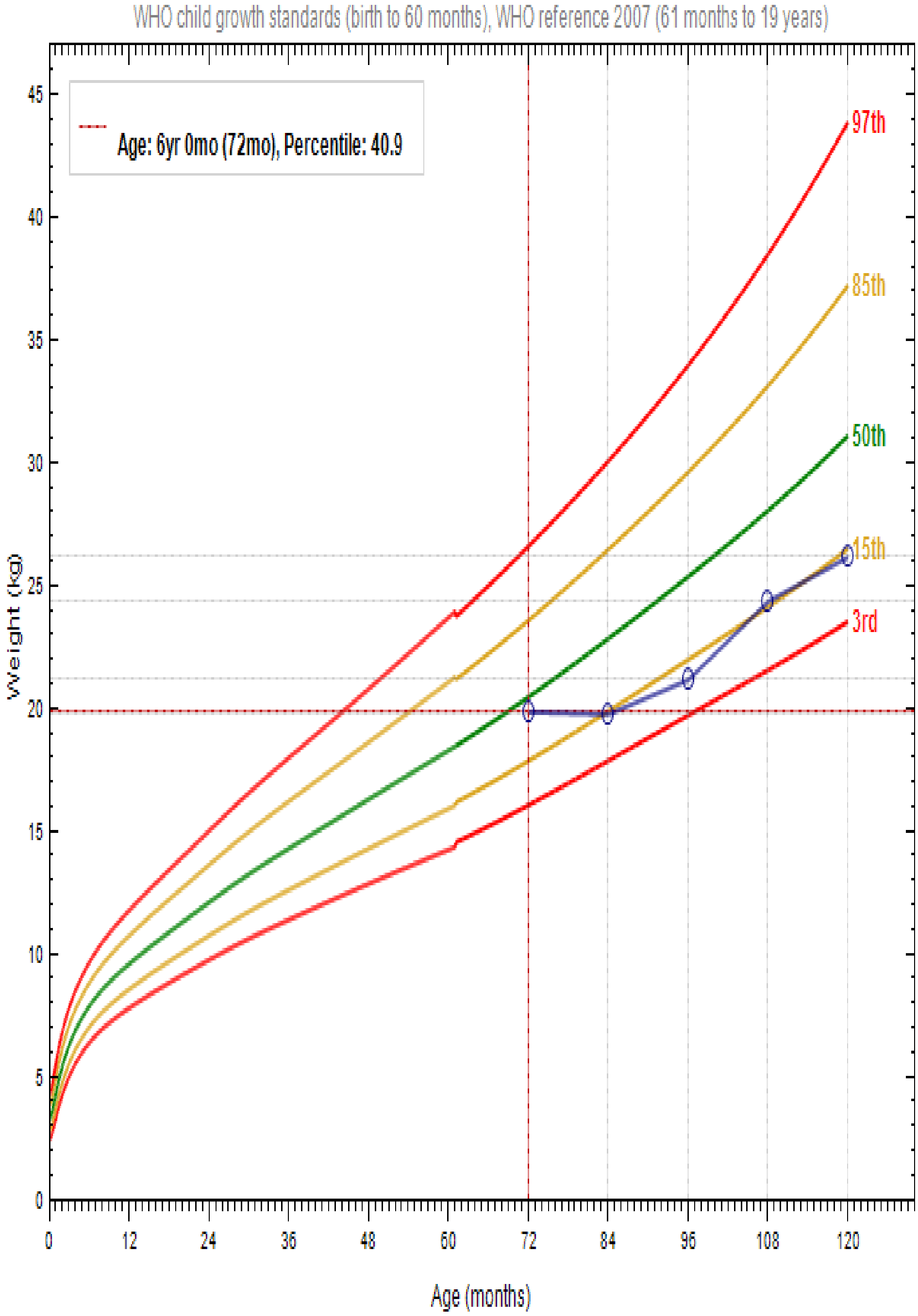
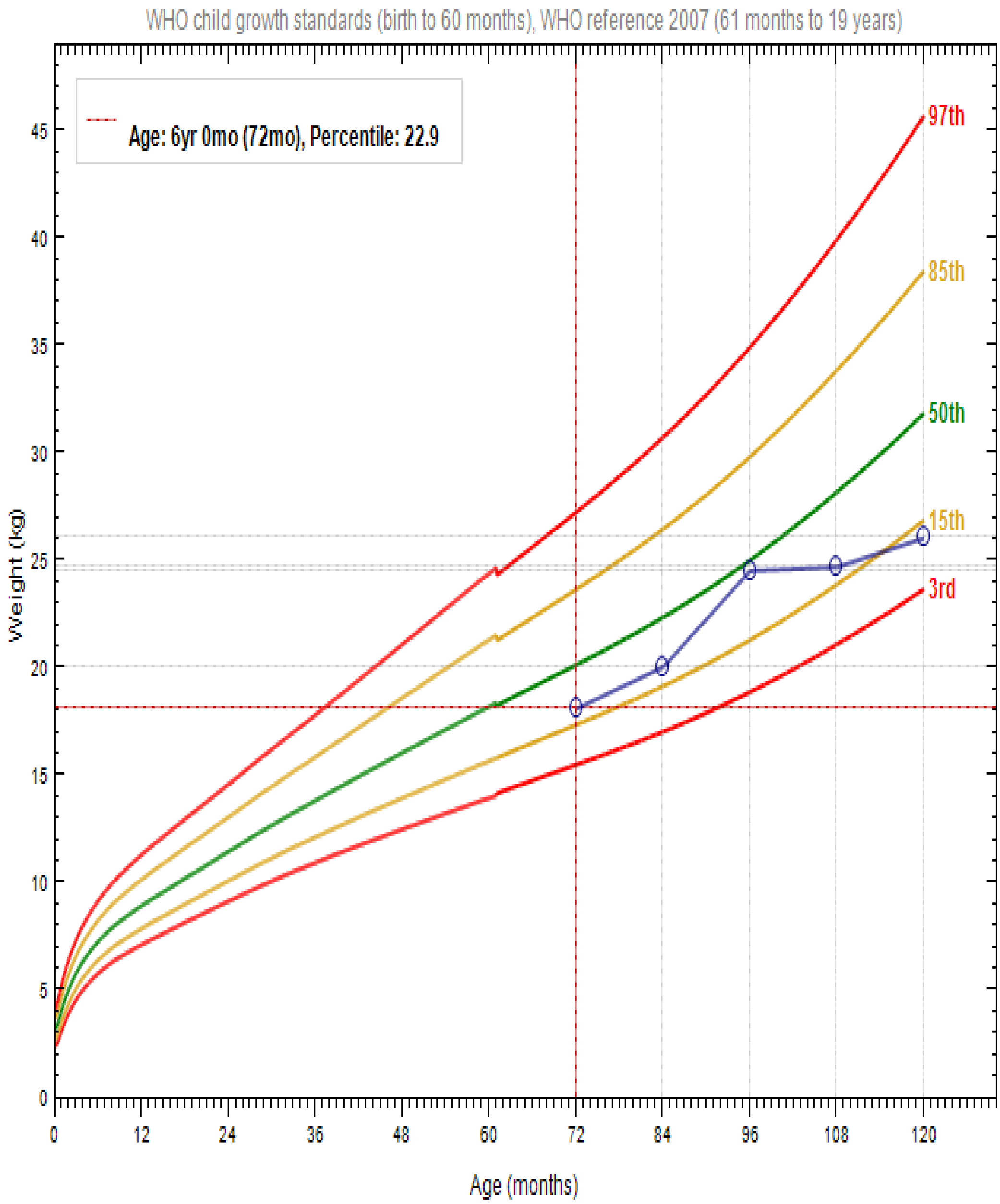


Figure 6.26 show VAL boys' weight-for-age graph being consistently on the 15th percentile from the age of 7 to 10 years.

Figure 6.28
VAL girls: Weight-for-age compared to WHO Reference 2007



VAL girl's weight-for-age shows normal weight-for-age graph line between the ages of 6 and 10 years.

Table 6.27
Height measurements of NCHS data compared to Ubombo (UB), Vaalwater (VAL) and Kgamphe (KGA) data- Boys (Blue)

	NCHS					
Age	5	50	95	VAL	UB	KGA
6	107.0	115.5	123.5	118.43	111.81	121
7	113.0	122.0	131.0	115.70	117.83	119
8	118.5	128.0	137.5	120.17	123.23	121
9	123.5	133.5	144.0	124.80	128.81	128
10	128.0	138.5	150.0	131.20	133.45	130
11	132.0	143.5	155.0	137.16	135.96	132
12	137.0	149.0	161.5	140.40	142.42	138
13	143.0	156.0	169.0	142.17	146.08	140
14	150.0	163.5	176.5	148.52	151.18	140
15	156.5	170.5	182.0	151.91	154.85	
16	160.5	173.5	185.5	156.10	160.82	
17	163.0	175.0	187.0	160.21	165.04	
18	164.0	176.0	188.0	166.77	167.6	

Figure 6.29
Height measurements: NCHS data compared to Vaalwater (VAL), Ubombo (UB), and Kgamphe (KGA) data-Boys (Blue)

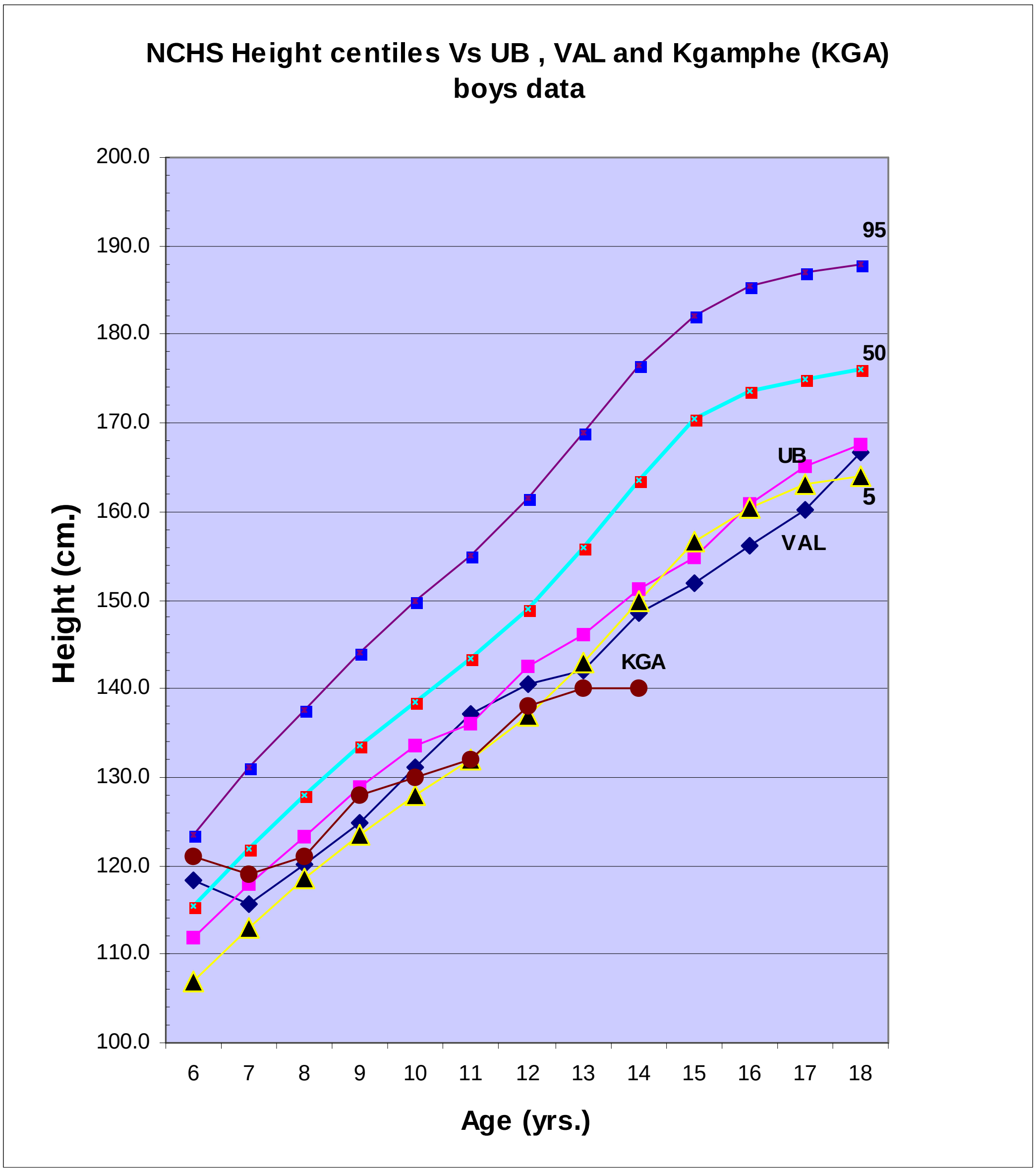
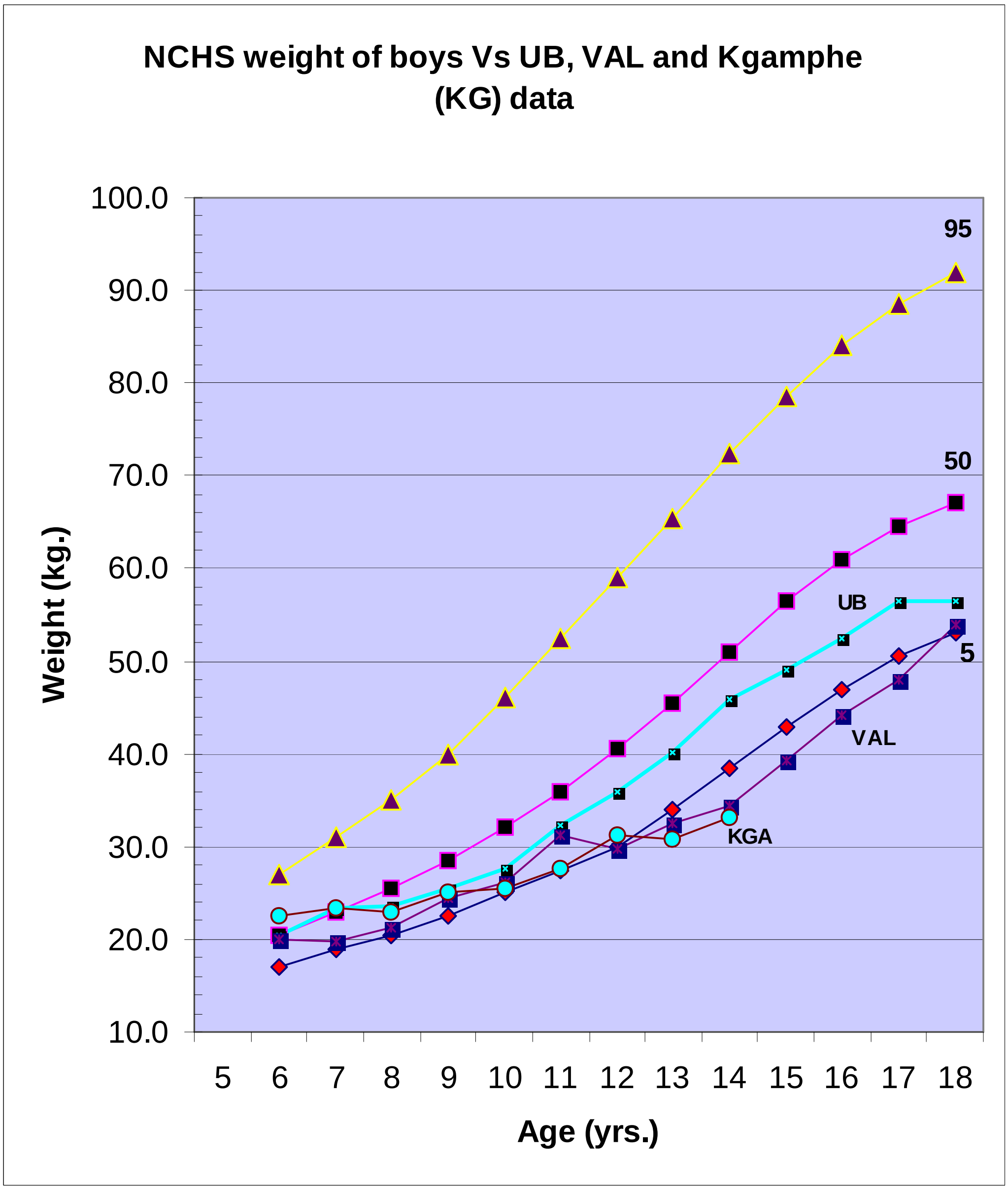


Table 6.28
Weight measurements: NCHS data compared to Ubombo (UB), Vaalwater (VAL) and Kgamphe (KGA) Boys data

	NCHS					
Age	5	50	95	UB	VAL	KGA
6	17.0	20.5	27.0	20.4	19.9	22.6
7	19.0	23.0	31.0	23.4	19.8	23.3
8	20.5	25.5	35.0	23.7	21.2	23.0
9	22.5	28.5	40.0	25.5	24.4	25.1
10	25.0	32.0	46.0	27.5	26.2	25.6
11	27.5	36.0	52.5	32.3	31.3	27.6
12	30.0	40.5	59.0	36.0	29.7	31.1
13	34.0	45.5	65.5	40.2	32.5	30.8
14	38.5	51.0	72.5	46.0	34.4	33.1
15	43.0	56.5	78.5	49.0	39.2	
16	47.0	61.0	84.0	52.4	44.2	
17	50.5	64.5	88.5	56.4	48.1	
18	53.0	67.0	92.0	56.5	54.0	

Figure 6.30
Weight measurements of NCHS data compared to Ubombo (UB), Vaalwater (VAL) and Kgamphe (KGA) Boys data



6.4 Secondary Sexual Characteristics at Vaalwater

6.4.1 Introduction

Apart from the eleven anthropometric measurements taken and analysed in this thesis, secondary sexual characteristics were assessed and have since been reported in Vaalwater children. (Cameron and Wright, 1990) published the results of this part of the research in an attempt to determine the timing of the start of breast development and age at menarche in South African black females. We also published the findings of this research highlighting the age at menarche and an analysis of secular trends in menarcheal age of South African urban and rural black females (Cameron, Kgamphe and Levine, 1991). In both publications, it was clear that black South African females were lagging behind their western counterparts in Secondary sexual characteristics. On the contrary, (Henneberg and Louw, 1990) found that Cape Coloured girls from high socio-economic conditions were not different from their western counterparts and were sometimes better. These two local and longitudinal studies were looking at children under different socio-economic conditions. The conclusion we draw from the VAL children is that their poor environmental conditions delay their optimal growth and hence they cannot attain their ultimate genetic potential.

Menarche does not necessarily imply sterility and neither does amenorrhea denote sterility. It is evident in the literature that shows recorded instances of conception occurring before menarche but in most girls, ovulation does not occur until there have been menstruation.

6.4.2 Methods

All children who were assessed for the secondary sexual characteristics were listed and tabulated in the appendix section of this thesis. Two methods were used for determining the age at menarche: status quo and recall techniques. The author did not participate in the taking of the secondary sexual characteristics but compiled and cleaned the data as shown in the appendix.

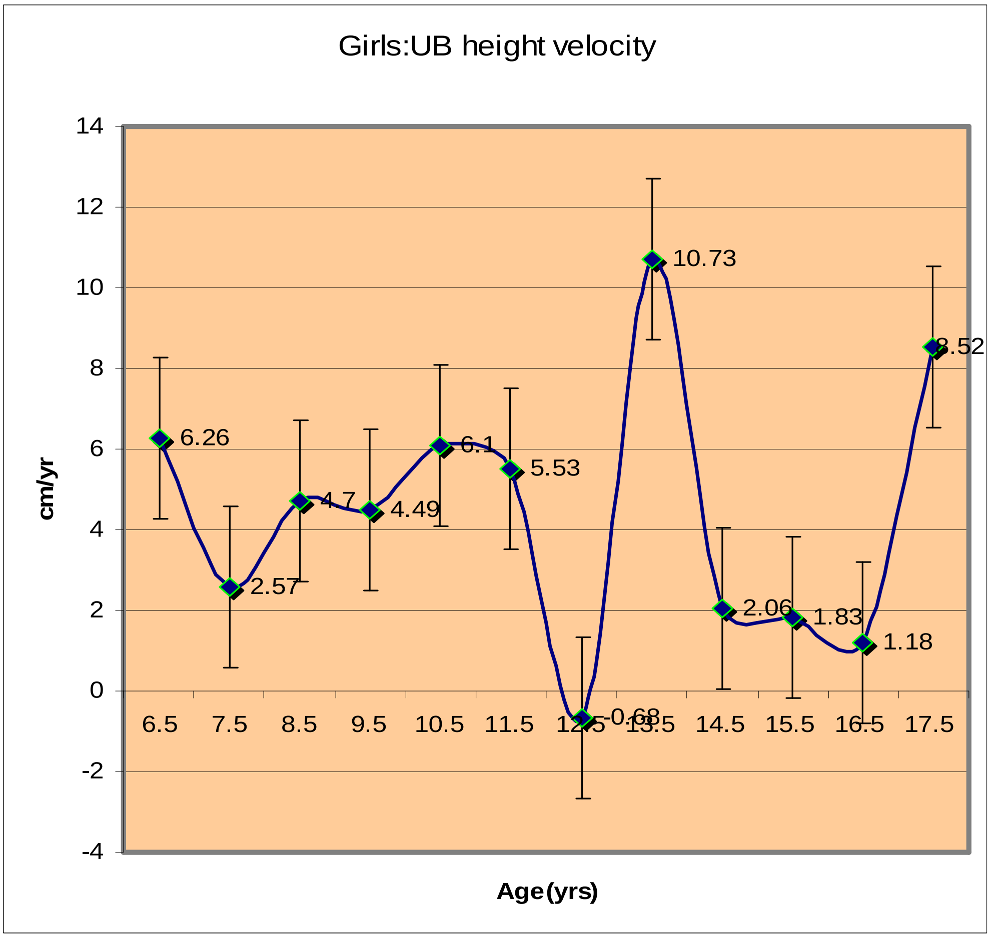
The testicular volumes from the right and left testicles were measured using the Pradder orchidometer. No analysis was made on the volumes recorded.

6.4.3 Findings

In comparing the timing of menarche to other studies, the regression analysis demonstrated a clear secular trend occurring in both urban and rural females between 1943 and 1990. Menarcheal age was decreasing at a rate of 0.34, 0.73 and 0.46 years per decade for rural, urban and combined groups respectively. (Cameron, Kgamphe and Levin, 1991).If we know the mean age at menarche in a population and also the standard deviation, we can predict when menarche is most likely to occur on any premenarcheal girl.

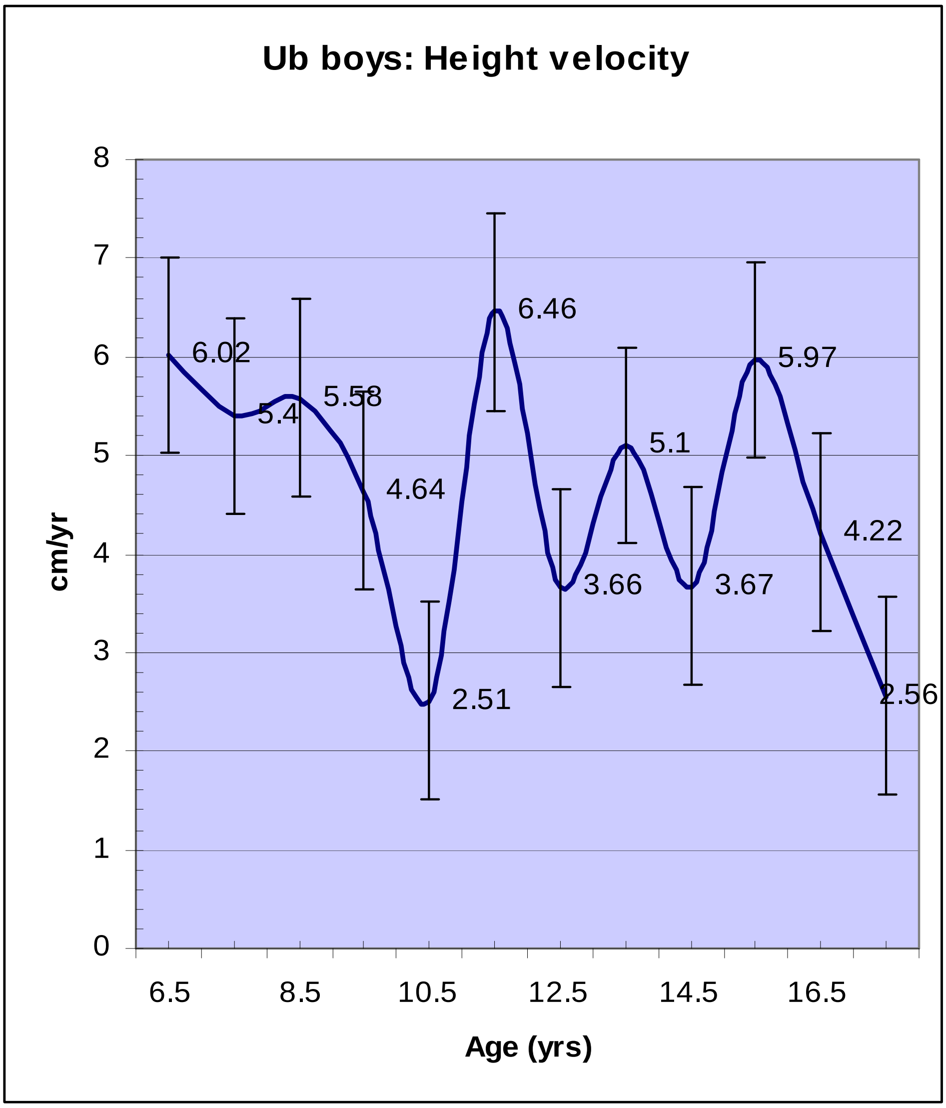
6.5 Height Velocities

Figure 6.31
UB girls: height velocity



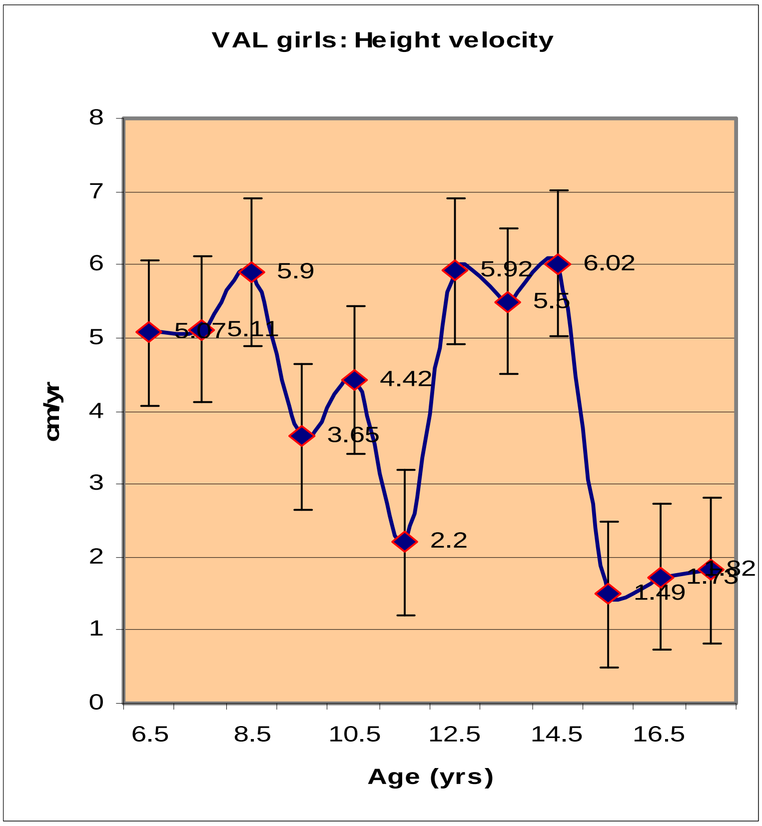
This figure denotes the Height velocity of UB girls reaching a peak of 10.73 cm/yr this is the Peak Height Velocity(PHV) at age 13.5.

Figure 6.32
UB boys: Height velocity



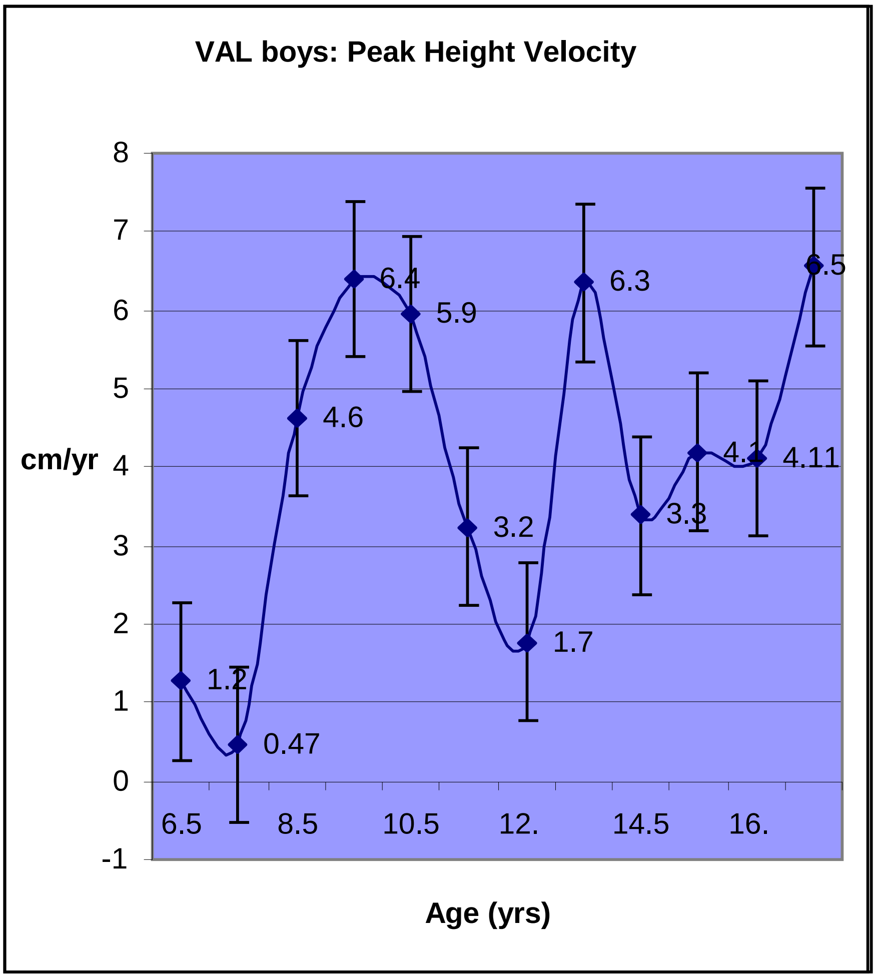
The above figure shows UB boys having the PHV of 6.46 cm/yr at the age of 11.5 years and a peak 15.5 years of 5.97 cm/yr. The UB boys can only have their peak height two years after the girls and hence the 5.97 cm/year is the correct figure for their PHV.

Figure 6.33
VAL girls: Peak height velocity



The Figure above shows VAL girls with the Peak Height Velocity of 5.92 cm/yr at the age of 12.5 years.

Figure 6.34
VAL boys: Peak Height Velocity



The figure above depicts the VAL boys PHV at the age of 13.5 as 6.35 cm/yr.

6.5.1 Comparison to other data: Rationale

6.5.1.1 International data: comparison

Most developed countries have long realised the importance and benefits of monitoring growth and development from birth to adulthood. To this effect, they have accumulated data that are now internationally recognised and serve as reference data globally. One set of such data, are those from the National Centre for Health Statistics (NCHS) in America. In this study we compare the Ubombo and Vaalwater data to the NCHS data, particularly in the estimation of stunting(height for age) and wasting(weight for age) where we determine children who fall below the NCHS 5th percentile line, estimate the Peak Height Velocity and weight gain per annum for both boys and girls.

The WHO Multicentre Growth Reference Study was implemented between 1997 and 2003 to develop growth standards for children below 5 years of age. The first set of the WHO Child Growth Standards based on length/height, weight and age that describe the attained growth of healthy children was released in April 2006. The second complimentary set based on head and arm circumference and sub-scapular and triceps skin folds, followed a year later WHO Reference 2007 . The standards are based on a prescriptive approach using well-defined criteria, rigorous data-collection methods, sound data-management procedures and high level statistical methods (de Onis 2004). WHO released WHOAnthro software for the analysis of 0-5 data and later after the release of the WHO Reference 2007, the newer version AnthroPlus was released for data analysis. The AnthroPlus was used in the individual comparison of UB and VAL data.

6.5.1.2 Comparison to other African data

The health and well being of individuals and populations can be effectively measured and monitored by using non-invasive anthropometric techniques. Africa, particularly with the latest African Union initiatives and the urgent need for the alleviation of poverty, has embarked on numerous growth and development initiatives that need to be accelerated. It is important to compare the growth and development of rural black South African children, to those of their counterparts elsewhere in Africa. Other comparisons included urban-rural differences and the impact of different socio-economic conditions. A key to effective comparative study is the use of well researched standards that uses breastfeeding as the “norm” in its design. WHO Reference 2007 is such a study and this reference represents how all children should grow.

South Africa does not have a data bank for the growth and development measurements of her population. Such a data bank would facilitate the planning of interventions and allocation of resources. There are other relevant growth and development studies that may form the basis of such a data bank.

In this study, we compare our studies to those that monitored the growth and development of other South African children in the same age range.

6.5.2 Conclusion

6.5.2.1 Weight for age

Weight-for-age is commonly used as an indicator for malnutrition because weight is easier to measure than height. Weight-for-age reflects linear growth and weight accumulation achieved pre- and post-natal over a long term as well as weight accumulation in the short term. Low weight-for-age may reflect either normal variation in growth or a deficit in growth. Underweight is usually defined as weight <-2 SD below that expected on the basis of the international growth reference. The prevalence of underweight in developing countries is 31%, ranging from 6.5% in South America to around 50% in South Asia (WHO, 1997, p.38).

NCHS assessments were compared to the use of WHO to assess the growth status of both the VAL and UB children. It was relatively difficult to obtain accurate estimates using the NCHS. Most estimates were not based on accurate statistical analysis or the use of charts that would allow the estimation of prevalence rates. WHO Reference allowed for the estimations of prevalence rates at the population level and more importantly, the individual "diagnostic" analysis was possible. Invidual data allowed for the estimation of their well being and their developmental staus. The longitunal data hence would allow for the estimation of the growth rates, particularly the peak height velocity (PHV). The z-scores computed using both the NCHS and the WHO reference were compared and the degree of underweight was estimated from both UB and VAL data.

Using the NCHS reference data it was estimated that Vaalwater boys from the age of 12.0 to 17.0 years were underweight. The NCHS estimates were VAL, boys (39.01%), and girls (16.7%) while the WHO WFA estimates indicated that 3.3%(1.1%,9.2%)95% CI of VAL boys were severely underweight and 12.6%(7.1%,21.3%)95% CI were underweight. The most severe group was the 8 year olds the most severe underweight 5%(1.2%,18.9%)

and 17.5%(8.3%,33.3%)95%CI and the girls were 1.9%(0.6%,5.7%)95% CI severely underweight and 11.7% underweight. UB girls showed WFA<-2SD and <-3SD at 7(2.7%), 8(2%) and 9(1.2%) years of age, and other children within the same age range were also underweight. The most severely underweight UB boys are those at ages 8 and 9 (2.9% (0.4%,19.8%) 95% CI and 2.2%(0.3%,14.9%)95% CI respectively

6.5.2.2 Body Mass Index

The prevalence of obesity in children, adolescents and young adults from 6.0 to 18.0 years, may be estimated by Body Mass Index (BMI). BMI is a number calculated from a child's weight and height. It is a fairly reliable indicator of body fatness for most children and teens. Although BMI does not measure body fat directly, research has shown that there is a correlation between BMI and the direct measures of body fat (www.cdc.gov, 2007). BMI is hence a relatively cheap, non-invasive and relatively an easy process to perform particularly in the screening of children and teens for weight categories that may lead to health problem. It is age and sex specific for children and also called BMI - for-age. BMI is hence, not a diagnostic tool but a mere screening tool. If overweight and excess fat may be a problem, further assessments would be needed to determine the exact measurements and hence accurate diagnosis.

In this study, BMI data of the children studied were plotted on the CDC BMI-for-age growth charts for either boys or girls in order to obtain their percentile ranking. This percentile ranking indicates the relative position of the child's BMI number among children of the same sex and age using the following categories:

Weight Status category	Percentile Range
Underweight	**< 5 percentile**
Healthy Weight	**5^{th} - < 85^{th} percentile**
At risk of overweight	**85^{th} - < 95^{th} percentile**
Overweight	**= or > 95^{th} percentile**

CDC BMI-for-age: CDC Growth Charts: USA www.cdc.gov ,2007.

CDC and the American Academy of Paediatrics (AAP) recommended the use of BMI as a screening tool for children with possible weight problems from as early as 2 years, screening for overweight, at risk of overweight, or underweight. These criteria are not the same as those that are applicable to adults as they are both age and sex specific while those applicable to adults are not.

The reasons why age and sex are considered for children and teens are mainly because the amount of body fat in children changes with age and also because the amount of body fat in these children differs between boys and girls (see the different boys and girls 5th , 50th , 85th , and 95th percentile tables below).

While it is possible to develop and construct standards for normal children using other anthropometric data, it is not possible to determine healthy weight ranges as these would change with each month of age for each sex and also because healthy weight ranges changes as height increases (www.cdc.gov, 2007).

The validity of computed BMI values needs to be determined and compared to other assessments like diet, health, physical activity, skinfold thickness measurements and other body-composition screening indices for the accurate assessment of body fatness in children and adolescents. More analysis on these and other assessments for both Ubombo and Vaalwater children will need to be done over time, to ensure that interventions are properly evaluated.

Using the WHO as the reference, UB boys showed that the 10-14 year olds are 0.6% severely wasted while 4.1% are wasted. 1% (0.3%,3%)95% CI of these are at risk for overweight and 0.3% (0%,2.3) are overweight but none were obese. Total Ubombo girls assessed for BMI-for-age shows extreme cases of obesity BAZ (%) >+2SD, 2%(0%,0.7%) of all the UB girls are obese and 1%(0.3%,4.1%) of 6-9 year olds are obese while 2.6%(1.1%,6%) of them were overweight, other age groups were also overweight at different percentage levels. None of the UB girls are severely wasted (<-3SD) while about 2.9% (1.6%,5.1%) of the 10-14 year olds and 0.7% of the 15-19 year olds are wasted and thin for age.

VAL children were severely wasted 3%(1.8%,5.2%)95% CI and 16.5%(13.2,20.4%)95% CI wasted at the mean(-1.44 and SD(0.93). The 10-14 year old are mostly affected 5.4%(3%,9.6%)95% CI severely wasted and 26%(20.4%,32.5%)95% CI wasted.

6.5.2.3 Methods

Before calculating the BMI, each child's accurate height and weight measurements were checked for possible errors and measurements were verified after each tenth child for validation purposes. The BMI and percentiles were then computed using the Child and Teen BMI Calculator and the BMI number is calculated using standard formulas.

The BMI-for-age percent was used to interpret the BMI number because BMI is both age and sex specific for children and teens. These percentiles were then plotted against the CDC BMI-for-age growth data extrapolated from the CDC BMI-for-age charts for girls and boys respectively.

6.5.2.4 Conclusion

All boys and girls from UB have normal healthy weights falling between the 5th percentile and the 50th percentile of the CDC weight-for-age and sex charts. UB boys are however too short for their age. UB girls of ages 14, 15, 16 and 17 fall between the 50th and 85th percentile of CDC weight-for-age charts and also shows some catch-up Growth.

Vaalwater boys are 8.62% underweight as they fell below the 5th percentile of CDC weight-for-age reference charts at the age of 12.0 years and just on the border of the 5th percentile at the age of 14.0 yeaIf we include the borderline cases that would estimate the VAL boys to be 26.4% underweight at ages 12, 13, and 14 years respectively.
The global efforts to eliminate poverty will ensure that child health goals for the early part of the next century target improvements in the rates of stunting. When comparing stunting and underweight, stunting may be considered to be a better indicator of well-being for populations of children in countries than is underweight, given that underweight is affected by weight recovery for some children and by some children being overweight.

UB and VAL data were compared to the WHO Nutrition Programme Global data on Child Growth and Malnutrition from 1980 – 1995 (Third Report on the World Nutrition Situation, 2007). Data from 61 countries were made available for the estimation of trends in stunting, and from 95 countries for the estimation of prevalence of stunting. All these countries contributed to the estimation of trends in stunting if they had two or more surveys and countries contributed to the estimation of prevalence in stunting if they had at least one survey.

Table 6.29
Estimated Prevalence of Stunting (%) and Numbers of Children Affected for 1980, 1985, 1990 and 1995 by Region

Region	***Prevalence Stunting***				***Numbers Stunted (in millions)***				***% Change***
	1980	**1985**	**1990**	**1995**	**1980**	**1985**	**1990**	**1995**	
Sub-Saharan Africa	37.4	38.1	38.7	39.4	26.255	30.832	36.248	42.590	+62
Near East/North Africa	30.8	25.9	23.0	22.2	11.397	10.991	10.865	10.913	-4
South Asia	66.1	61.9	57.7	53.5	88.873	93.237	91.520	89.877	+1
South East Asia	51.9	47.3	42.8	38.3	35.581	32.862	30.119	30.206	-15
Middle America/Caribbean	31.6	30.4	29.1	27.8	5.398	5.467	5.631	5.626	+4
South America	25.0	21.0	16.9	12.9	8.285	7.309	5.965	4.644	-44
China (1992)			31.4				36.068		
Across all regions (excluding China)	48.8	45.6	42.5	39.9	175.789	180.698	180.348	183.856	+5
UB	-	-	-	18.7	-	-	-	-	
VAL	-	-	-	47.2	-	-	-	-	

These estimates were derived assuming a linear relationship between stunting and year.

(WHO Third Report on the World Nutrition Situation, 2007?)

Figure 6.35
Stunting by region

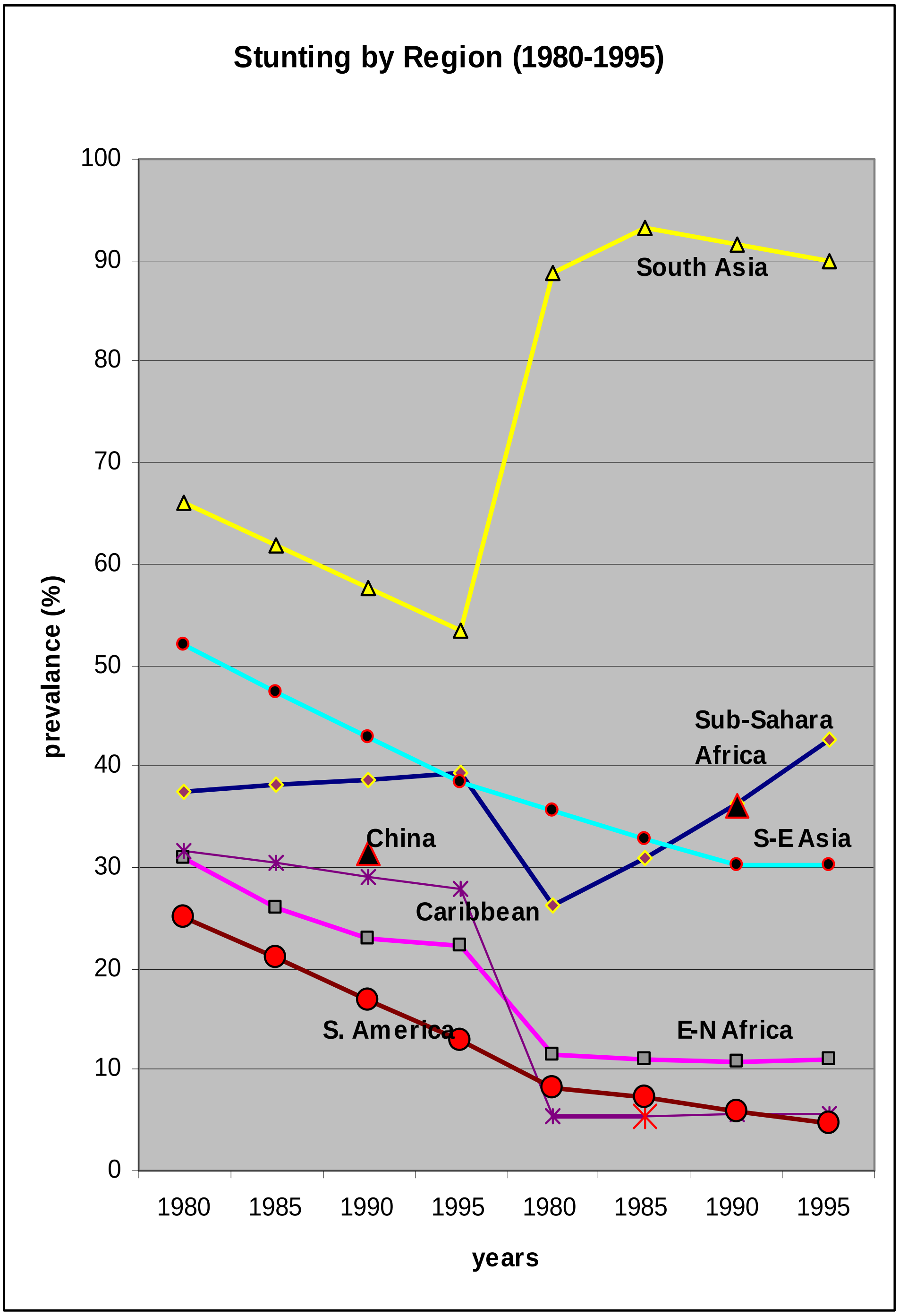


Table 6.30
Height for age: Estimation of stunting using NCHS data and WHO

	Boys (WHO <-2sd;<-3SD)	Girls (WHO<-2SD;<-3SD)
UB	18.7% (24.2%; 4.8%)	9.8% (19.4 %;3.3%)
VAL	39.0% (22%; 3.3%)	16.7% (16.1%;5%)

Weight for age
(Wasting: <5th percentile NCHS) VS WHO (<-2SD;<-3SD severe underweight)

	Boys (WHO<-2SD;<-3SD)	Girls (WHO<-2SD;<-3SD)
UB	0% (8.6%;1.4%)	0% (5.9%;1.5%)
VAL	47.2%(12.6%;3.3%)	34.7%(11.7%;1.9%)

WHO reference allows for the confidence limits at 95% but these are not listed in the table above.

6.5.2.5 Conclusion

Sub-Saharan Africa had an increase in the prevalence of underweight from 1985 to 1995, just as it did for stunting (WHO, 1997). Other regions had decreasing trends in the prevalence of both underweight and stunting. Stunting is more prevalent than underweight in all regions. The prevalence of stunting is, on average, 11.5 percentage points1 higher than the prevalence of underweight. This can be explained by the fact that children who are stunted in early life may attain normal weight later on but remain short.

6.6 Comparison with results from other studies

6.6.1 Height

6.6.1.1 International data

Male stature in the majority of European countries lies consistently between the 40th and the 60th percentiles of international reference charts. The tallest and shortest samples of boys in Europe have been derived from Burgos and Guadalajara regions of Spain respectively (www.fao.0rg, 2008). For a number of European countries the mean statures for females remain consistently within the limits of 40th and 60th percentiles of internationally accepted reference charts. These data, allows for their appropriate use in assessing the health or otherwise of their populations.

Other uses of anthropometry include differentiating between social inequalities in height change across generations. (Li , 2004), used the 1958 British birth cohort, all born 3rd-9th March. 1958, and were followed to 1991, and the offspring of one third of this population. Height was measured at 7, 11, 16, and 33 years (cohort members) and once at 4.18 years (offspring). The results showed that height inequalities were observed among cohort members, with differences >2.0 cm at all ages. They concluded that social inequalities in height observed among the cohort weakened substantially in the next generation due to a greater height gain among offspring of manual classes. Inequalities in childhood height have narrowed between the two generations in this study. KGA data was taken ten years after the VAL data. No significant differences were observed, probably due to the short time span between measurements as compared to the Li study that spanned from 1958 to 1991.

(Marshall and Tanner, 1969), in a sample of British girls, observed a mean age at peak height velocity (PHV) of 12.14 +/- 0.14 yrs (SD = 0.88 yr). Marshall maintained that adolescent girls may reach their maximum growth rates at any time between their 10th and 14th birthdays. For boys, the mean age was 14.06 +/- 0.14 yrs (SD = 0.92). Most boys reached their PHV between their 12th and 16th birthdays (Marshall, 1977). In this study, the growth rates of both Ubombo and Vaalwater were below normal. By the time they are at adolescence, their growth velocities are near the NCHS 5th centiles. They showed an extended adolescence period and catch-up growth at 18.0 years and later (Cameron, Kgamphe , 1988a). (Bock , 1973), showed a small and marginally significant correlation between the timing of the adolescent growth spurt and mature length, with a later spurt weakly associated with stature. In this study both girls and boys showed their heights to be nearer the NCHS 50th centiles but then moves away from towards the 5th centiles at later years and hence showed a “delay” in their timing of their adolescent growth spurt.

(Tanner, 1976), reported that mean heights of Africans in Africa, fall within or above the range of means from European samples. In this study, both Ubombo and Vaalwater children fell below the range of height means from American children. (Tanner, 1976) also indicated that mean body weights on the other hand, were different in that more female means than boy’s means fell within the European range. This finding is similar to what was found in this study in that, the Ubombo females mean weight were similar to American mean weights but this did not apply to Ubombo boys nor apply to both the boys and girls from Vaalwater.

Five countries were selected to compare their data to those of UB, VAL per variable. Height measurements from Belgium, Bulgaria, Denmark UK and USSR were compared and plotted for age and sex.

Table 6.31

European Height (cm) measurements compared to UB and VAL boys

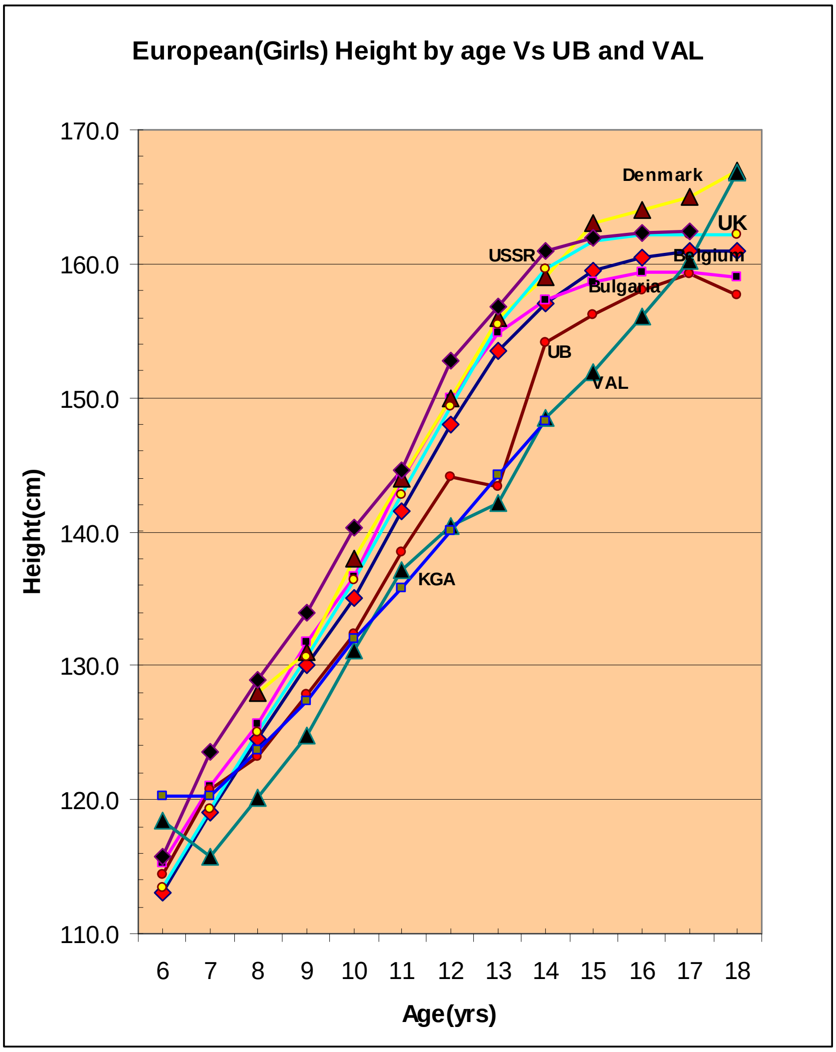
Age	Belgium	Bulgaria	Denmark	UK	USSR	UB	VAL	KGA
6	114.0	115.6	-	114.6	116.0	114.4	118.4	120.3
7	120.0	123.1	-	120.5	123.9	120.7	115.7	120.3
8	126.3	128.0	128.0	126.2	129.7	123.2	120.2	123.7
9	131.0	133.0	134.0	131.6	134.6	127.9	124.8	127.4
10	136.0	137.3	140.0	136.8	140.3	132.4	131.2	132.0
11	141.0	142.1	144.0	141.9	143.4	138.5	137.2	135.8
12	146.0	148.0	148.0	147.3	150.0	144.1	140.4	140.1
13	152.0	153.9	155.0	153.4	156.6	143.4	142.2	144.2
14	158.0	161.8	164.0	160.7	162.6	154.1	148.5	148.2
15	164.0	166.9	167.0	167.3	166.7	156.2	151.9	-
16	169.0	169.1	172.0	172.2	174.0	158.0	156.1	-
17	172.8	171.5	175.0	174.3	177.1	159.2	160.2	-
18	173.9	171.9	-	174.7	-	157.7	166.8	-

Table 6.32

Height: Comparison between European Girls and UB and VAL girls

Age	Belgium	Bulgaria	Denmark	UK	USSR	UB	VAL	KGA
6.0	113.0	115.2		113.4	115.7	114.4	118.4	120.3
7.0	119.0	121.0		119.3	123.6	120.7	115.7	120.3
8.0	124.5	125.6	128.0	125.0	129.0	123.2	120.2	123.7
9.0	130.0	131.7	131.0	130.6	134.0	127.9	124.8	127.4
10.0	135.0	136.7	138.0	136.4	140.3	132.4	131.2	132.0
11.0	141.5	143.8	144.0	142.7	144.6	138.5	137.2	135.8
12.0	148.0	150.0	150.0	149.3	152.8	144.1	140.4	140.1
13.0	153.5	154.8	156.0	155.5	156.8	143.4	142.2	144.2
14.0	157.0	157.3	159.0	159.6	160.9	154.1	148.5	148.2
15.0	159.5	158.6	163.0	161.7	161.9	156.2	151.9	
16.0	160.5	159.4	164.0	162.2	162.3	158.0	156.1	
17.0	161.0	159.4	165.0	162.2	162.4	159.2	160.2	
18.0	161.0	159.0	167.0	162.2		157.7	166.8	

Figure 6.36
Weight: Comparison between European, UB and VAL girls



Chapter 7 deals with the conclusions reached from the Ubombo and the Vaalwater data on the select measurements as compared to the local studies, those done in Africa, and those studies from international countries.

CHAPTER 7

CONCLUSION

7.0 INTRODUCTION

7.1 Growth and Development Studies

One of the extensive evaluations of the worldwide practices in child growth monitoring was reported by (de Onis , 2004). They sent questionnaires to Ministries of Health in 202 countries requesting information on growth charts used in national programmes, reference populations, classification systems, problems encountered, and actions taken against growth faltering. Countries also provided hard copies of charts in current use. Responses were received from 178 (88%) countries, 154 of which included growth charts (n=806). Two thirds of the charts covered preschool ages. All countries used weight-for-age, over half relying on this index alone. The reference most commonly used (68%) was the National Centre for Health Statistics/World Health Organization, with regional variations. The survey demonstrated that growth charts are used universally in paediatric care.

The bulk of the research on this subject has been done in the most developed communities and least in the underdeveloped or developing communities. Most of the studies have been performed in a wide range of contemporary developing societies in Africa, Asia, America (Eveleth and Tanner, 1976), (Metcoff, 1978), (Sterky and Mellander, 1978), and (Tanner, 1978). Yet information on birth weight, for example, has been gathered in Europe and North America for well over a century. These measurements provide an opportunity to examine the relationship between actual measurements taken and socio-economic factors in circumstances dramatically different from those of the recent past. For health professionals this evidence permits an examination of the effects of long-term economic development and social change upon birth weight, height or other metrical character.

7. 2 The importance of this Study

(Labadarios and Nel, 1999), in a national survey, indicated that pre-school South African children appear to have a more favourable nutritional status than children elsewhere in

Africa, Central and South America and in the Indian peninsula. Despite this, we indicate in this thesis that the prevalence of stunting in South Africa, even with a relatively small sample size used in these two areas, UB and VAL is too high e.g. in VAL stunting was estimated at 39.1% in boys and 16.7% in girls but 18.7% and 9.8% in UB boys and girls respectively. The author concludes that it remains of great concern to continue to focus on the need for effective intervention programmes. The unique contribution made in this thesis is an attempt to design new South African growth reference charts for normal children's measurements for Height, Weight, Sitting Height, Head Circumference, Relaxed Upper Arm Circumference, Bi-acromial Diameter, Bi-iliac Diameter, Biceps skinfold, Triceps skinfold, Supra-iliac skinfold and Sub-scapular skinfold.

Further refinement of the local reference charts needs to be effected by the incorporation of larger representative sample data, further analysis and consolidation of available data and the possible eventual establishment of a national health survey institution along the lines of those of the American National Centre of Health Statistics (NCHS).

Tobias, (1978), re-defined the meaning of secular trends that have since been applied to long-term systematic or non-random changes in new born babies, immature individuals during the growth periods and in adults. By his secular trend approach, he recognised the "four sub-divisions of the world's human population, the 'have-most, have-ample, have-little and the have-least'. In his 1985 work on the 'the negative secular trend', Tobias showed that the have-nots (embracing have-little and have-least) comprised the parts of the population that have an 'absent' or a negative secular trend. This concept needs to be tested on a wider spectrum of human populations.

The determination of secular trends in growth and development studies needs more than ten years to yield significant results. The American study by (Ogden , 2004), published from the Division of Health and Nutrition Examination Surveys, Centres for Disease Control and Prevention, National Centre for Health Statistics, reported trends in national estimates of mean weight, height, and body mass index (BMI) from the National Health Examination and the National Health and Nutrition Examination Surveys between 1960 and 2002. They found that mean weight and BMI increased for both sexes, in all race/ethnic groups (race as a social category not as well defined genetic or biological groups), and at all ages. Among adults, mean weight increased more than 12kgs. Mean height, also increased for most ages and for both males and females although this increase was not dramatic over these 42 years.

In this thesis, a small sample indicated that only mean weight values were slightly increased as measured by Kgamphe data ten years after the Kgamphe-Cameron data, but more time will be needed to show changes in skeletal measurements. In an article titled “Forty years on: the effect of deprivation on growth in two Newcastle birth cohorts”. From the Department of Child Health, by Wright and Parker, 2004) reported mean height increases from the 1947 to the 1987 cohorts. It seems the observation of meaningful secular trend is visible after forty years.

7.3 Interpretation of the Results

The interpretation of the results in this thesis was based on two main relationships found in human growth and development studies i.e. body growth and environmental impact. The first relationship we needed to observe was the robustness of the growth spurt, as we know that the spurt is absent only in individuals under the most severe environmental pressure. Those individual subjects that grow in a favourable or mediocre environment are anticipated to show the growth spurt. The second relationship was that where the environment is ameliorated growth may be accelerated to attain the target size, this is called Catch-up growth. It is important to make a difference between catch-up growth and growth-spurt. Catch-up growth at the end of juvenile period may mimic the adolescent growth spurt (Hamada, and Udono, 2002).

What we observed in both UB and VAL children was not a robust growth spurt. Some growth spurt between the ages of 13.5 years and 15.5 years for UB and VAL respectively was observed. Estimated Peak Height Velocity was 10.5 cm/year at 13.3 years for UB girls but on applying the smoothing trend line with moving average at period of three of excel spread sheet, a peak height velocity was estimated at 5.5 cm/yr for UB and 4.2 cm/yr for VAL girls at 15.5 years.

In their Longitudinal analysis of length growth in the chimpanzee, (Hamada and Udono, 2002) showed that some subjects living under favourable conditions did not exhibit a growth spurt and they observed that it was only the subjects who had delayed growth in the juvenile period that showed a spurt in adolescence, the period when reproductive maturation occurred.

Growth and development studies can also be applied to find out whether the political and the economic transformations are effective. (Mierzejewska and Olszewska, 2004), applied anthropometry to find out whether the political and economic system in Poland in 1989, had an influence on the rate of maturation of girls from various categories of the rural populations in two regions differing in wealth. The stratification of the villagers was based on the source of the family income (farmers and, farmer-workers and non-farmers), on parents' education and on the number of children per family. The age at menarche (AM) was used as a biological indicator of living conditions. The percentage of families owning a car, freezer, colour TV and automatic washing machine markedly increased and the education of the parents improved. In 20 years time, the acceleration in AM amounted to 0.14 years in the rich region and to 0.46 years in the poor region. A similar study will need to be done in South Africa 20 years post independence.

7.3.1 Relationship between different occasions at Ubombo and Vaalwater

The selected four occasions from each site Vaalwater and Ubombo, occurred almost one year apart. These occasions occurred during winter/autumn seasons each year. It was ensured that, measurements were consistently taken during the last week of winter or at the beginning of autumn for each site respectively.

The t-test was computed to test if there were any differences between measurements variables from UB and VAL. At 5% level of significance, for all variables and (P>0.05). Each tenth child was measured twice and also tested for significance and there were also not significantly different.

7.4 Comparison between Ubombo, Vaalwater and NCHS data

NCHS means were compared to Ubombo and Vaalwater data at all ages. Ubombo girls were much closer to the 50th centiles on NCHS growth charts, particularly for weight, from the ages of 12.0 years onwards. VAL boys were below the 5th percentile of the NCHS weight for age from 13.5 year old to the 17.5 year olds. UB boys had their weight measurements above the 5th centiles and below the 50th centiles of NCHS charts. The younger UB boys at 6.5 and 7.5 years had their mean values above the 50th NCHS centiles line.

Z-scores for both VAL (V-Height for age z-score) and UB (U-HAZ) were then computed for further comparison.

Table 7.1
Z-scores Age for Height (ZAH): NCHS data compared to Ubombo (UB), Vaalwater (VAL)

Age	V-HAZ	U-HAZ
6.5	0.19	-0.81
7.5	-1.06	-0.53
8.5	-1.38	-0.62
9.5	-1.36	-0.61
10.5	-1.36	-0.54
11.5	-1.43	-1.09
12.5	-1.65	-0.72
13.5	-2.06	-1.28
14.5	-2.73	-1.30
15.5	-2.76	-2.22
16.5	-3.15	-1.79
17.5	-3.31	-1.66
18.5	-1.63	-1.66

Table 7.1 above depicts the Z-scores of height-for-age of UB and VAL boys against the NCHS reference data.

Figure 7.1
UB : Height-for-age Z-scores of All children boys and girls from Ubombo combined as compared to WHO Reference 2007

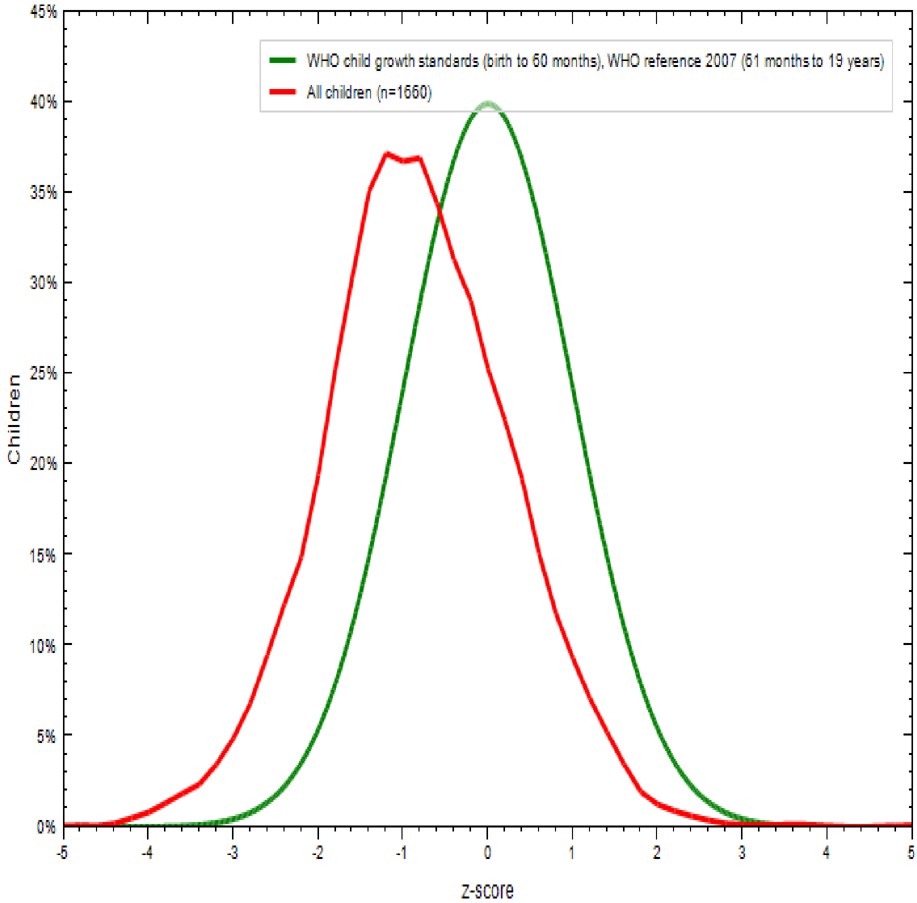


Figure 7.1 depicts the combined sample of Ubombo children lagging behind the height-for-age WHO child growth standards. Overall UB children are 19- 20% stunted and 3-5% severely stunted/short-for-age. Reading % from the graphs does not always give accurate percentages of prevalence; accurate data were generated in tables as shown in the previous chapter.

Figure 7.2
UB: Boys and Girls- height-for-age in comparison to the Z-scores of the WHO Reference

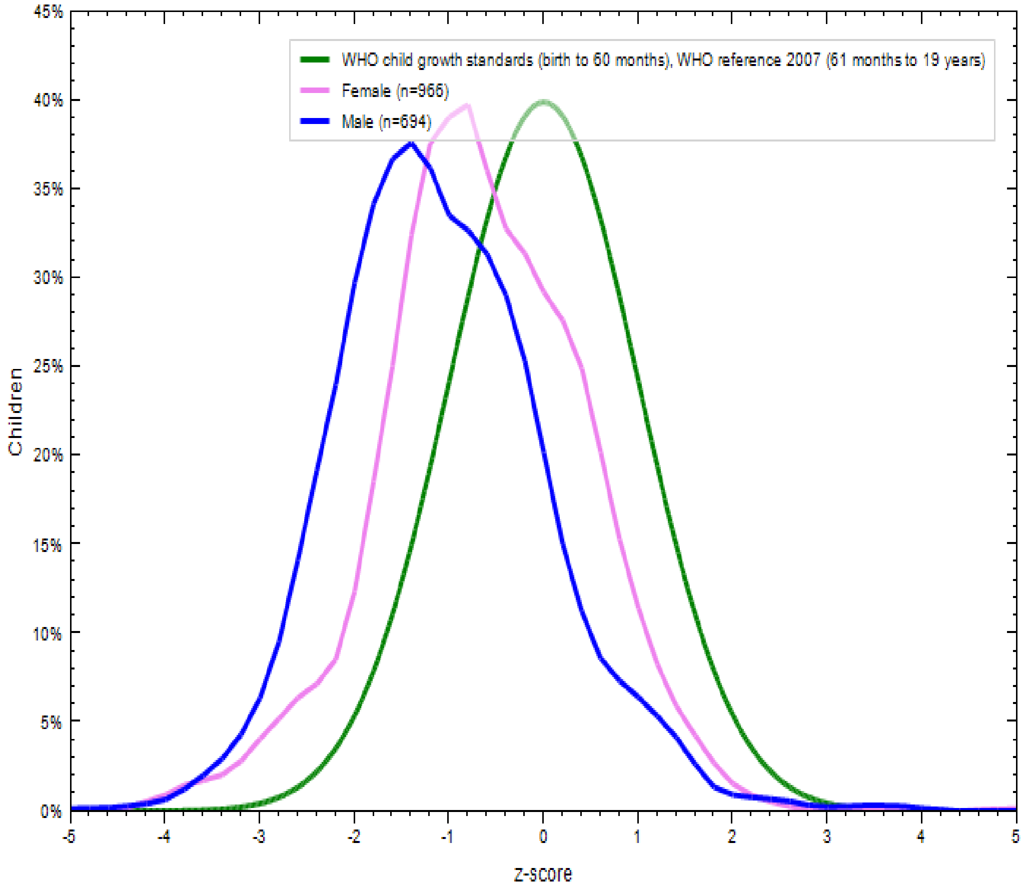
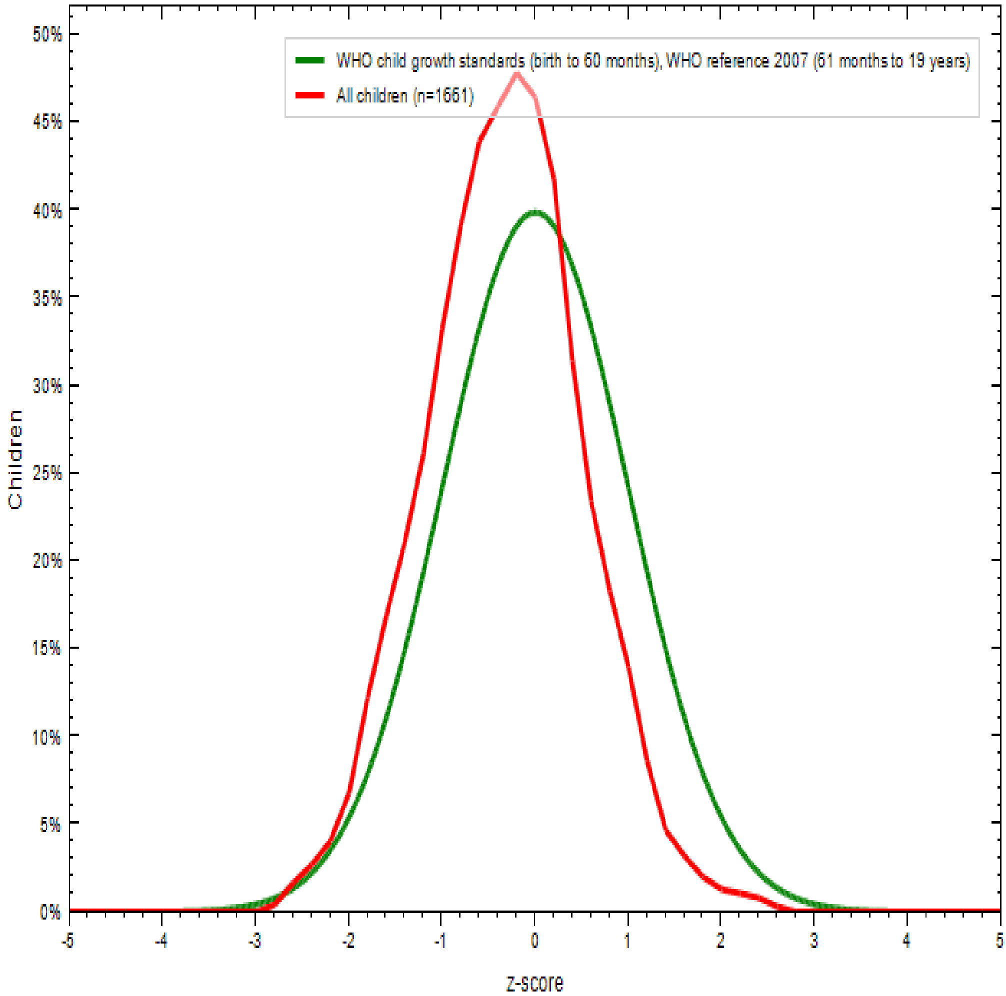


Figure 7.2 shows a separate plot for the HFAZ score lines of UB boys and girls. UB boys lagged behind the UB girls in their HFAZ scores. UB girls HFAZ are much closer to the median of the growth charts derived from the measurements of children in the WHO Multicentre Growth Reference study than the boys. UB boys and girls hence show a growth problem in terms of height-for-age. using the cut-off point for <-2SD for stunting, reading from the graph, it can be seen that about 15% of UB girls are stunted as compared to the about 32% of the boys who fall below the -2SD. Using the cut-off point of <-3SD to assess severe short-for-age/stunting, about4-55% of UB girls and 5- 7% of UB boys are severely stunted.

Figure 7.3
UB: BMI-for-age Z-scores of all children compared to WHO Reference 2007



This figure denotes the BMI-for-age of all UB children. The BAZ score line of the children indicates that about 5- 7% of the children are wasted and thin, falling below the -2SD. These wasted children will be analysed by gender in the graph below.

Figure 7.4
UB: Boys and Girls compared to WHO Reference 2007 BMAZ

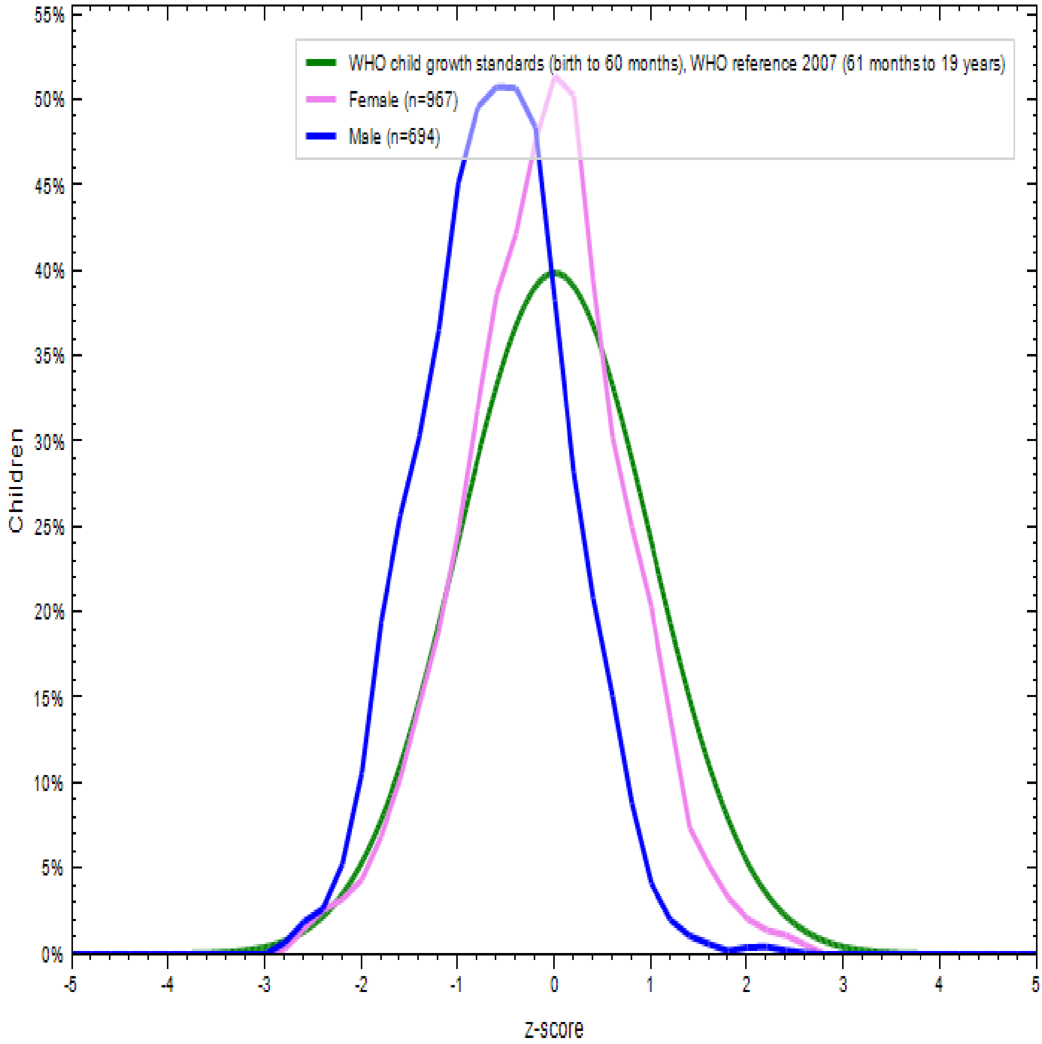


Figure 7.4 separates the BAZ lines for UB boys and girls. The graph shows that 12% of the boys fall below -2SD and hence wasted. Both z-score lines for boys and girls shows a bell shaped distribution but the boys have the average z-score of about -1SD while 50% of the girls have the same z-score of 0 as the reference. Higher percentages of girls (51%) and those of boys (50%) at the peak of the curves are much higher than 40% of the normal distribution z-score line indicating that the UB sample is not normally distributed in terms of BMI-for-age. None of both UB boys and girls is severely wasted.

Figure 7.5
UB: Weight-for-age of all children compared to WHO Reference 2007

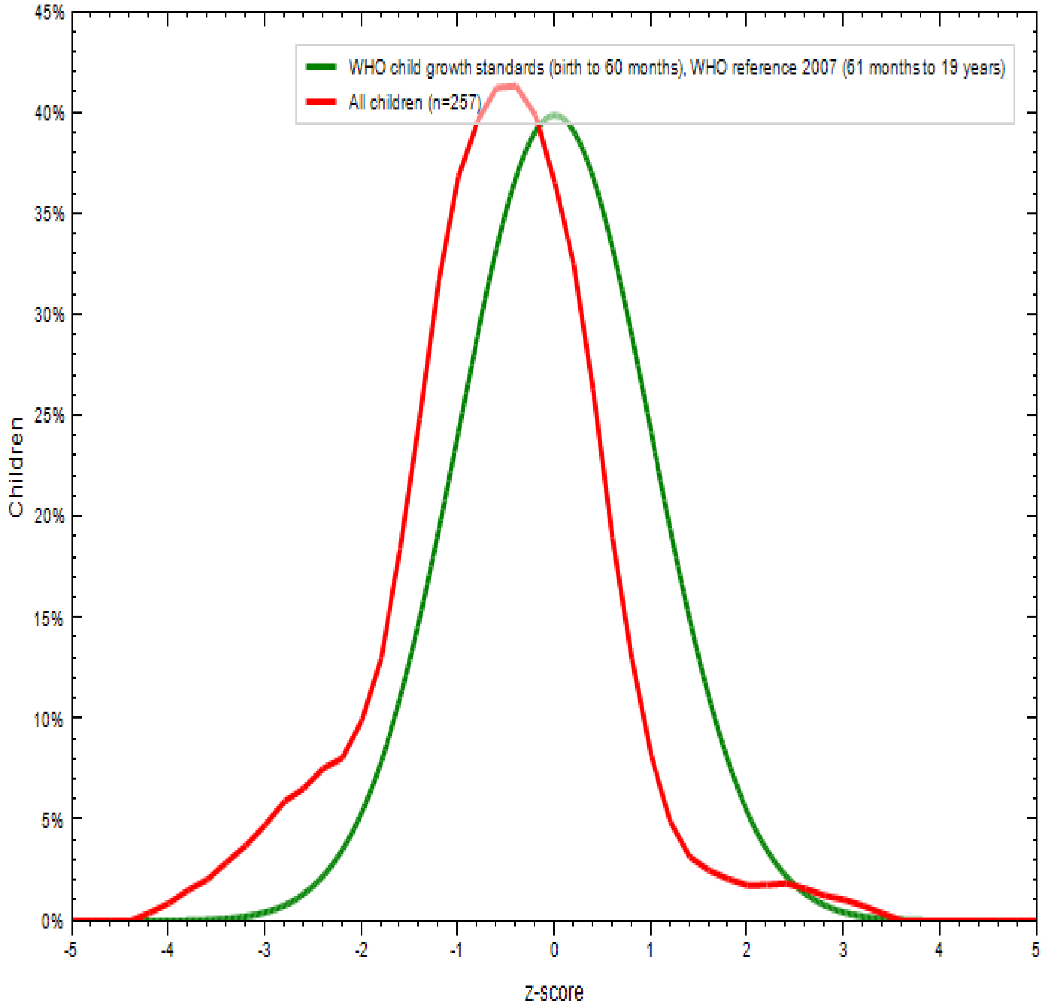
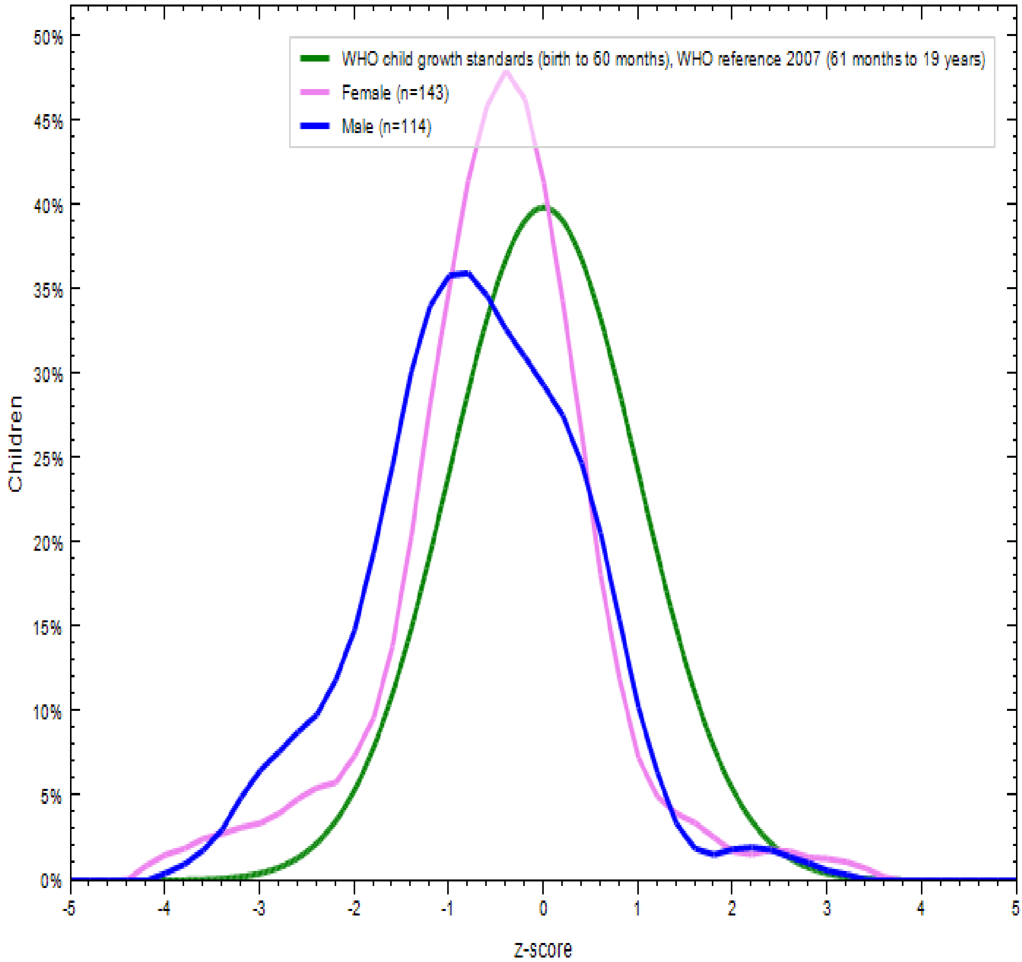


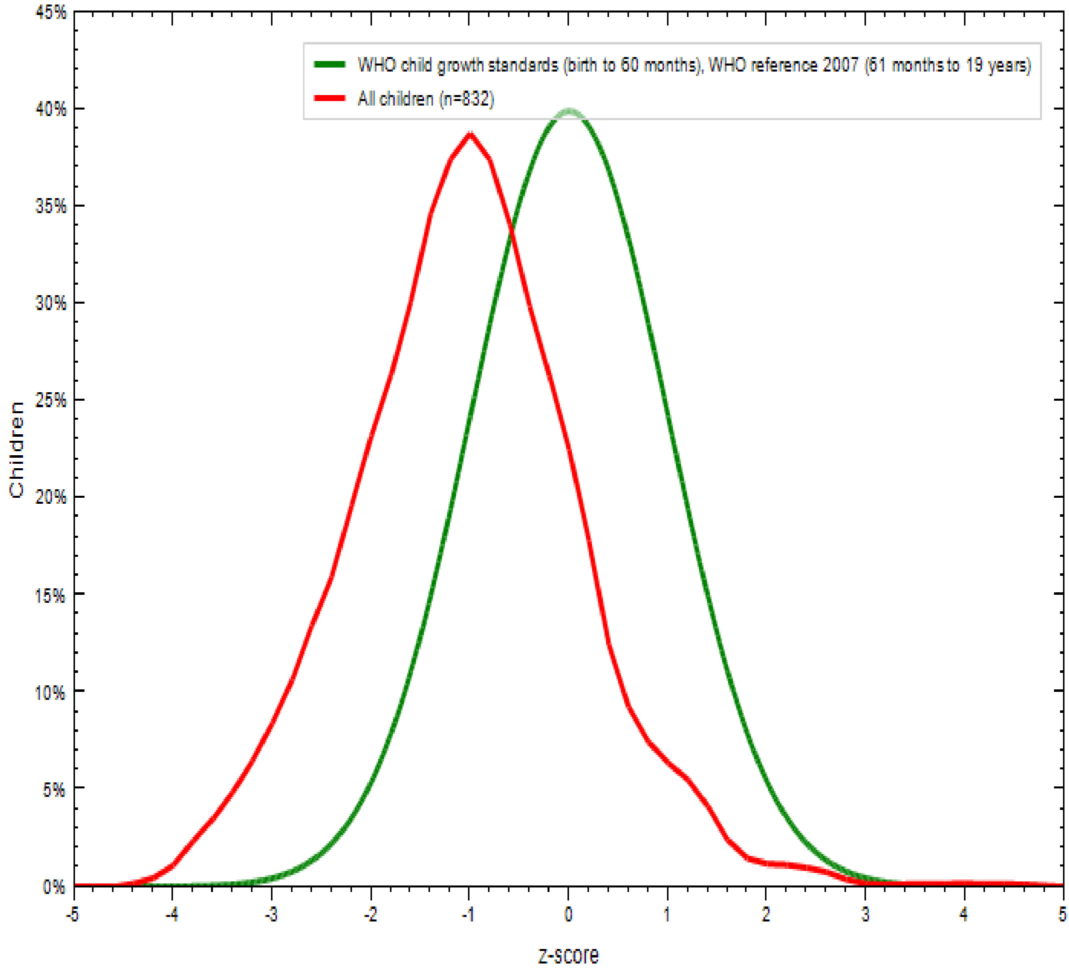
Figure 7.5 depicts WFAZ score lines of all Ub children. Those that fall below -2SD are wasted and those below -3SD are severely wasted. The z-score line shows 12% of UB children as wasted. The z-sore line indicates that 7% of the UB children are severely wasted.

Figure 7.6
UB: Weight-for-age of Boys and Girls compared to WHO Reference 2007



This graph depicts 10% and 17% of the UB girls and UB boys respectively being wasted while about 4% and 7% of girls and boys are severely thin or wasted. The UB boys indicate they lag behind the UB girls in terms of their WFAZ score lines. The UB boys however overlap and shows possible risk of overweight at the z-score line > +1SD. Some 2-3% of both UB boys and girls indicate that they are overweight and about 1% of the UB girls showing obesity at Z-score > +3SD.

Figure 7.7
VAL: Height-for-age of all children compared to WHO Reference 2007



The above graphs indicates that HFAZ score line for all VAL children lag behind the WHO Reference with the median of -1.2 SD. Almost 25% of the VAL children are stunted while about 10% are too short-for-age or severely stunted. About 6% of these children are facing possible risk of being overweight at the HFAZ score line >+1 SD while 2% are above the +2SD score line and are hence overweight.

Figure 7.8
VAL: Height-for-age of Boys and Girls

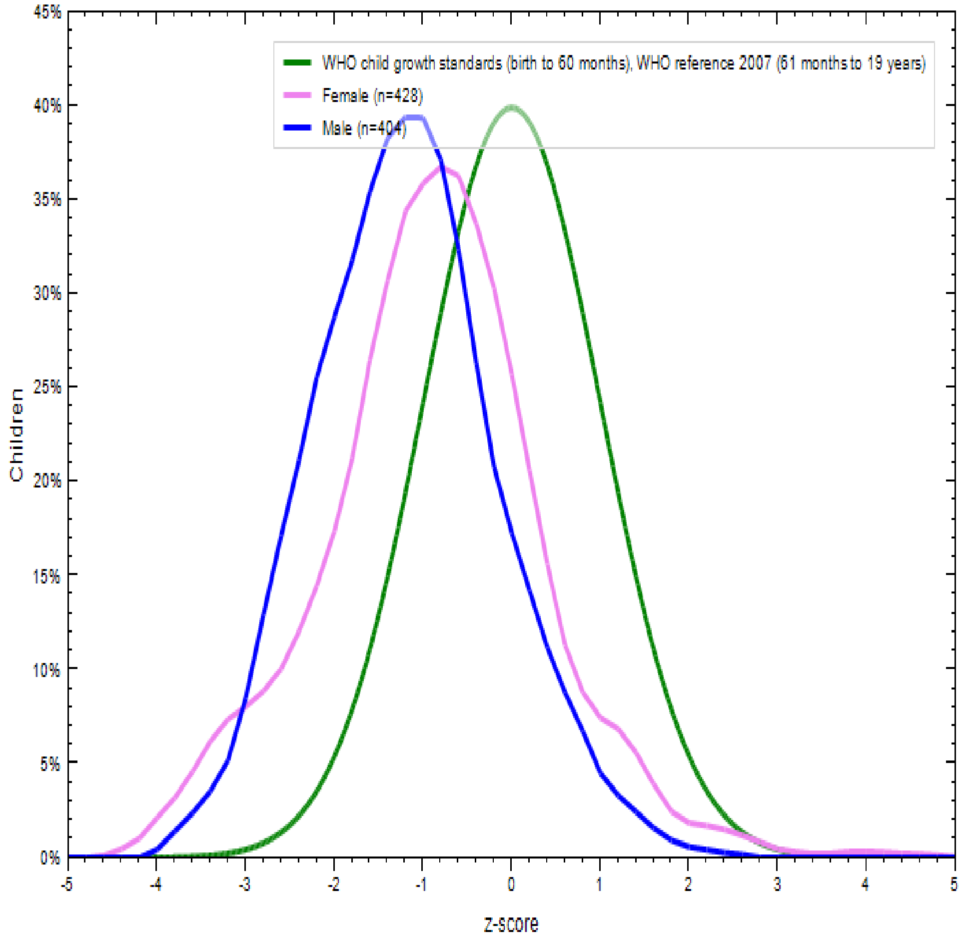
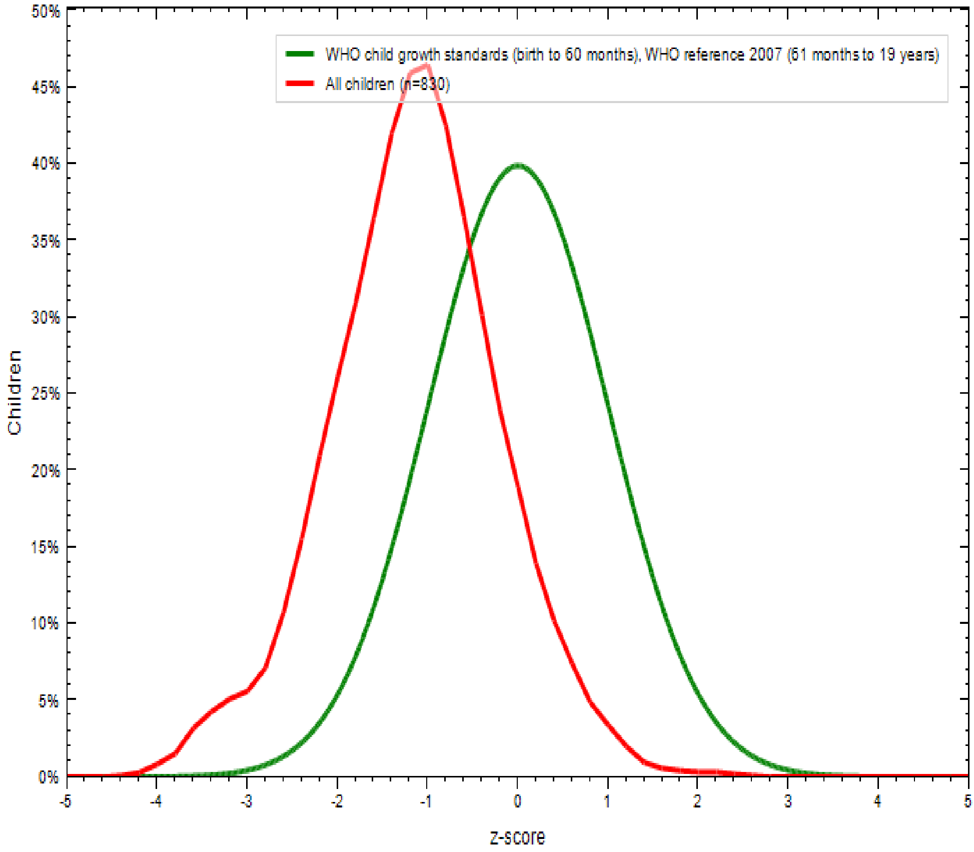


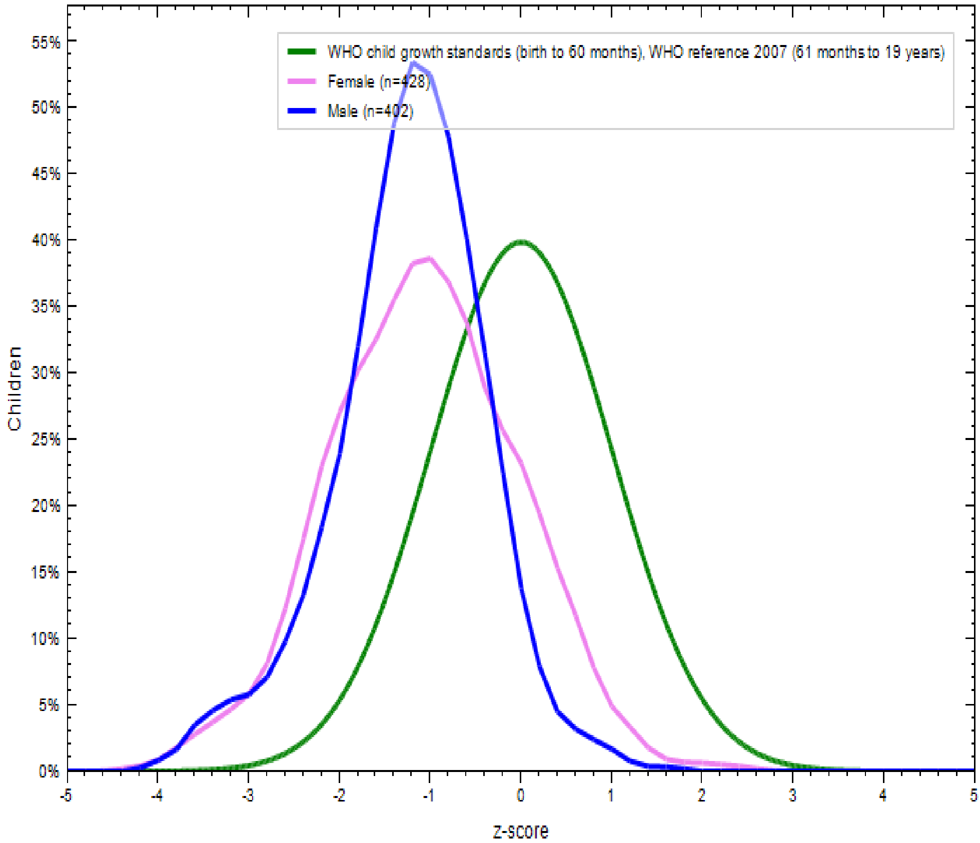
Figure 7.8 depicts VAL boys lagging behind the VAL girls Z-score line that lags behind the WHO normal distribution score line. UB boys have a median of -1.6 SD while the VAL girls show the median of -1 SD as compared to WHO reference. About 20% and 30% of VAL girls and boys respectively are stunted while about 8% of VAL girls are severely stunted and also 8% of VAL boys are too short for age. This sample also had tall children that fell within normal range.

Figure 7.9
VAL: BMI-for-age for all children



In this graph, VAL children are depicted as 31% wasted and 7% severely wasted. Their median is -1.4 SD and about 46% of the children have the median around -1.4 SD of the reference line. VAL children lag behind the WHO reference for their BMI-for-age.

Figure 7.10
VAL: BMI-for-age of Boys and Girls



VAL children in this graph are showing similar median z-score of -1.4 SD for both boys and girls. Both VAL boys and girls also show 30% wasting and 6% of them being severely wasted respectively.

Figure 7.11
VAL: Weight-for-age of all children compared to WHO Reference 2007

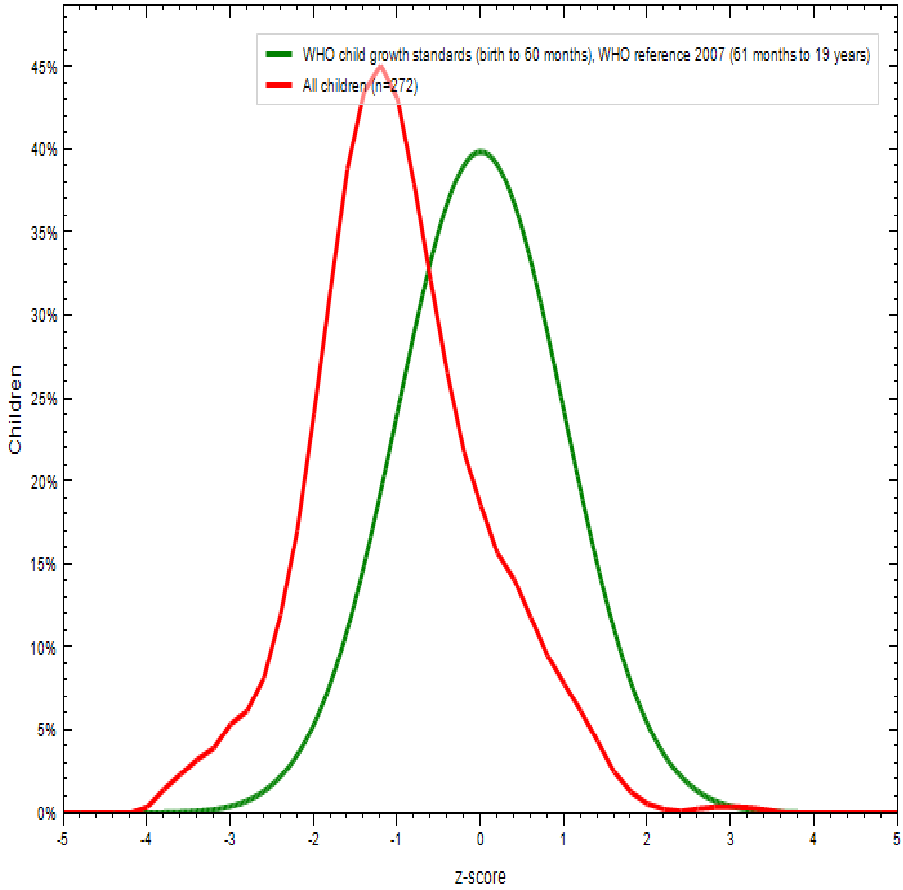
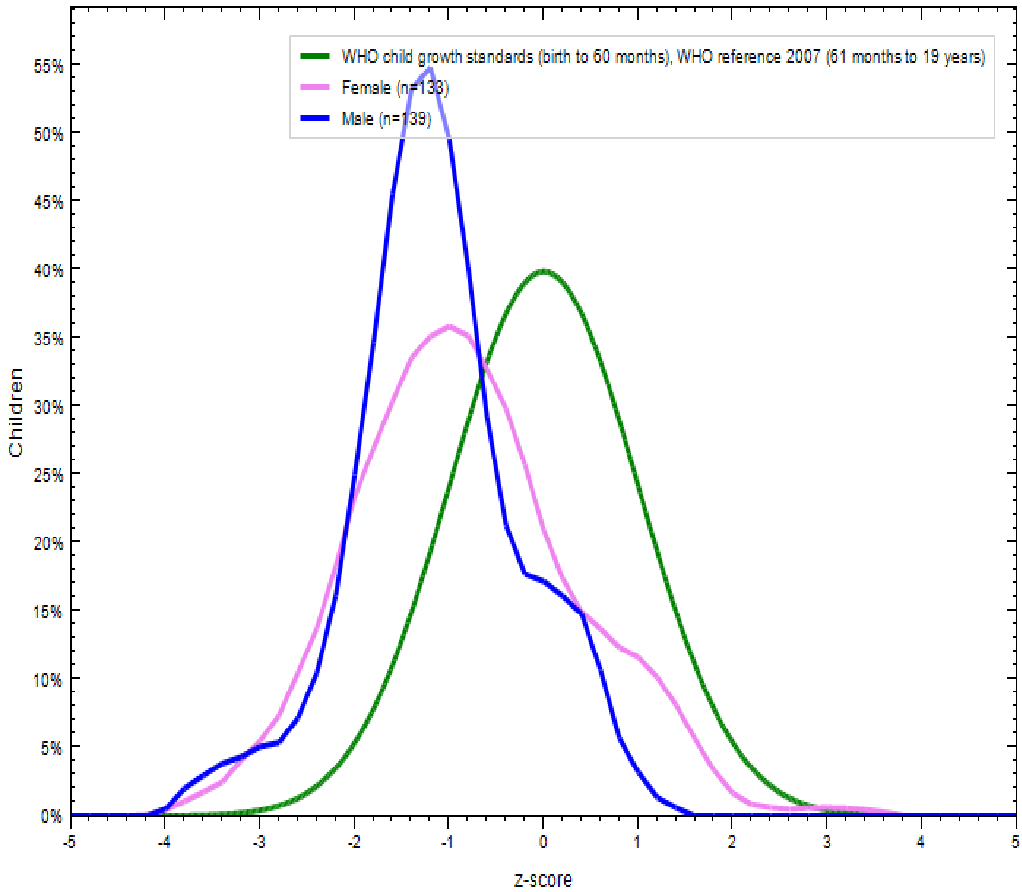


Figure 7.11 depicts all VAL children together having WFAZ score line of those children between 6-10 years of age indicating 33% wasted and 5% severely wasted at <-3 SD.

Figure 7.12
VAL: Weight-for-age of Boys and Girls compared to WHO Reference 2007



The above figure shows the Z-score line of VAL WFAZ for boys and the one for girls. The shapes of both sexes are not showing normal distribution with underweight estimated at 25% for both boys and girls. Few of the boys, about 1% are at risk of overweight while 12% of the girls are at risk and about 1% are overweight and a possible case of 0.5% of the girls being obese >+3 SD.

7.5 Coefficient of variations between the two studies

Comparisons between the UB and VAL CV's indicate that weight has the highest CV amongst the eleven measurements taken. UB and VAL girls range from (12-17%) and (15-25%) respectively and boys showing both UB(12-16%) and VAL(10-20%) variation range.

The computation of CV's in this study will allow this data to be used as a baseline study so that subsequent studies can monitor any changes in the CV's that may take place..

7.6 Stunting

Stunting was prevalent in both UB and VAL children. VAL boys (39.01%) and UB boys were (10.2%) stunted while the girls from VAL were not stunted.

7.7 Wasting

The frequency of wasting was assessed by comparing the mean weight for age, against the NCHS 5th, 50th and 95th centiles. The NCHS 5th centiles was the cut-off point for wasting at all age groups.

Of Vaalwater boys, 47.2% of boys were below the NCHS 5th centiles and 34.7% of the girls were underweight. None of the Ubombo boys and girls was wasted.

7.8 Body Mass Index (BMI)

The BMI cut-off point of the CDC weight-for-age 5th percentile was used as a benchmark. Of the VAL children 8.62% boys were underweight and 26.4% girls were also underweight.

7.9 Malnutrition in the two groups

Of the two groups the Vaalwater children particularly the boys were malnourished while the UB children both boys and girls show relatively healthy weight.

7.10 Secular trends

Most international studies indicate that ten years is not adequate to demonstrate secular trend in humans. Some studies showed secular trend in weights after twenty years and skeletal improvements were only reported after forty years.

Kgamphe small sample data , although not conclusive due to small sample size, showed marginal increases in mean weight ten years later after the Kgamphe-Cameron data but only at 6.0 and 7.0 year olds of the Vaalwater children.

7.11 Future publications

Bogin and Beydoun, (2007), offered a hypothesis that early life under nutrition and disease, prenatal and postnatal, inhibits the growth of the legs and promotes a metabolic syndrome leading to greater body fatness. They assessed the nationally representative sample of 8,639 of the United States population using the NHANES 111 of 1988-1994. Their findings were that the BMI is loosely associated with body fatness (sum of four skinfolds) and influenced by sitting height ratio (SHR=sitting height/stature). Adults with relatively longer legs have lower BMI and body fatness in both sexes and all ethnic groups. Given the historical impact of Apartheid and poverty in South Africa and the region, it would be useful to test this hypothesis in the follow-up future studies.

Health and wellbeing studies comparing rural populations are important. (Case and Deaton, 2005), compared rural Indian population of Rajasthan and the shack township dwellers of Cape Town. The two areas are rural, with income level ratio of 4:2:1 for South Africa and 3:2:1 for Rajasthan, respectively in terms living standards and income. South Africans were taller and heavier than Indians but both reported similar list of symptoms of ill-health. Their findings were that urban women in South Africa have fully caught up with black American women in the prevalence of obesity and are catching up in terms of hypertension; they experience many of the diseases of affluence without experiencing affluence itself.

More analysis and assessment of the health and wellbeing in UB and VAL children needs to be correlated with the changing patterns of their anthropometric data over time, particularly the use of their changing Coefficient of Variation over time. The computation of CV’s in this study will allow this data to be used as a baseline study so that subsequent studies can monitor any changes in the CV’s that may take place.

Consideration must also be given to pooling metrical mean values in order to estimate national means for rural and urban South African populations. In this way, more reliable and standardised methodologies and growth charts can be drawn.

7.12 Growth Standards: Importance of Local Growth Charts

It has been established that "Growth standards are indicators for normal growth of children and growth charts are important tools for their growth monitoring" (Al-Amaud , 2004).

In this thesis an attempt was made to start a process to establish South African rural standards. Although children from different populations differ in their growth patterns, it is important to create national standards for the growth of children in each population to develop local growth charts. This process however requires compliance with World Health Organization (WHO) criteria particularly in respect of sample sizes.

7.13 Recommendations

During the Kgamphe and Cameron data collection period, a questionnaire was circulated amongst the Vaalwater children on their dietary intake. Most common in the list was maize meal, tea, sugar, and sometimes they had meat, and some had beans. More detailed nutritional studies will be needed to explain lack of accelerated growth spurt at adolescence in both Ubombo and Vaalwater children.

(Napier and Oldewage-Theron, 2004), did a study on the level of malnutrition in a primary school (aged six to 13 years) in an informal settlement that provided the feeding programme. Reports from their biochemical tests indicated that zinc and ferritin levels were lower than the normal range for children in this age group. The mean dietary intake indicated that the children took in less than 71% of their daily energy needs.

From this study, Zinc and ferritin levels were not assessed. The request to list 20 top food purchased by the VAL community indicated that animal protein was the 12th on the list of the top 20 foods purchased. The low zinc and ferritin is in keeping with the low intake of green vegetables, fish and whole grain products as reflected in the top 20. This might have contributed to the prevalence of malnutrition in the sample.

School health programmes including deworming, feeding and micronutrient iron supplements through health education have a potentially beneficial effect on the health and education of schoolchildren (Ulukanligil and Seyrek, 2004).

The conclusions were made also considering that intergroup variations tends to track environmental conditions in that faster or earlier development in females is correlated with mortality e.g. African “Pygmies”, and Philippine “Negritos”, and the Hiwi of Venezuela populations that are characterized by faster child-juvenile growth for their adult body size. In these societies, sub adult survival is low and puberty, menarche and first reproduction are relatively early suggesting selective pressure for accelerated development in the face of higher mortality (Walker , 2006).

7.14 Conclusions

7.14.1 Aims of the Research

To generate distance growth reference charts for height, weight, sitting height, head circumference, relaxed upper arm circumference, bi-iliac and biacromial diameters and four skinfolds from the biceps, triceps, sub-scapular and supra-iliac sites for Ubombo (UB) and Vaalwater(VAL) children of school going age groups. The 6 year olds of the UB and VAL data were too few for use in the final conclusions.

7.14.2 Conclusion

This aim was achieved in that a mixed-longitudinal study was designed and implemented. The distance growth charts for boys and girls from 6-18 years were plotted as means ± 2 SD for all variables viz: height, weight, sitting height, head circumference, relaxed upper arm circumference, bi-iliac and bi-acromial diameters and the four skinfolds, from biceps, triceps, sub-scapular and suprailiac sites.

The distance curves were smoothed using the polynomial trend lines of the 5th order of the excel spreadsheet. When comparing the UB and VAL data with other children from the other regions, it was indicated graphically that both UB and VAL data are more stunted than the children of the same age groups and sex from South Asia and sub-Sahara Africa. UB and VAL children were stunted within the range of China and the Caribbean children.

Height distance data of UB and VAL boys were below the mean height for age at all ages from 6.0-12.0 years. Although they were relatively low they maintained the consistent height gains below their counterparts from Denmark, Bulgaria, Belgium, UK and USSR. The remarkable feature of both UB and VAL data is that after 12.0 ears their data fall sharply and remain low until the age of 18.5 years. This may be confirmed by higher sample sizes. If this phenomenon persists, then the 12.0 year old are most vulnerable and may need special attention during interventions.

7.14.3 Height-for-age

The standardised methods used in the collection, editing and analysing of the UB and VAL data helped in the production of meaningful results obtained in this thesis. Height-for-age measurements can be negatively impacted by long hair on the subjects measured. The use of specific head landmarks and the availability of an expert goes a long way in obtaining accurate and reliable height measurements.

7.14.4 Weight-for-age

Weight for age comparisons to other countries indicated that UB girls were consistently falling below their counterparts whereas the VAL girls showed a remarkable catch-up at the age of 17.5 years where they reach the average height of the tallest girl of about 168.0 cm from Denmark.

7.14.5 BMI-for age

BMI-for-age and weight-for-age results were almost always similar. These are useful measurements that should correlate on each subject.

7.14.6 Coefficient of Variation

Both UB and VAL girls showed high coefficients of variations for weight UB(12-17%) and VAL(15-25%) and the boys were UB(12-16%) and VAL(10-20%) respectively..

7.14.7 Comparison between the NCHS and the WHO Reference

The WHO Reference 2007 has remarkable features in that, it facilitates easy computations of prevalence rates and the 95% Confidence Interval through the use of AnthroPlus software. This is a major improvement in the undertaking of analysing longitudinal studies and many human biologists would be encouraged to revisit their previous data and compare their results with those of WHO Reference 2007. The software is “diagnostic” and would need to be evaluated over time in terms of its contribution to the potential increase in longitudinal studies of the 6 to 18 year olds, particularly in the rural environments.

Different results between NCHS and WHO Reference were obtained. A high estimation of using NCHS indicated Stunting was prevalent in VAL (39.1) and UB ((10.2) in boys but not in girls from both areas. VAL boys of ages 12.5 and 14.5 were underweight (18.1%) and VAL girls were 26.4% underweight. UB boys and girls indicated BMI of healthy weight for all ages. More detailed results are given below.

7.14.8 Peak Height Velocity

- Using the NCHS the estimated Peak Height Velocity (PHV) was VAL (± 4.2 cm/year at age 15.5 years) and UB (+_5.5 cm/year at age 13.5 years for girls.
- Those rural black children from Vaalwater have the same pattern of secondary sexual development characteristics as white European or American children.

7.14.9 Conclusion

Vaalwater children were delayed by about 6-8 months before reaching their optimal secondary sexual characteristics milestones.

Black South African females from VAL were lagging behind their western counterparts in Secondary sexual characteristics. On the contrary, (Henneberg and Louw, 1990) found that Cape Coloured girls from high socio-economic conditions were not different from their western counterparts and were sometimes better. These two local and longitudinal studies were looking at children under different socio-economic conditions. The conclusion we draw from the VAL children is that their poor environmental conditions delay their optimal achievements of their sexual secondary characteristics.

The following measurements were assessed but were not analysed; in boys testicular volumes, assessment of their undescended testicles, and their pubic hair developments. In girls, the menarcheal age was analysed and reported as delayed as compared to their western counterparts, breast and pubic hair development were also assessed.

That there is a positive secular trend in the growth and development of rural schoolchildren possibly flowing from improved conditions under the new South African political dispensation.

7.14.10 Summary of the Conclusion

Only weight-for-age, height-for-age, BMI-for-age and the Peak Height Velocity for both sites were reported as per the results below. Weight-for-age could only be assessed up to 10 years of age. Other methods could be used be used to estimate weight-for-age beyond 10 years but the BMI-for-age estimation of underweight and obesity is more effective.

WHO Reference, 2007 improved the quality of the results and analysis. There are many more improvements that will be required to fully exploit the required analysis for the data reported in this thesis. The AnthroPlus does not sufficiently analyse the longitudinal aspects of data at all ages. Further measurements will be analysed as the WHO Reference and the AnthroPlus software gets more advanced.

7.14.10.1 Assessment of sexual characteristics from Vaalwater boys and girls

Science and medical students from the University of the Witwatersrand who participated in the study took the secondary sexual characteristics measurements. The author did not analyse the data but captured and compiled the data as indicated in the appendix. PHV was estimated for both VAL and UB children and the age at menarche was published in international scientific journals.

7.14.10.2 Summary Findings: Aims of the research

Local distance reference charts for rural children from both Ubombo and Vaalwater on height, weight, sitting height, head circumference, relaxed upper arm circumference, biacromial and biiliac diameters, and skinfolds from the biceps, triceps, sub-scapular and suprailiac sites, through a mixed-longitudinal study design for 7-18 year old boys and girls were designed, constructed and tabled in this thesis.
Prevalence rates for disparities in physical growth, particularly weight-for-age, height-for-age and BMI-for-age and estimates of underweight and overweight including obesity, wasting and stunting percentages using WHO Reference 2007 were estimated such that:

7.14.10.3 Summary of the conclusion

KGA data and the 6 year olds from UB and VAL data had very small sample sizes and these were excluded in the final conclusions.

Weight-for-age

VAL children: VAL girls were 1.9(0.6%, 5.7%) 95%CI severely underweight and 11.7 (6.7%, 19.6%) 95%CI underweight with mean of (-0.89) and SD (1.09). VAL boys were 33.3(1.1%, 9.2%) severely underweight and 12.6(7.1%, 21.3%) 95%CI underweight with mean (-1.1) and SD (0.98).

UB children: UB girls showing 1.5" (0.2%, 10%) "95%CI severely underweight and 5.9" (2.6%, 12.7%)" 95%CI underweight with the mean of (-0.38) and SD (1.05).

Height-for-age

VAL children: VAL girls were severely stunted 5% (2.7%,8.9%) 95% CI and stunted 16.1% (11.6%,21.9%) 95% CI with mean (-0.91) and SD (1.2). VAL boys and girls indicated that they are 3.3%(1.7%,6.6%)95% CI severely stunted and 22% (16.7%,28.5%) stunted at the mean(-1.21) and SD (1.07), with the most severely stunted being the 14 year olds 4.8% (1.1%,18%) 95% CI and 40.5% (26.3,56.4%) stunted.

UB children: The UB girls showed 2.2" (1.2%, 4.1%)" 95% CI severely stunted and 9.1" (6.5%, 12.6%)"95% CI stunted with mean(-0.66) and SD (1.11) while UB boys were 3.3" (1.9%, 5.9%)"95% CI severely stunted and 19.4" (15.2%, 24.5%)" 95% CI stunted at mean (-1.08) and SD (1.11).

BMI-for-age

VAL children: VAL children are severely wasted 3% (1.8%,5.2%) 95% CI and 16.5% (13.2,20.4%)95% CI wasted at the mean(-1.44 and SD(0.93). The 10-14 year old are mostly affected 5.4% (3%,9.6%) 95% CI severely wasted and 26% (20.4%,32.5%) 95% CI wasted.

UB children: 2% (0%,0.7%) 95% CI of all the UB girls are obese and 1%(0.3%,4.1%) of 6-9 year olds are obese while 2.6% (1.1%,6%) of them were overweight. UB boys by age showing their BMI-for-age. The 13 and 14 year old UB boys are 1.4% (0.2%,9.8%) 95% CI and 1.3% (0.2%,9.2%) 95% CI wasted respectively and of the 13 year olds, 1.3% (0.2%,9.2%) 95% CI were overweight while 1.3% (0.2%,9.2%) 95% CI of the 13 year olds were also at risk of being overweight.

To assess secondary sexual development of Vaalwater and estimated growth rates at puberty e.g. Peak Height Velocity(PHV).

Peak Height Velocity and Menarche:

VAL Children: VAL girls reached peak height velocity and menarche at 14.5 years and PHV = 6.02 cm/yr while boys reached their PHV = 6.35 cm/yr at 13.5 years of average age.

UB Children: UB girls reached their peak height velocity and menarche at 13.5 years and PHV = 10.73 cm/yr and the boys reached their PHV = 5.97 cm/yr at the estimated age of 15 years.

Vaalwater and Ubombo children need intervention to remedy their growth and development deficits. Chapter 8 attempts to integrate all the methodologies, results and conclusions made from comparing UB and VAL data with several standards and reference data. The chapter highlights the type of questions that were intended to be answered by the study and recommendations are made on how the findings of the research may be put to good use within communities and particularly families.

CHAPTER 8

INTEGRATED DISCUSSION OF THE RESULTS

8.0 INTRODUCTION

8.1 Comprehensive discussion of the results of the Thesis

Chapters 1 to 7 of this Thesis introduced the topic and concluded with the results obtained as compared to different reference data and growth standards. In this chapter, an integrated discussion has been adopted in order to highlight the meaning of the results obtained, application of the results obtained and their relevance to the current debates amongst the practitioners of Auxology. Key to the integration of the findings in this thesis, are the observations that add to our understanding of the growth and maturation of rural Black South African children, the new knowledge gained in the growth pattern of these children, and the reasons why certain standards and reference data were used for comparison. Recommendations were proposed and suggestions were made regarding the preferred reference data and standards, particularly within the South African context and finally, this chapter concludes with the objectives of the thesis and how these were reached.

8.2 Key questions raised in the Thesis

8.2.1 Auxology: History, questions raised and current knowledge

Growth is a science which uses and incorporates the disciplines of anatomy, physiology, biophysics, biochemistry and biology. It is not a series of charts of height and weight. Anthropometry is the technique of expressing quantitatively, the form of the body. The form of the body is shaped by its genetics and the environment. Optimal environmental conditions have positive impact on the health and well being of the body and the reverse is also true. The children under study lived during the negative environmental impact introduced by the Apartheid system in South Africa. Although the study began towards the end of the Apartheid period, all the children were born and lived in a rural setting as prescribed by Apartheid.

The questions raised were: Do the South African Rural Black children grow like any other children elsewhere or not? What type of study would be most informative? What anthropometric comparative measures would be most informative? What standard or reference data would be most suitable? How do rural boys and girls from UB and VAL differ in their respective growth and development profiles? How would the development of local rural black reference charts differ from other internationally accepted reference data? What will be the recommended reference data for South Africa? How would the findings of the research be possibly applied in practice by the government and the South African communities?

8.2.2 Global questions on the health and well being of children

Global questions on the health and well being of children includes whether governments fully comply with the legally binding UN Convention on the Rights of the Child. The four core principles of the Convention are non-discrimination; devotion to the best interests of the child; the right to life, survival and development and respect for the views of the child. It is the harmonious development of every child and the setting of standards in health care; education; legal and social services that legally bind governments to incorporate the full range of human rights, be it civil, cultural, economic, political and social rights in their constitutions.

This Thesis, reports on the growth and development of the 7-18 year old rural Black children at the end of the Apartheid period in South Africa. South Africa ratified the UN Convention on the Rights of the Child on the 16th June 1995, without entering any reservations (UN Doc A/44/49, 1989). The Convention considers people under 18 years old to often need special care and protection that adults do not. The Convention spells out children’s right to survival, to develop to the fullest; to protection from harmful influences, abuse and exploitation and to participate fully in family, cultural and social life.

The hypothesis postulated in this Thesis was that the South African Rural Black children grow like any other children in the Western world in terms of the timing and magnitude of the growth and development milestones before, during and after puberty.

8.2.3 Government responsibilities: role of Anthropometry

South Africa has a constitution that is transparent and that fulfils the obligations of the UN Convention on the Rights of the Child. The country is committed to protect and ensure that the children’s rights are enforced. It is common knowledge that State parties to the

Convention are obliged to develop and undertake all actions and policies in the light of the best interests of the child.

Anthropometry is the study of dimensions and abilities of the human body. Its techniques involve taking of body measurements without exposing the subject to any health risk and yet provides researchers with comprehensive data that can be turned into information for informed decisions and interventions. The techniques are non-invasive, fairly accurate, and reproducible. They provide substantial data that can be used to diagnose the well being of an individual child and populations.

8.3 Research Findings

8.3.1 The value added by this research: Observations that add to our under-standing of the growth and maturation of rural Black South African children

A mixed-longitudinal study from Ubombo (UB) and Vaalwater (VAL) sites allowed for a comparison of how boys and girls from the same environment and background grow differently and hence illustrate the unique pattern of sex difference in growth status. Due to sampling variation, the overall number of children at extreme age groups, 6 year olds and 18 year olds were small. The 6 year olds in particular, were too few to include in the final analysis.

Eleven anthropometric measurements from height, weight, sitting height, bi-acromial and bi-iliac diameters, head and relaxed upper arm circumferences, and skinfolds from biceps, triceps, supra-iliac and sub-scapular sites were taken on all subjects.

Select metrical traits from height, weight and relaxed upper arm circumferences were used for comparison to other reference data.

Select metrical traits of boys and girls from the same cultural, educational, nutritional pool and environment i.e. from Ubombo and Vaalwater were found to show that boys and girls have different patterns in growth status at certain age groups. This study can be used as a source of reference for the South African rural black children.

8.3.2 Height data

Current debates in the growth and development of children include the relationships between different measurements of children from the same environment (poor) as compared to children from well-off environments. The boys and girls from the same poor environment have different patterns of growth at each age group. Height is the sensitive indicator of chronic environmental impact whereas weight measurements have been used to estimate the impact of short term disasters or drought conditions.

Boys and girls from UB started with almost similar height measurements from the age of 7.5 to 10 years and then boys get an advantage from the age of 11.5 years. From 16.5 years onwards, the UB boys are much taller than UB girls by a margin of about 3 cm and the margin increases to about 4 cm at the age of 17.5 year. The peak height of UB girls is about 159.2 cm while that of boys is about 165.0 cm.

VAL girls on the other hand are taller than VAL boys from the age of 7.5 years to the age of 9.5 years by a margin of 2-3 cm. The VAL boys "catch up" the VAL girls at the age of 10.5 years and from the age of 14.5 years, VAL boys are consistently taller than VAL girls by a margin of 1-5cm until the age of 17.5 where the boys' peak height is 166.7 cm.

UB girls have PHV of 10.73 cm/yr at 13.5 years and VAL girls have PHV of 6.02 cm/yr at the age of 14.5 years. UB boys have PHV of 6.46 cm/yr at the age of 11.5 years and VAL boys have PHV of 6.35 cm/yr at the age 13.5 years, two years after the UB boys but a year earlier than VAL girls.

8.3.3 BMI: Recommended cut-off points of Cole et al. (2007)

Current debates and efforts to generate and use the best cut-off points for assessing the incidence of malnutrition as assessed by BMI were supported by Dr Cole and his colleagues in 2007 when they published tables of BMI cut-off points for children and adolescents. They presented new cut-off values for three classes of thinness, Grade 1, 2 and 3 such that BMI cut-off 17 to <18.5 is Thinness Grade 1, 16 to <17 is Grade 2 and < 16 as Thinness Grade 3 which corresponds to WHO adult classification. Grade 1 is hence less severe thinness than grade 3.

BMI does not measure adiposity or obesity but correlations between BMI and % fat derived from skinfold measurement would give an indication of BMI assessing body composition more than adiposity. This body composition correlates with sexual maturity and obesity in girls. Using different cut-off points for BMI seems to give differences in prevalences of thinness, underweight and obesity. The reasons why this is the case is because different standards use different data sets and different approaches.

Connolly, (2007), applied Ponderal Index (Weight/Height^3) as a true index in that it is dimensionless. Ponderal Index, like BMI, does not measure thinness or obesity. BMI (kg / m ^{2}) is not dimensionless and has been shown to perform better than Ponderal Index in the other populations studied. The results from Cole and colleagues suggest that the hazards of thinness are most severe in adults and least severe in infants. When UB and VAL data were compared to the Cole et al.'s cut-off points tables 8.1 and 8.2 below were generated indicating the differences between the UB and VAL boys and girls respectively from age 7 to 18 years.

Table 8.1

Table of Cole et al. (2007), BMI cut-off points compared to UB and VAL boys BMI

Age (yrs)	Adult cut-off point(16)	Underweight(17)	UB	VAL
7.5	12.41	13.09	15.80	14.80
8.5	12.45	13.17	15.20	14.70
9.5	12.57	13.34	15.60	15.70
10.5	12.77	13.58	15.10	15.20
11.5	13.03	13.87	16.20	16.60
12.5	13.37	14.25	16.30	15.10
13.5	13.83	14.74	16.40	16.10
14.5	14.35	15.28	17.30	14.95
15.5	14.86	15.82	17.60	16.09
16.5	15.36	16.34	18.50	17.22
17.5	15.81	16.8	19.30	17.31
18	16	17	20.23	20.00

The boxed figures at age 14.5 shows the VAL boys falling below the adult cut-off point 18.5. None of the UB boys fall below the adult cut-off point of 18.5 at all age groups.

Table 8.2

Table of Cole et al. (2007), BMI cut-off points compared to UB and VAL girls BMI

Age (yrs)	Adult cut-off point(16)	Underweight(17)	UB	VAL
7.5	12.27	12.95	16.06	14.66
8.5	12.37	13.08	15.61	16.41
9.5	12.53	13.29	15.59	15.05
10.5	12.78	13.59	15.68	15.05
11.5	13.15	14.01	16.84	15.09
12.5	13.65	14.56	17.34	15.29
13.5	14.2	15.14	19.55	15.70
14.5	14.75	15.72	19.37	16.09
15.5	15.25	16.22	20.08	17.67
16.5	15.63	16.62	20.99	18.71
17.5	15.9	16.89	22.25	19.46
18	16	17	20.09	20.00

8.3.3.1 Discussion and conclusions

The WHO reference 2007 allowed for individual boys and girls from UB and VAL to be assessed. This was because of the availability and use of AnthroPlus software. When applying the cut-off points of thinness and underweight as recommended by Cole et al. (2007), mean values of height and weight were used to estimate BMI per age and sex.

The WHO reference 2007 for BMI results show much higher estimates of overweight and obesity, where 2%(0%,07%) 95% CI of all UB girls are obese and 1%(0.3%,4.1%) 95% CI of 6-9 year olds obese and 2.6% of them being overweight and 2.9%(1.6%,5.1%) 95% CI of the 10-14 year olds and 0.7% of the 15-19 year olds were thin for age. The cut-off points by Cole and colleagues shows all UB girls from 7.5 to 17.5 years to be just above the adult cut-off point of 18.5 for each age group. None of the UB girls were either overweight or obese at all these age groups.

VAL girls on the other hand were also overestimated in terms of thinness at lower age groups from 10.5-15.5 years. The WHO reference 2007 estimated that 5.7%(2.6%,12%) 95% CI of the 10-14 years and 0.9%(0.1%,6.2%)95% CI of the 15-18 year old VAL girls are severely thin. Table 8.2 above indicates that at all age groups from 7.5-17.5, all VAL girls are above the adult cut-off point of 18.5 at all age groups.

Table 8.1 depicts boxed figures at age 14.5 that shows the VAL boys falling below the adult cut-off point 18.5. None of the UB boys fall below the adult cut-off point of 18.5 at all age groups.

Comparison between UB boys and girls indicate that girls are heavier than boys at almost all age groups. The differences are between 0.5-2kg between age groups 7.5-11.5 years and get bigger (2-5 kg) from the age of 12.5 years onwards. These changes are correlated to the secondary sexual characteristics and the onset of puberty. Girls begin to have weight advantage over the boys at puberty. The boys become thinner but much taller than girls. UB boys became taller than girls from the age of 13.5. The height gap between boys and girls from 13.5 years to 17.5 year is ±2.0cm. Girls show PHV of 10.73 cm/yr at 13.5 years and UB boys had PHV of 6.46 cm/yr at the age of 11.5 years. In this case there is a two year gap between boys and girls. The UB girls became much heavier and possibly fatter at the age of 13.5 years where on average the gap between girls and boys was about 5.0 kg.

None of the boys and girls was obese. Obesity is associated with sexual maturation in both boys and girls, but there is a difference by gender in that early maturing boys were thinner. The results in this thesis show that UB boys are late maturers.

The earliest sign of menarche occurred at 13.5 years on average in UB girls. Puberty in UB boys was shown by testicular volume level between 4 and 5 at the of age 10.5 years. By the age of 10.5 yrs most UB boys had gone past level 2 of both breast and genital development and pubic hair development stages. Sexual maturation status was based on Tanner genitalia stages for boys and breast stages for girls.

Maturation status should be taken into consideration when assessing child and adolescent obesity

8.3.4 Relaxed upper arm circumference

Measurements of the relaxed mid-upper-arm circumference (MUAC) have over time been widely used in the assessment of the nutritional status of children particularly in the under five year olds because it is relatively independent of age, (Zerfas, 1975). Zerfas developed the insertion tape and documented a number of errors associated with the use of conventional tapes including errors in reading the circumferences.

Mid-arm-circumferences have also been applied to assess maternal malnutrition and have an advantage in that it is simple and cheap, sensitive and less prone to mistakes. MUAC should be measured at the midpoint between the shoulder and the tip of the elbow on the left arm, while the arm is hanging down the side of the body and relaxed.

Different countries e.g Poland and America have different reference data apart from the universally accepted data provided by the WHO, (Jelliffe, 1966). Contrary to the weight for height indicator, there is not one set of universal cut-off points for interpreting MUAC. The most common norms used for comparison are those of Frisancho (1981). Table 8.4 and Table 8.5 below are the MUAC measurements of UB and VAL boys and those of UB and VAL girls against Frisancho 5^{th}, 50^{th} and 95^{th} percentiles used as norms for assessing nutritional status.

MUAC has been considered the most favourable in assessing under-nutrition and malnutrition, growth and development deficits in individuals and populations. MUAC does not however provide direct measure of Fat Free Body Mass(FFBM). Such direct measurement does not exist except by using Body Impedance Analysis (BIA) techniques used for assessing body composition.

The latest attempt to establish cross-sectional reference values for the mid-upper-arm circumference (MUAC), triceps skinfold thickness (TSF) and arm fat area (AFA) were those of Ozturk et al. (2009), on Turkish children and adolescents between the ages 6 and 17 years. These were from rural and urban areas, Ozturk used a multistage sampling method and the LMS method to calculate the MUAC, TSF and AFA curve parameters. The MUAC, TSF, AFA and fat % in each group were significantly higher in girls than in boys. The MUAC 50^{th} percentile ranged from 17.0 to 23.6 cm in boys and from 15.6 cm to 20.9 cm in girls. In UB and VAL girls, the 50^{th} percentile of MUAC ranged from 16.6 cm to 25.3 cm at UB and from 16.4 cm to 23.4 cm at VAL. The MUAC of UB boys ranged from 16.1 cm to 23.8 cm and at VAL the MUAC for boys ranged from 15.9 cm to 22.6 cm.

In this Thesis, the data from Frisancho (1981) MUAC reference percentiles were used for comparison. Figures 8.1 and Figure 8.2 below depict the 5th, 50th and 95th percentile lines from Frisancho (1981), which were smoothed by fitting polynomials while the mean MUAC values from UB and VAL did not need smoothing.

Table 8.3

Table of MUAC Frisancho norms compared to mean MUAC values for UB and VAL

Girls					
	MUAC (cm.)				
Age (yrs)	5	50	95	UB	VAL
7.5	16.4	18.3	23.1	16.6	16.4
8.5	16.8	19.5	26.1	16.9	16.6
9.5	17.8	21.1	26.1	17.4	17.4
10.5	17.4	21.1	26.5	18.1	17.7
11.5	18.5	22.4	30.3	19.5	18.2
12.5	19.4	23.7	29.4	20.6	18.5
13.5	20.2	24.3	33.8	21.5	19.1
14.5	21.4	25.2	32.2	22.8	20.1
15.5	20.8	25.4	32.2	23.6	21.1
16.5	21.8	25.8	33.4	24.4	22.2
17.5	22.1	26.4	35.1	25.3	23.4
18.5	22.2	25.8	32.5	25.1	23.7

Table 8.4

Table of MUAC Frisancho norms compared to mean MUAC values for UB and VAL

	Boys				
	MUAC (cm.)				
Age (yrs)	5	50	95	UB	VAL
7.5	16.2	18.7	23.1	16.1	15.9
8.5	16.2	19.1	24.5	16.8	16.1
9.5	17.5	20.1	25.7	17.1	16.7
10.5	18.1	21.1	27.4	17.7	17.2
11.5	18.6	22.3	28.1	18.2	17.7
12.5	19.3	23.2	30.3	19.9	17.9
13.5	19.4	24.7	30.1	19.2	18.5
14.5	22.1	25.3	32.2	20.3	18.7
15.5	22.2	26.4	32.1	20.5	20.1
16.5	24.4	27.8	34.3	22.2	21.1
17.5	24.6	28.5	34.7	23.8	22.6
18.5	24.5	29.7	37.9	24.1	25.1

Figure 8.1

MUAC of UB and VAL compared to the MUAC from Frisancho (1981) for girls

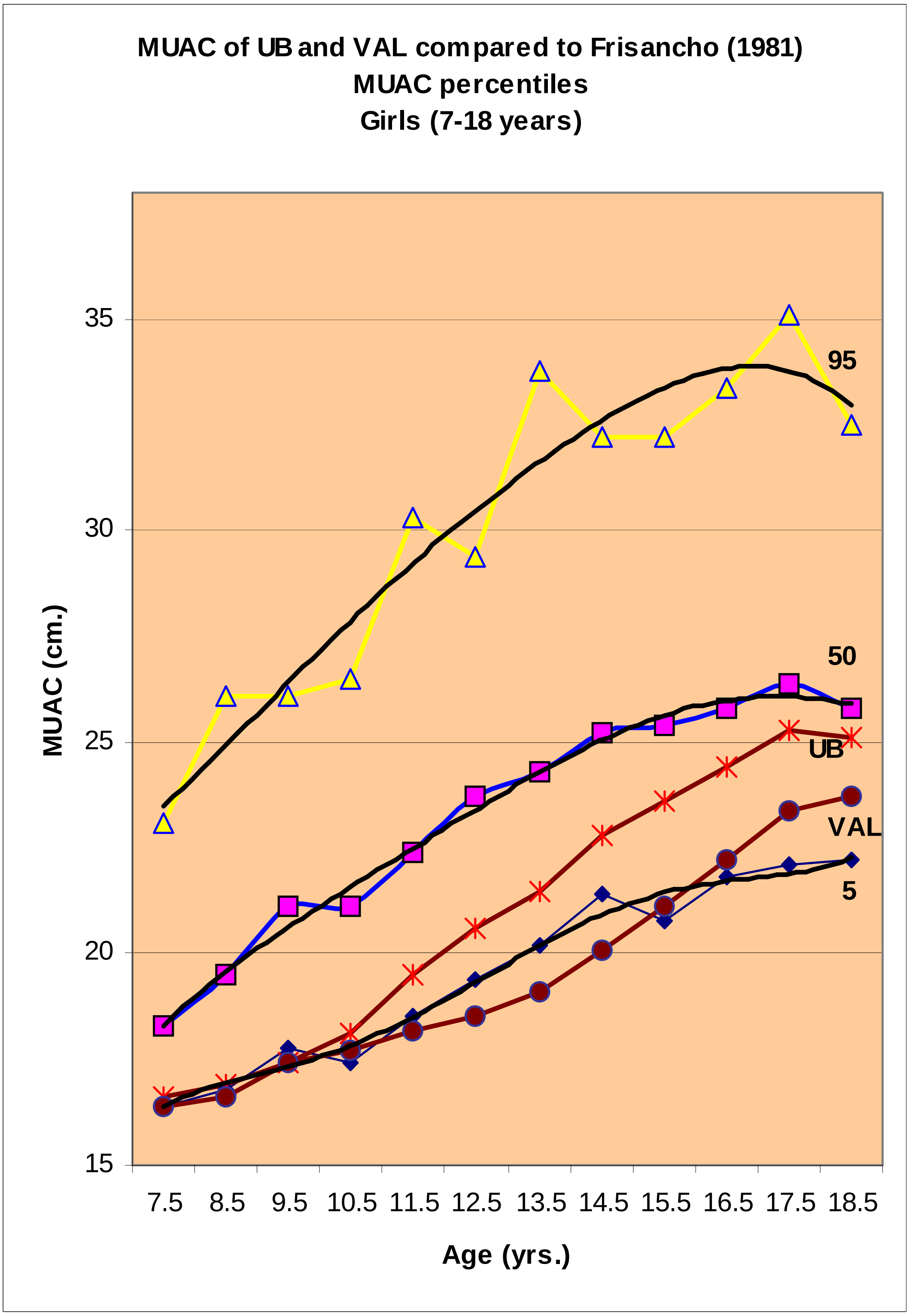
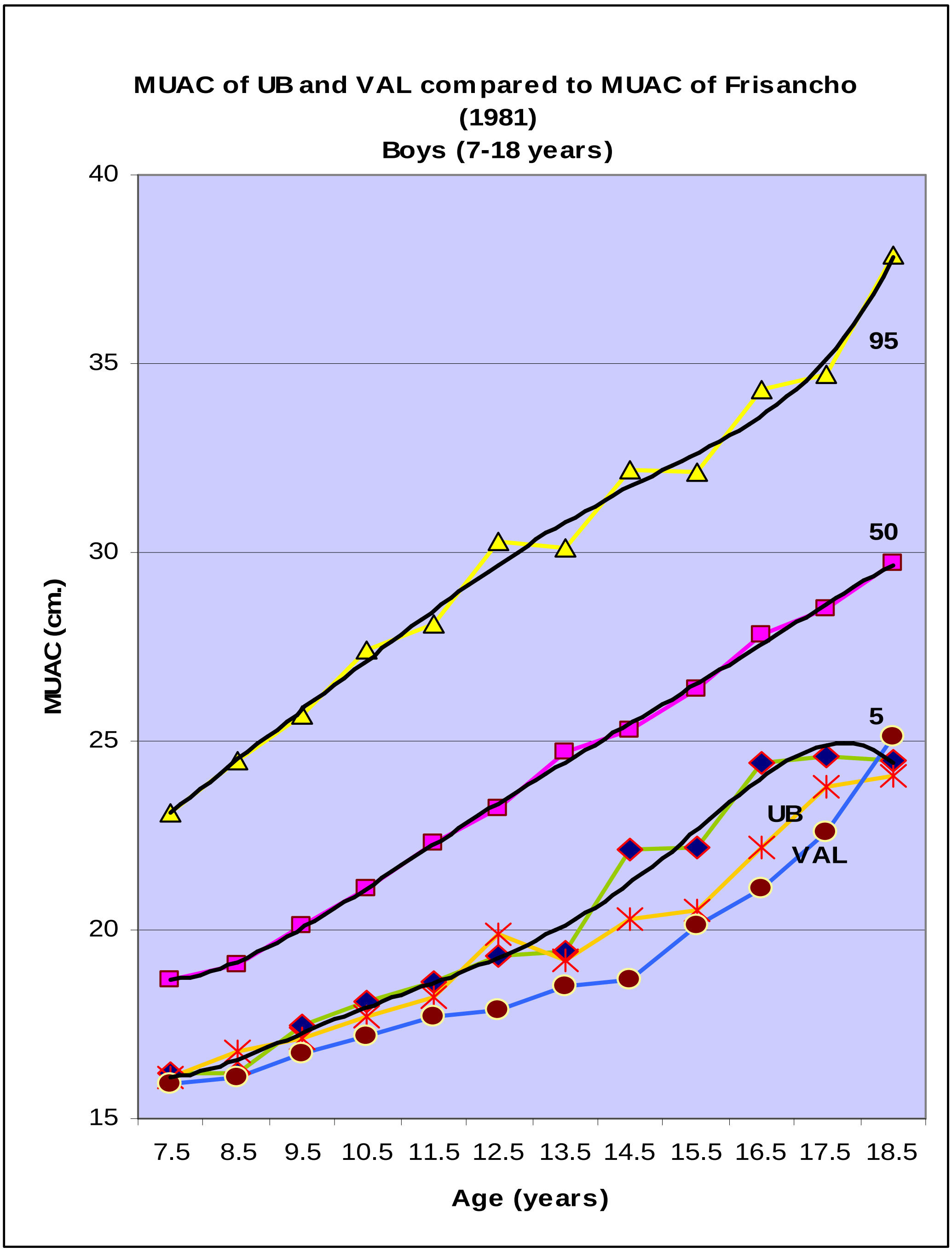


Figure 8.2

MUAC of UB and VAL compared to the MUAC from Frisancho (1981) for boys



8.3.4.1 Discussion of the Mid-Upper-Arm-Circumference (MUAC)

The role of left upper arm circumference in the assessment of nutritional status of human subjects has been well recognized over some time, (Jelliffe, 1966). MUAC in particular is used as a measure of thinness to detect under-nutrition and high risk of early death in children as shown by Briend et al. (1987) in rural Bangladesh. The arm circumference may also be considered as a public health index of protein calorie malnutrition of early childhood. For infants of 6-60 months, WHO recommended the American MUAC children as a reference base to predict mortality and assess nutritional status of children, (Ryan and Martinez, 1987).

Comparison between UB boys and girls show UB girls having higher MUAC at all ages than boys who are below the 5th centile from 7.5 years all the way to 18.5 years. UB boys fall below the 5th percentile of the reference data from early ages until only at 12.5 years when MUAC is above the 5th centile. On the other hand VAL boys and girls shows that boys are consistently below the 5th percentile, thin and malnourished from 7 to 17 years. VAL boys however show some “catch up” and recovery above the 5th centile and however remain at risk at the age of 18 years. UB girls are at high risk and severely thin from the age of 7.5-9.5 years, from where they remain below the 50th percentile but approach “catch up” to the 50th percentile by the 18th year. VAL girls are severely thin from the age of 10.5 years to 15.5 years. From 15.5 years they remain at risk too but above the 5th percentile.

Globally, studies involving growth of arm circumference conducted in different parts of the world reveal that data have mainly been reported for age-period extending beyond the first year, (Eveleth and Tanner, 1990).

8.3.4.2 Conclusion to the MUAC

Considering the accepted use of MUAC measurements and their popularity in assessing malnutrition, the results of this Thesis indicate that the children of UB and VAL, particularly the boys, are severely thin, malnourished and are at high risk of early death.

8.4 Comparisons before, during, and after puberty

The universe used in this Thesis covers the children at the age groups that include adolescence and stage of puberty. It was a mixed longitudinal study and hence allowed for the detection of the early maturing children and late maturing children. This is the period when many fast developmental changes take place. To do justice to the collected data and to really answer a question of how girls from UB and VAL compare in terms of their growth status before, during and after puberty, one needs to do more than the estimated height velocities reported in this thesis.

Proper longitudinal analysis of data was not done, mainly because of its complexity and the author's lack of experience in the analysis of longitudinal data. Key to the understanding of what happens during puberty would include the analysis of whether there is "critical weight" and age at which girls menstruate, their individual peak height velocities, their growth spurt, assessment if the adolescent child, particularly after the adolescent spurt, moves out of their percentile or not. During adolescence, an early or late maturer will move out of his or her centile but on average return to it when growth is completed.

Some studies have reported that early and late maturing girls have menarche at the same mean weight, but late maturers are taller at menarche. Two other major events of adolescence, initiation of the weight growth spurt and maximum rate of weight gain, also occur at an invariant mean weight.

8.5 New knowledge gained in the growth pattern and maturation of UB and VAL children: e.g. pattern of differences in the growth and maturation of boys and girls from the two sites

Numerous research initiatives in the study of growth and development have documented gender differences in the health status of infants and children. A range of health outcomes were covered, including mortality rates, calorie and nutrient intake, and anthropometric indicators. Some of these studies have shown boys to be at an advantage over girls. There are several reasons for this, most of them cultural e.g. some outcome measures are significantly determined by allocations of parental resources, observed differences would then suggest that the intra-family allocation of food, quality of clothing and the potential to contribute to the family house chores may favour boys over girls.

The sex differences may be due to parental preferences of one sex over the other, parents may have no preference but the social norms and societal values may be the determinant factors as to which child is preferred. Current social and economic conditions are different from the Apartheid period, safe for the persistant poor school results observed at many primary and secondary schools. Urbanization is preferred to living in a rural environment and, both boys and girls have equal opportunity for family benefits.

This study provides unique data and reference data for the less well-off from UB and VAL sites. Different investigators use different methods, but measuring techniques may be similar, but sample sizes and selection differ, age groupings are different and type and number of measurers differ and areas sampled are never the same. The UB and VAL studies are hence unique and they cover eleven anthropometric measurements of school going “normal” children during the period towards the end of Apartheid. It is hence not easily possible to pool data from different studies in a country to calculate a national average.

8.6 Why other standards and data sets were used for comparison

The choice of reference data sets was based on scientific criteria and acceptance by the scientific community. The history of Anthropometry started in Europe and America, hence most data and reference standards were constructed in Europe and America. These reference data have gained credibility over time and have been used by those governments to plan their Public Health systems and interventions.

In this Thesis, NCHS were used as the reference data to estimate the degree of deviation for UB and VAL boys and girls from the average percentiles of American children in terms of thinness, underweight, overweight, obesity, height-for-age, and weight-for-age. WHO reference 2007 was used to compare the degree of wasting and stunting as estimated by NCHS and the estimation of BMI. WHO reference of 2007, allowed for the estimation of prevalence rates for weight-for-age, height-for-age, BMI, wasting, stunting and thinness. MUAC reference percentiles by Frisancho (1981) allowed for the estimation of thinness, underweight and under nutrition. Standard BMI output categories are underweight, normal weight, overweight and obese, or combinations of these.

Other European data e.g. London data were used for comparison with the UB and VAL data because many Growth and Development research findings were done by Tanner and his colleagues who provided credible comparative statistics and included data from other countries in their assessments of world wide variation in human growth. They used resources from UNICEF and WHO as well as the International Biological Programme and collated data on the growth and physical maturation of children gathered by doctors and anthropologists throughout the world. The other advantage of using European data is that Europeans are relatively genetically homogeneous.

Variation indicates that there are large differences between populations and some differences are either due to heredity and some purely due to the environment. There are not many data that provides the standards of the less well-off, many studies contribute to the standards and reference data for the well off populations. This Thesis hence helps to fill this gap. The other special feature of this research is that the UB and VAL boys demonstrate sexual dimorphism and although the gap is observable, it was not determined if this gap at any stage between 7.5 and 17.4 years is indeed two years.

8.7 Recommendations

8.7.1 What Standard to use?

During the early twentieth century, anthropometry was extensively employed by anthropologists throughout the United States and Europe. These countries have over time accumulated significant data that has been recognized by scientists all over the world as ideal for reference data. Given the dynamic nature of growth, it is impacted upon by the environment with its diverse variables e.g. altitude and nutrition and it is for this reason that "comparative" analysis would provide valuable information on the health and well being of the individual and the community in which those individuals find themselves. There is no "ideal" individual; hence the measure of variation at individual and population level is interesting. In this thesis, the estimated coefficient of variation was an effort to highlight what measurements were highly variable and we considered the importance of possible error in measurements for all the variables measured. The NCHS was used for reference data and the newly reported WHO standards were also applied for comparison. The provision of WHO standards is a typical effort to standardise the way children should grow. They were constructed with clear criteria under controlled conditions and are yet to be fully developed to cover all age groups and to be tested over time using local data.

Reference data are used for comparison between regions at international level and may not always be relevant to the local populations. Local reference standards are useful to diagnose abnormalities and standards will not always help in determining the health and well being of individual children. NCHS and other reference data are derived from American or European children who may compare well with local well-off children.

The WHO is the most representative body that involves all Member States and professionals to ensure maximum inclusivity and representativeness. WHO standards will hence over time, be the most credible standard to use.

8.7.2 Relevant reference data sets for South Africa

South Africa is a cosmopolitan country with high urbanization rate. The wide range of socio-economic conditions both within urban and rural environments make South Africa a non-homogeneous country in terms of economic conditions, health systems and prevalence of disease. The most vulnerable individuals and communities remain those who have been disadvantaged by Apartheid by virtue of their location, education level and economic conditions. Further complicating factors are the immigrants from neighbouring states who compete with the already disadvantaged rural communities for the meagre available jobs and resources, leading to tensions and xenophobic conflicts.

UB and VAL areas are located within Kwa-Zulu Natal and Limpopo provinces respectively. These are the most impoverished provinces in South Africa. Although they do not represent the provincial profile in terms of number and opportunities, they nevertheless give a good indication of the growth and development of boys and girls in those provinces, they provide informative baseline data towards analysing similar environments within each province until the number of children per age group and sex are representative enough of the children in those provinces. Such coordinated research, would go a long way in informing the type of interventions required by the quality of data provided and hence the local reference data would be representative of the local population. At the moment we use the data we have. NCHS has been accepted as an international reference data because it fulfils certain criteria of representative adequacy, not because Americans have normal or “ideal” growth patterns.

Other reference data are used because they cover areas or body measurements that are not covered by others and hence reference data complement each other and are used to highlight relationships in body dimensions in order to get a holistic and more accurate diagnosis or analysis. There is no one specific , relevant, and complete set of reference data.

Reference data for the local communities would be such that we use the local standards and these would be compared to the NCHS and other reference data and as an ongoing process, the WHO standards may supersede these reference data due to the rigorous application of criteria required to understand how children should grow. Local reference data answer the question of how individuals grow as compared to their peers under similar environmental conditions, whether these are bad or good. NCHS reference data sometimes may not cover the type of variables that are measured and hence would be used in combination to other reference data from elsewhere. As the momentum is gained in order to reach consensus on the use and application of the WHO standards, these may over time be the preferred standards and hence countries may start considering setting targets for their children to reach at each age group across the board by applying informed rigorous interventions. Corresponding indicators for early childhood development would then include scholastic achievement given their "normal" growth patterns.

There is evidence in the literature that, due to changing ethnic composition and small differences found when local data is compared to the NCHS reference data, then it is appropriate to use the NCHS reference data. In the absence of "adequate" data to support local reference data, the NCHS will always be the appropriate reference data but will need to be compared to WHO that will also provide prevalence rates.

Key to what standards to use rests on the methodology and criteria that were applied to generate such standards. The WHO standards have clearer methodology and landmarks that are applied in gathering their data and breast feeding was one of the key factors considered. Once local reference data are generated using the same techniques, they will be the ones to use. Currently South Africa does not have adequate data to generate its own standards and will depend on the NCHS and WHO standards for comparison. The NCHS and other reference data will eventually be replaced by the WHO standards.

8.7.3 Developing comprehensive local data sets

Adaptation to environment impacts on the growth and development of local communities and hence plays an important role in determining the well being of the local populations. It would be unfortunate for local populations not to accumulate local data as an ongoing process. More researchers would locally work together and consolidate their understanding of the local communities by developing comprehensive local data sets.

It has been reported that people who live in high mountainous areas have their lung function tests and shape of their chests uniquely formed to adapt and survive the requirements of living at high altitude. Their oxygen intake and utilization and lung capacities are different from those who live at sea levels. What is a "normal" shape and measurement in one environment does not make a different shape and form in another environment “abnormal”. Hence the gathering of local data sets and standards would be a good start leading to a more comprehensive understanding of communities and populations over time.

The timing of menarche, has changed little over the past few decades. Early maturing girls are more likely to become obese in adolescence and adulthood than normal or late maturing girls. Early maturing white girls are heavier at the onset of puberty, but this is not the case for African-American girls or boys of either race

8.7.4 Popularization of Anthropometry

During the early twentieth century, anthropometry was extensively employed by anthropologists throughout the United States and Europe. Anthropometric techniques were employed in the study of paleoanthropology to help determine pre-human species from fossilized skulls and bones.
(http://www.newworldencyclopedia.org/entry/Anthropometry)

Anthropometry was also used in attempts to differentiate between the human races and even in applications of intelligence testing. During the 1920s, members of Franz Boas’ school of cultural anthropology began to use anthropometric approaches to discredit the concept of fixed biological race and after some abuses, particularly in Germany, teaching of physical anthropology went into general decline.

During the 1940s, William H. Sheldon employed anthropometry to evaluate somatotypes, which posited that characteristics of the body could be translated into characteristics of the mind. Sheldon also believed that criminality could be predicted according to body type. Sheldon ran into considerable controversy when his work became public, since he relied extensively on photographs of nude Ivy League students for his studies and this led to the modern anthropometry. (http://www.newworldencyclopedia.org/ entry/Anthropometry)

Aside from academia, anthropometric studies are conducted by scientists working for private companies and government agencies to determine the range of clothing sizes to be manufactured. Weight trainers often rely on the basic anthropometric divisions, derived by Sheldon, as a way of categorizing body type. Between 1945 and 1988, more than 40 anthropometric surveys that took 240 measures per each of U.S. military personnel, were conducted, including a 1988 Army Anthropometric Survey (ANSUR).

Developments in technology have allowed anthropometric measurements to be taken with the use of three-dimensional scanners. A three-dimensional scan taken of an individual’s body allows measurements to be extracted from the scan rather than directly from the individual. (http://www.newworldencyclopedia.org/entry/ Anthropometry)

Other uses of anthropometry include the design of accessibility standards of the disabled on wheel chairs e.g. in the United States these standards were developed in the late 1970’s. Since that time, both the technology of wheeled mobility and the demographics of device users have changed dramatically. The primary goal of this research is to develop a database that reflects the sizes, abilities and space needs of contemporary users and devices. A secondary goal is to identify, develop and disseminate reliable and valid research methods that can be used by many research groups effectively to increase knowledge and inform design and code development over the long term. A third goal is to disseminate these findings and provide technical assistance to standards committees, government officials and designers to help improve accessibility to the built environment by wheeled mobility users. (http://www.udeworld.com/ anthropometrics.html)

The eventual results may suggest a need to educate adolescent girls in defining proper weight levels and developing realistic concepts of body image given their need to maintain a slim body image.

8.7.5 Future publication of unused data in this thesis

Only select metrical traits were analyzed and used for comparison in order to reach the objectives of the thesis. More needs to be reported on the available data that was not analyzed. The priority will be to look at correlations between related measurements and the generation of derived indices and ratios or computation of percentage fat by age and sex and the rate of change of percentage fat by age on four occasions and then compute the correlation of percentage fat with Body Mass Index by sex and age. Further correlations with the secondary sexual characteristics data of boys and girls and the three year growth velocities exploiting the longitudinal aspect of the research in full will be reported and published. There would be a need to ”follow-up” the children that showed severe under nutrition and assess their current status if they are still alive. Similar studies in other rural areas may lead to a better understanding of the impact of service delivery within rural communities. As reported in this Thesis, some researchers have reported that it would take 40 years for secular changes in growth and development to be observed although some studies have shown that nutritional interventions improve linear growth.

8.8 Conclusion

8.8.1 Primary objectives of the PhD were achieved

This thesis achieved i) The Construction and development of new distance charts smoothed by polynomials for the South African Rural Black Children from UB and VAL areas for eleven anthropometric variables : height, weight, sitting height, head circumference, relaxed upper arm circumference, bi-acromial diameter, bi-iliac diameter, and four skinfolds from the biceps, triceps, supra-iliac and sub-scapular sites; ii) Put to test the use of reference data from NCHS and applying the new WHO standards for comparison, concluded that the WHO standards provide diagnostic outcomes for individual children and community surveys and the prevalence ranges with confidence intervals at 95% of significance per each age group using the latest WHO AnthroPlus software, iii) Tested WHO standards for the cut-off points for thinness, underweight and severe underweight, stunting and wasting and highlighted the gap between boys and girls from both UB and VAL for select metrical traits and also highlighted the differences in growth status and patterns between boys and girls from the same environment, iv) Engaged in the current application of Cole et al. (2007), cut-off points for thinness, underweight and the three degrees of thinness as compared to WHO cut-off points and computed the ponderal index for comparison , v) The contribution made by this thesis rest on the realization that Anthropometry may go a long way in assessing “service delivery” particularly the “Quality of life” as espoused in the constitution of South Africa. The thesis adds to the baseline data for South African Rural children. The current national nutritional programs should be seen to address the severe under-nutrition in South African rural children. The image of South Africa in terms of implementing the obligations of the UN Declaration on the Convention of the child should be monitored carefully. Of major importance was the need for action following the analysis of MUAC that shows that UB boys and girls are severely thin as compared to MUAC reference data of Frisancho (1981) and are at high risk of early death.

8.8.2 Possible opportunities for the application of the research findings: Role of culture and indigenous knowledge system

Social inequalities in health are a growing public health problem. UB and VAL areas are rural areas with minimal health amenities. Some analysis of indicators of household socio-economic status revealed landlessness amongst the VAL families where the owner of the farm reserved a small portion of land for the settlement of these families. UB families were however “owners” of their land but located on barren mountainous area that was not fertile for growing their own food. UB families had cattle, and these were used as a source of protein particularly in winter months. VAL families received 10 kg of mealie meal per family per month and minimum wages per family from the farm owner.

UB families practised their culture in their “natural” environment but the VAL families depended on their employer to provide for support. At least one family member had to be employed on the farm for the family to stay on the farm and the employer was considering having two family members to work on the farm for the family to stay at minimum salary. This created unhappiness amongst the families.

UB families exercised their cultural norms and indigenous knowledge system of seasonal slaughtering and harvesting of natural food substances, they practiced their beliefs and boys were treated differently from girls. Boys were hunters and looked after cattle and they were allowed to attend school while girls did soft domestic chores but they also attended school. Houses that had no boys would allow girls to act like boys and execute “manly’ tasks.

UB boys and girls have a better growth and development profile than VAL boys and girls. The freedom of UB families to exploit their culture in a natural setting and apply their indigenous knowledge system to the full could have played a major role in the superior pattern of the growth and development of their children to that of the VAL families.

8.8.3 Use of Anthropometry in government interventions

As government is responsible for the generation of policies, regulations and hence the laws of the country, if Anthropometrical research is promoted, the ongoing amendments of policies and regulations will be informed by empirical scientific evidence.

8.8.4 Apply Anthropometry in family units on voluntary basis for social cohesion

The application of Anthropometry has changed over time. At the start of the twenty-first century, a bio-cultural understanding of human development is replacing outdated applications of anthropometry. The new anthropometry is used to assess the social, economic, and political history of human groups, the health of individuals, and the well-being of the human population. In this period of transition, families are breaking down and anthropometry could play a role in uniting families as they are the smallest unit of the nation.

For social cohesion to be realised, parents and children should once more share meals around the table or at “Maitiso” and have discussions that unite the family. Anthropometry would appeal to the young who are sensitive to their body shapes and would monitor their growth pattern to avoid being obese or ill health at later stage in life. Parents on the other hand need their BMI monitored to ensure that the requirements for life insurance policies are met. A voluntary application of anthropometry would hence go a long way in enhancing social cohesion, and a family orientated society with family values and practices. (http://encyclopedia.jrank.org/articles/pages/5956/Anthropometry.html#ixzz0SuMkUwVf)

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APPENDICES

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APPENDIX A

DATA COLLECTION SHEETS

APPENDIX B

CDC GROWTH CHARTS: UNITED STATES

NCHS GROWTH CHARTS

APPENDIX C

WHO REFERENCE CHARTS

APPENDIX D

APPENDIX A

T-TEST STATISTICS

Gender	Age	Measure	Vaalwater Avg	Vaalwater SD	Vaalwater n	Ubombo Avg	Ubombo SD	Ubombon	Significance	Diff
Girls	11	Biiliac Diameter	19.77	1.11	51	22.41	0.97	66	0.99	-2.64
Girls	12	Biiliac Diameter	20.23	1.31	45	21.41	1.9	84	0.99	-1.18
Girls	13	Biiliac Diameter	21.28	1.97	39	22.23	1.32	61	0.99	-0.95
Girls	14	Biiliac Diameter	22.29	1.63	44	23.89	1.16	67	0.99	-1.6
Girls	15	Biiliac Diameter	23.39	1.2	48	24.27	1.47	56	0.99	-0.88
Girls	16	Biiliac Diameter	23.87	1.1	32	25.12	1.54	42	0.99	-1.25
Girls	17	Biiliac Diameter	24.74	1.67	27	24.98	1.43	51		-0.24
Girls	6	Head Circumference	49.83	1.84	8	50.71	1.48	7		-0.88
Girls	7	Head Circumference	50.45	1.62	25	50.51	1.51	22		-0.06
Girls	8	Head Circumference	50.53	1	43	50.62	1.37	37		-0.09
Girls	9	Head Circumference	51.13	1.31	46	51.1	1.54	51		0.03
Girls	10	Head Circumference	51.22	1.73	46	51.47	1.5	79		-0.25
Girls	11	Head Circumference	51.74	1.31	50	51.8	1.4	78		-0.06
Girls	12	Head Circumference	51.62	1.79	45	52.57	1.56	103	0.99	-0.95
Girls	13	Head Circumference	52.32	1.65	40	52.83	1.65	77		-0.51
Girls	14	Head Circumference	52.92	1.51	44	53.41	1.74	89		-0.49
Girls	15	Head Circumference	53.15	1.53	40	53.89	1.71	80	0.95	-0.74
Girls	16	Head Circumference	53.69	1.86	40	54.16	1.71	66		-0.47

Gender	Age	Measure	Vaalwater Avg	Vaalwater SD	Vaalwater n	Ubombo Avg	Ubombo SD	Ubombon	Significance	Diff
Girls	17	Head Circumference	54.04	1.38	28	54.63	1.87	67		-0.59
Girls	18	Head Circumference	54.1	1.31	26	54.32	1.93	36		-0.22
Boys	6	Relaxed Upper Arm Circumference	15.98	1.99	7	16.74	0.75	7		-0.76
Boys	7	Relaxed Upper Arm Circumference	15.96	0.96	27	16.61	0.74	21	0.98	-0.65
Boys	8	Relaxed Upper Arm Circumference	16	1.1	36	16.93	1.2	37	0.99	-0.93
Boys	9	Relaxed Upper Arm Circumference	16.7	1.49	36	17.42	1.24	51	0.98	-0.72
Boys	10	Relaxed Upper Arm Circumference	17.22	1.08	58	18	1.38	77	0.99	-0.78
Boys	11	Relaxed Upper Arm Circumference	17.68	1.37	39	19.51	1.88	80	0.99	-1.83
Boys	12	Relaxed Upper Arm Circumference	17.85	1.35	46	20.6	1.96	102	0.99	-2.75
Boys	13	Relaxed Upper Arm Circumference	18.47	1.39	37	21.47	2.04	79	0.99	-3
Boys	14	Relaxed Upper Arm Circumference	18.7	1.46	34	22.82	2.03	90	0.99	-4.12
Boys	15	Relaxed Upper Arm	20.04	1.34	51	23.58	2.34	81	0.99	-3.54

Gender	Age	Measure	Vaalwater Avg	Vaalwater SD	Vaalwater n	Ubombo Avg	Ubombo SD	Ubombon	Significance	Diff
		Circumference								
Boys	16	Relaxed Upper Arm Circumference	21.03	1.24	30	24.37	2.43	66	0.99	-3.34
Boys	17	Relaxed Upper Arm Circumference	22.59	2.03	26	25.33	2.33	66	0.99	-2.74
Boys	18	Relaxed Upper Arm Circumference	55.14	1.2	22	25.06	2.31	37	0.99	30.08
Girls	6	Sub-scapular Skinfold	4.24	0.3	8	6.46	1.04	7	0.99	-2.22
Girls	7	Sub-scapular Skinfold	4.94	0.74	26	4.22	0.69	22	0.99	0.72
Girls	8	Sub-scapular Skinfold	5.32	0.84	40	5.29	0.89	37		0.03
Girls	9	Sub-scapular Skinfold	5.61	1.36	48	5.48	1.04	50		0.13
Girls	10	Sub-scapular Skinfold	6.16	1.73	46	6.04	1.42	72		0.12
Girls	11	Sub-scapular Skinfold	6.22	1.95	50	6.71	1.79	65		-0.49
Girls	12	Sub-scapular Skinfold	6.13	0.94	43	7.59	2.11	83	0.99	-1.46
Girls	13	Sub-scapular Skinfold	6.88	1.75	40	7.97	1.99	60	0.99	-1.09
Girls	14	Sub-scapular Skinfold	7.94	2.02	44	9.88	2.75	70	0.99	-1.94
Girls	15	Sub-scapular Skinfold	8.7	2.42	40	11.44	4.3	60	0.99	-2.74
Girls	16	Sub-scapular Skinfold	9.93	2.87	40	12.7	4.11	45	0.99	-2.77

Gender	Age	Measure	Vaalwater Avg	Vaalwater SD	Vaalwater n	Ubombo Avg	Ubombo SD	Ubombon	Significance	Diff
Girls	17	Sub-scapular Skinfold	11.38	2.69	28	14.34	4.58	57	0.99	-2.96
Girls	18	Sub-scapular Skinfold	12.62	3.42	26	17.26	7.35	27	0.99	-4.64
Girls	6	Triceps Skinfold	6.38	0.67	8	8.57	1.35	7	0.99	-2.19
Girls	7	Triceps Skinfold	6.95	1.16	26	7.31	0.94	22		-0.36
Girls	8	Triceps Skinfold	7.38	1.41	41	7.76	1.56	37		-0.38
Girls	9	Triceps Skinfold	8.08	2.57	48	8.32	1.76	53		-0.24
Girls	6	Height	112.01	1.14	8	114.41	3.93	7		-2.4
Girls	7	Height	117.08	4.71	26	120.67	5.24	22	0.98	-3.59
Girls	8	Height	122.19	6.04	43	123.24	5.64	37		-1.05
Girls	9	Height	128.09	7.79	48	127.94	5.61	52		0.15
Girls	10	Height	131.74	6.6	46	132.43	6.04	78		-0.69
Girls	11	Height	136.16	6.67	51	138.53	6.4	80	0.95	-2.37
Girls	12	Height	138.36	9.39	45	144.06	7.25	103	0.99	-5.7
Girls	13	Height	144.28	12.19	39	143.38	7.41	78		0.9
Girls	14	Height	149.78	8.33	43	154.11	6.33	89	0.99	-4.33
Girls	15	Height	155.8	6.48	40	156.17	5.83	81		-0.37
Girls	16	Height	157.29	5.32	40	158	5.81	65		-0.71
Girls	17	Height	159.02	4.26	28	159.18	5.62	66		-0.16
Girls	18	Height	160.84	4.27	26	167.7	6.99	37	0.99	-6.86
Girls	6	Weight	18.11	0.44	8	20.41	1.71	7	0.99	-2.3
Girls	7	Weight	20.06	2.79	27	23.44	4.03	22	0.99	-3.38
Girls	8	Weight	24.53	3.56	43	23.67	3.58	37		0.86
Girls	9	Weight	24.71	4.76	48	25.53	3.57	52		-0.82

Gender	Age	Measure	Vaalwater Avg	Vaalwater SD	Vaalwater n	Ubombo Avg	Ubombo SD	Ubombon	Significance	Diff
Girls	10	Weight	26.05	4.63	46	27.54	3.58	75	0.95	-1.49
Girls	11	Weight	27.96	5.99	50	32.29	4.54	79	0.99	-4.33
Girls	12	Weight	29.3	5.49	45	35.96	6.07	103	0.99	-6.66
Girls	13	Weight	32.72	8.74	39	40.18	6.49	78	0.99	-7.46
Girls	14	Weight	36.11	7.52	44	45.98	6.33	89	0.99	-9.87
Girls	15	Weight	42.91	6.42	40	49.04	6.68	80	0.99	-6.13
Girls	16	Weight	46.27	6.66	40	52.41	6.57	64	0.99	-6.14
Girls	17	Weight	49.23	5.84	28	56.41	6.74	65	0.99	-7.18
Girls	18	Weight	51.66	6.66	26	56.5	7.15	30	0.98	-4.84
Girls	6	Sitting Height	59.55	1.4	8	61.82	1.35	7	0.99	-2.27
Girls	7	Sitting Height	62.57	2.65	27	63.45	2.43	22		-0.88
Girls	8	Sitting Height	64.67	2.66	43	65.78	3	37		-1.11
Girls	9	Sitting Height	66.89	3.44	48	67.51	2.51	52		-0.62
Girls	10	Sitting Height	68.49	3.11	51	69.18	2.78	79		-0.69
Girls	11	Sitting Height	70.24	2.69	51	71.87	2.97	80	0.99	-1.63
Girls	12	Sitting Height	71.14	3.41	45	74.25	3.37	103	0.99	-3.11
Girls	13	Sitting Height	72.81	4.22	40	76.72	3.46	77	0.99	-3.91
Girls	14	Sitting Height	76.69	4.09	44	79.24	3.28	89	0.99	-2.55
Girls	15	Sitting Height	79.3	2.78	40	80.52	3.04	81	0.95	-1.22
Girls	16	Sitting Height	81.36	2.31	40	81.84	3.04	65		-0.48
Girls	17	Sitting Height	82.56	1.71	28	82.49	2.48	65		0.07
Girls	18	Sitting Height	83.06	2.16	26	82.66	3.26	36		0.4
Girls	6	Biacromial	24.61	0.69	8	25.26	1.12	7		-0.65
Girls	7	Biacromial r	25.01	1.43	27	25.43	1.58	22		-0.42
Girls	8	Biacromial Diameter	26.38	2.07	43	26.39	1.82	37		-0.01
Girls	9	Biacromial Diameter	27.02	2.22	48	27.19	1.59	52		-0.17

Gender	Age	Measure	Vaalwater Avg	Vaalwater SD	Vaalwater n	Ubombo Avg	Ubombo SD	Ubombon	Significance	Diff
Girls	10	Biacromial Diameter	27.53	2.01	46	28.41	1.69	76	0.98	-0.88
Girls	11	Biacromial Diameter	28.45	2.02	50	29.58	1.66	79	0.99	-1.13
Girls	12	Biacromial Diameter	29.26	1.65	45	30.57	2.16	102	0.99	-1.31
Girls	13	Biacromial Diameter	30.1	2.19	40	31.78	1.91	74	0.99	-1.68
Girls	14	Biacromial Diameter	30.98	2.23	43	33.12	1.92	86	0.99	-2.14
Girls	15	Biacromial Diameter	33.01	2.22	48	33.67	2.14	73		-0.66
Girls	16	Biacromial Diameter	33.52	1.57	32	34.38	1.85	59	0.95	-0.86
Girls	17	Biacromial Diameter	34.91	1.46	27	34.45	1.79	52		0.46
Girls	18	Biacromial Diameter	34.96	1.57	26	34.22	1.95	23		0.74
Girls	6	Biiliac Diameter	17.14	0.55	8	17.44	0.58	7		-0.3
Girls	7	Biiliac Diameter	17.19	1.09	27	17.87	0.81	22	0.98	-0.68
Girls	8	Biiliac Diameter	17.74	1.16	42	18.49	0.93	37	0.99	-0.75
Girls	9	Biiliac Diameter	18.46	1.46	48	18.99	1.14	52	0.95	-0.53
Girls	10	Biiliac Diameter	19.22	1.21	46	19.91	1.26	73	0.99	-0.69
Girls	10	Triceps Skinfold	7.51	1.69	44	8.4	2.09	77	0.98	-0.89
Girls	11	Triceps Skinfold	7.69	1.77	50	9.03	2.05	77	0.99	-1.34
Girls	12	Triceps Skinfold	7.76	1.63	45	13.27	2.43	101	0.99	-5.51
Girls	13	Triceps Skinfold	8.24	1.77	40	10	2.6	76	0.99	-1.76
Girls	14	Triceps	8.67	1.89	43	11.52	3.35	88	0.99	-2.85

Gender	Age	Measure	Vaalwater Avg	Vaalwater SD	Vaalwater n	Ubombo Avg	Ubombo SD	Ubombon	Significance	Diff
		Skinfold								
Girls	15	Triceps Skinfold	10.1	2.73	40	17.85	4.22	81	0.99	-7.75
Girls	16	Triceps Skinfold	10.73	2.94	40	14.57	4.98	67	0.99	-3.84
Girls	17	Triceps Skinfold	13.8	5.96	28	15.35	5.09	64		-1.55
Girls	18	Triceps Skinfold	15.1	4.88	26	17.9	5.61	36	0.95	-2.8
Girls	6	Biceps Skinfold	5.03	1.06	8	4.66	0.9	7		0.37
Girls	7	Biceps Skinfold	4.82	1.43	27	4.37	0.75	21		0.45
Girls	8	Biceps Skinfold	4.77	1.1	42	4.41	0.94	37		0.36
Girls	9	Biceps Skinfold	4.85	1.11	47	4.79	1.32	51		0.06
Girls	10	Biceps Skinfold	4.98	1.44	46	4.84	1.29	78		0.14
Girls	11	Biceps Skinfold	5.18	1.74	51	4.98	1.27	78		0.2
Girls	12	Biceps Skinfold	5.18	1.25	45	5.26	1.58	100		-0.08
Girls	13	Biceps Skinfold	5.23	0.77	39	4.63	1.17	74	0.99	0.6
Girls	14	Biceps Skinfold	5.53	1.33	44	5.66	1.7	88		-0.13
Girls	15	Biceps Skinfold	6.04	1.41	40	6.39	1.66	79		-0.35
Girls	16	Biceps Skinfold	6.13	1.49	40	6.99	2.49	64		-0.86
Girls	17	Biceps Skinfold	6.62	2.35	28	8.58	2.62	64	0.99	-1.96
Girls	18	Biceps Skinfold	7.38	2.15	26	8.81	4.03	36		-1.43
Girls	6	Suprailiac Skinfold	3.25	0.35	8	5.53	4.66	7		-2.28
Girls	7	Suprailiac Skinfold	3.87	0.91	26	4.25	0.74	22		-0.38
Girls	8	Suprailiac	4.27	1.04	41	4.17	0.99	37		0.1
Girls	9	Suprailiac	4.8	1.66	47	4.26	1.03	51		0.54

Gender	Age	Measure	Vaalwater Avg	Vaalwater SD	Vaalwater n	Ubombo Avg	Ubombo SD	Ubombon	Significance	Diff
Girls	10	Suprailiac Skinfold	5.41	1.66	45	4.52	1.15	69	0.99	0.89
Girls	11	Suprailiac Skinfold	5.15	1.59	50	5.36	1.62	65		-0.21
Girls	12	Suprailiac Skinfold	4.71	1.42	45	5.92	2.15	82	0.99	-1.21
Girls	13	Suprailiac Skinfold	5.54	2.03	39	5.82	1.8	58		-0.28
Girls	14	Suprailiac Skinfold	5.66	1.47	42	7.08	2.16	71	0.99	-1.42
Girls	15	Suprailiac Skinfold	7.02	2.05	40	8.53	3.29	60	0.98	-1.51
Girls	16	Suprailiac Skinfold	7.88	2.19	40	9.22	3.4	47	0.95	-1.34
Girls	17	Suprailiac Skinfold	8.81	2.34	28	12.19	5.07	59	0.99	-3.38
Girls	18	Suprailiac Skinfold	10.05	3.71	26	12.47	5.93	27		-2.42
Boys	6	Height	118.43	15.39	6	111.81	4.54	8		6.62
Boys	7	Height	115.7	5.95	27	117.83	7.84	28		-2.13
Boys	8	Height	120.17	5.68	34	123.23	7.64	28		-3.06
Boys	9	Height	124.8	6.41	38	128.81	7.66	36	0.98	-4.01
Boys	10	Height	131.2	5.35	51	133.45	9.34	43		-2.25
Boys	11	Height	137.16	4.42	47	135.96	6.89	45		1.2
Boys	12	Height	140.4	5.21	46	142.42	9.19	122		-2.02
Boys	13	Height	142.17	6.71	39	146.08	7.74	43	0.98	-3.91
Boys	14	Height	148.52	5.48	40	151.18	9.48	52		-2.66
Boys	15	Height	151.91	6.73	34	154.85	7.05	53		-2.94
Boys	16	Height	156.1	5.53	37	160.82	7.09	65	0.99	-4.72
Boys	17	Height	160.21	4.47	24	165.04	5.99	57	0.99	-4.83

Gender	Age	Measure	Vaalwater Avg	Vaalwater SD	Vaalwater n	Ubombo Avg	Ubombo SD	Ubombon	Significance	Diff
Boys	18	Height	166.77	5.68	23	167.6	5.07	51		-0.83
Boys	6	Weight	19.9	5.94	7	18.79	1.84	8		1.11
Boys	7	Weight	19.84	2.19	27	21.86	3.52	28	0.98	-2.02
Boys	8	Weight	21.16	2.46	37	23.18	3.34	28	0.99	-2.02
Boys	9	Weight	24.39	4.77	39	25.92	3.69	36		-1.53
Boys	10	Weight	26.23	3.61	61	26.94	3.97	43		-0.71
Boys	11	Weight	31.25	3.69	49	29.87	3.82	44		1.38
Boys	12	Weight	29.71	5.06	48	33.05	5.22	50	0.99	-3.34
Boys	13	Weight	32.49	5.54	37	35.03	4.92	43	0.95	-2.54
Boys	14	Weight	34.44	4.94	36	39.64	6.49	52	0.99	-5.2
Boys	15	Weight	39.23	5.51	41	42.34	6.25	54	0.98	-3.11
Boys	16	Weight	44.22	6.3	35	47.98	5.66	63	0.99	-3.76
Boys	17	Weight	48.06	5.53	22	52.58	5.1	54	0.99	-4.52
Boys	18	Weight	54.01	5.81	25	56.84	5.34	52	0.95	-2.83
Boys	6	Sitting Height	63.71	6.79	6	61.49	1.63	8		2.22
Boys	7	Sitting Height	62.74	2.06	27	63.43	2.85	28		-0.69
Boys	8	Sitting Height	61.19	2.52	38	65.9	2.47	27	0.99	-4.71
Boys	9	Sitting Height	67.09	3.43	41	67.69	2.79	36		-0.6
Boys	10	Sitting Height	68.33	2.16	59	68.97	3.28	43		-0.64
Boys	11	Sitting Height	70.25	2.19	38	70.97	3.02	44		-0.72
Boys	12	Sitting Height	70.89	3.52	45	73.13	3.64	50	0.99	-2.24
Boys	13	Sitting Height	73.02	2.97	37	74.96	3.54	43	0.98	-1.94
Boys	14	Sitting Height	74.79	3.23	35	76.82	4.6	52	0.95	-2.03
Boys	15	Sitting Height	77.81	3.53	51	78.63	3.63	53		-0.82
Boys	16	Sitting Height	78.64	2.45	30	81.41	3.58	65	0.99	-2.77
Boys	17	Sitting Height	80.81	2.21	26	83.87	3.38	57	0.99	-3.06
Boys	18	Sitting Height	84.54	2.69	22	85.53	3.18	52		-0.99

Gender	Age	Measure	Vaalwater Avg	Vaalwater SD	Vaalwater n	Ubombo Avg	Ubombo SD	Ubombon	Significance	Diff
Boys	7	Biacromial Diameter	24.67	1.34	27	25.42	1.74	28		-0.75
Boys	8	Biacromial Diameter	25.52	1.3	33	26.61	1.9	28	0.98	-1.09
Boys	9	Biacromial Diameter	26.42	1.32	40	27.66	1.73	35	0.99	-1.24
Boys	10	Biacromial Diameter	27.92	1.36	50	28.65	1.82	43	0.95	-0.73
Boys	11	Biacromial Diameter	28.49	1.43	39	29.33	1.88	44	0.95	-0.84
Boys	12	Biacromial Diameter	28.93	1.78	43	30.17	2.1	49	0.99	-1.24
Boys	13	Biacromial Diameter	29.8	1.84	37	31.34	2.11	43	0.99	-1.54
Boys	14	Biacromial Diameter	31.12	1.58	38	32.52	2.63	53	0.99	-1.4
Boys	15	Biacromial Diameter	32.46	2.1	42	33.71	2	53	0.99	-1.25
Boys	16	Biacromial Diameter	33.12	1.52	32	33.5	2.54	65		-0.38
Boys	17	Biacromial Diameter	35.14	1.85	22	36.38	1.74	53	0.99	-1.24
Boys	18	Biacromial Diameter	35.74	2.93	20	37.31	1.73	50	0.99	-1.57
Boys	6	Biiliac Diameter	17.24	0.68	8	16.46	0.95	8		0.78
Boys	7	Biiliac Diameter	17.1	1.04	27	17.77	1.38	28	0.95	-0.67
Boys	8	Biiliac Diameter	17.54	0.87	33	18.22	1.2	28	0.98	-0.68
Boys	9	Biiliac Diameter	18.08	1.19	40	19.13	1.28	36	0.99	-1.05
Boys	10	Biiliac Diameter	19.03	0.78	50	19.68	1.26	42	0.99	-0.65
Boys	11	Biiliac Diameter	19.36	1.25	39	19.97	1.11	45	0.95	-0.61
Boys	12	Biiliac Diameter	19.85	1.06	43	20.84	1.34	49	0.99	-0.99

Gender	Age	Measure	Vaalwater Avg	Vaalwater SD	Vaalwater n	Ubombo Avg	Ubombo SD	Ubombon	Significance	Diff
Boys	13	Biiliac Diameter	20.48	0.64	37	21.4	1.19	42	0.99	-0.92
Boys	14	Biiliac Diameter	21.21	0.91	39	22.36	1.59	52	0.99	-1.15
Boys	15	Biiliac Diameter	22.05	1.15	41	22.93	1.25	54	0.99	-0.88
Boys	16	Biiliac Diameter	22.78	1.25	32	23.9	1.69	63	0.99	-1.12
Boys	17	Biiliac Diameter	23.56	1.21	23	24.87	1.43	55	0.99	-1.31
Boys	18	Biiliac Diameter	25.82	2.3	19	25.3	1.49	51		0.52
Boys	6	Head Circumference	51.03	0.75	7	51.91	1.22	8		-0.88
Boys	7	Head Circumference	51.71	1.33	26	52.06	1.37	27		-0.35
Boys	8	Head Circumference	51.51	1.28	37	52.09	1.27	28		-0.58
Boys	9	Head Circumference	51.46	1.48	41	52.11	0.92	34	0.95	-0.65
Boys	10	Head Circumference	52.06	1.44	59	52.54	1.51	43		-0.48
Boys	11	Head Circumference	52.29	1.25	37	52.87	1.43	45		-0.58
Boys	12	Head Circumference	52.68	1.57	46	53.46	1.42	49	0.98	-0.78
Boys	13	Head Circumference	53.03	1.1	36	53.6	1.54	43		-0.57
Boys	14	Head Circumference	53.58	1.4	34	53.88	1.64	53		-0.3
Boys	15	Head Circumference	53.8	1.65	51	53.85	1.64	54		-0.05
Boys	16	Head Circumference	54.04	1.22	29	54.69	1.54	64	0.95	-0.65
Boys	18	Head Circumference	55.14	1.81	22	55.46	1.49	52		-0.32
Boys	6	Sub-scapular	4.83	1.6	6	4.72	1.12	8		0.11

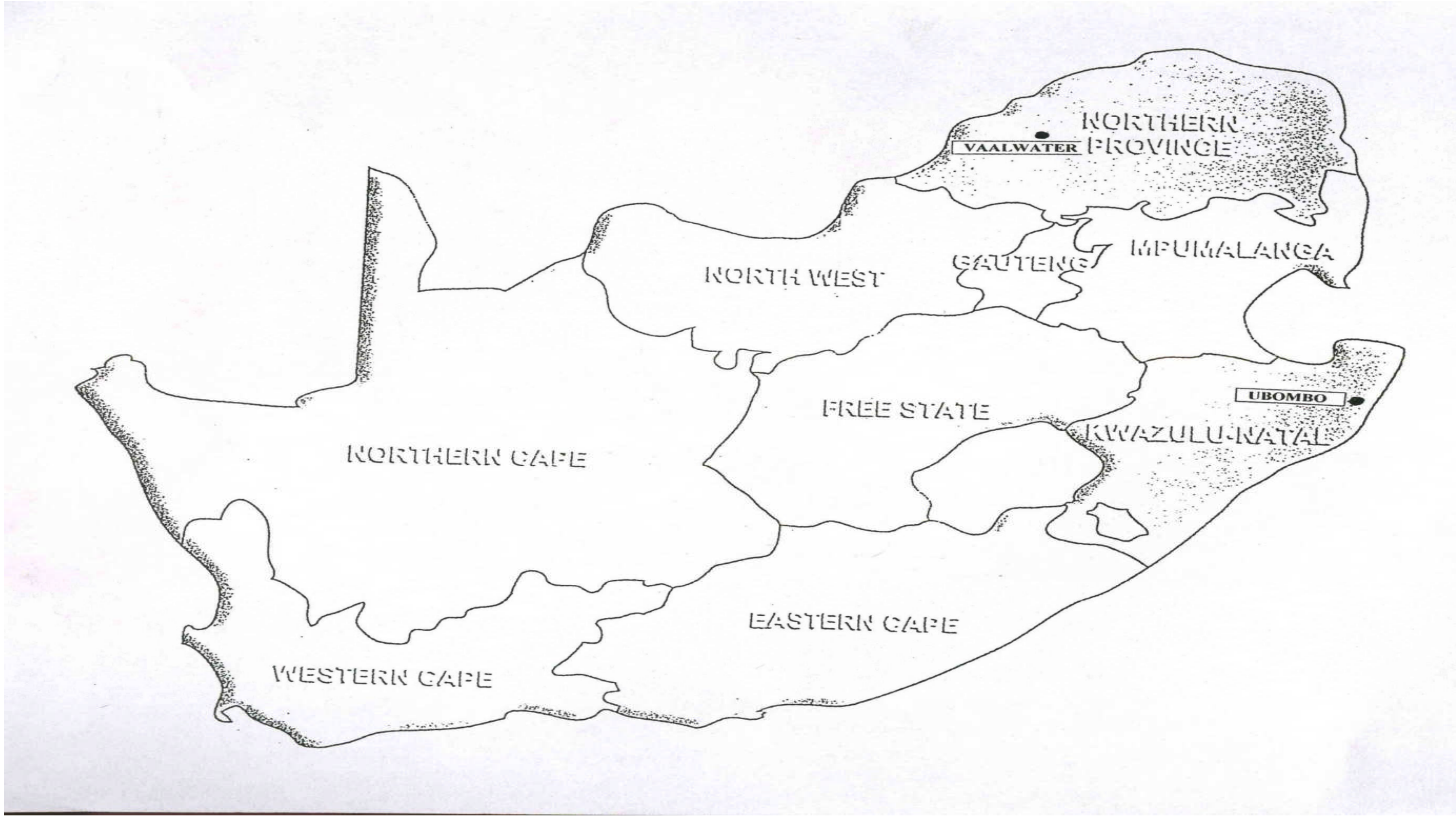
Gender	Age	Measure	Vaalwater Avg	Vaalwater SD	Vaalwater n	Ubombo Avg	Ubombo SD	Ubombon	Significance	Diff
		Skinfold								
Boys	7	Sub-scapular Skinfold	5.01	1.1	27	5.3	0.84	27		-0.29
Boys	8	Sub-scapular Skinfold	5.04	1.08	34	5.13	0.79	28		-0.09
Boys	9	Sub-scapular Skinfold	5.08	0.66	37	5.21	0.91	35		-0.13
Boys	10	Sub-scapular Skinfold	5.16	0.89	48	5.11	0.6	43		0.05
Boys	11	Sub-scapular Skinfold	5.02	0.74	39	5.21	0.67	44		-0.19
Boys	12	Sub-scapular Skinfold	6.13	0.94	43	5.7	0.77	49	0.98	0.43
Boys	13	Sub-scapular Skinfold	5.75	0.97	38	5.64	1.13	43		0.11
Boys	14	Sub-scapular Skinfold	5.72	0.94	38	5.9	0.88	51		-0.18
Boys	15	Sub-scapular Skinfold	6.16	0.84	41	6.13	1.07	54		0.03
Boys	16	Sub-scapular Skinfold	6.83	1.44	32	6.69	1.34	63		0.14
Boys	17	Sub-scapular Skinfold	6.9	1.47	27	7.48	1.51	54		-0.58
Boys	18	Sub-scapular Skinfold	7.82	1.62	20	7.47	1.9	52		0.35
Boys	6	Triceps Skinfold	6.49	2.09	6	7.8	0.61	7		-1.31
Boys	7	Triceps Skinfold	6.54	1.29	26	6.94	1.56	28		-0.4
Boys	8	Triceps Skinfold	6.45	1.28	34	6.39	1.04	27		0.06
Boys	9	Triceps Skinfold	6.33	1.36	38	7.05	1.3	35	0.95	-0.72

Gender	Age	Measure	Vaalwater Avg	Vaalwater SD	Vaalwater n	Ubombo Avg	Ubombo SD	Ubombon	Significance	Diff
Boys	10	Triceps Skinfold	6.38	1.66	49	6.97	1.56	43		-0.59
Boys	11	Triceps Skinfold	6.09	1.41	39	7.05	1.28	44	0.99	-0.96
Boys	12	Triceps Skinfold	7.76	1.63	45	7.26	1.92	49		0.5
Boys	13	Triceps Skinfold	6.49	1.63	40	7.2	1.75	43		-0.71
Boys	14	Triceps Skinfold	7.05	2.05	39	7.14	1.69	52		-0.09
Boys	15	Triceps Skinfold	6.95	1.03	41	6.62	1.29	54		0.33
Boys	16	Triceps Skinfold	7.37	1.96	32	7.04	1.68	64		0.33
Boys	17	Triceps Skinfold	6.36	1.64	27	7.22	2.24	56		-0.86
Boys	18	Triceps Skinfold	6.78	1.55	20	7	1.9	51		-0.22
Boys	6	Biceps Skinfold	4.07	0.51	6	4.25	0.71	8		-0.18
Boys	7	Biceps Skinfold	4.51	1.11	27	4.29	0.93	26		0.22
Boys	8	Biceps Skinfold	4.29	0.75	33	3.73	0.49	28	0.99	0.56
Boys	9	Biceps Skinfold	4.03	0.91	36	3.95	0.68	35		0.08
Boys	10	Biceps Skinfold	4.32	1.01	52	4.01	0.69	42		0.31
Boys	11	Biceps Skinfold	4.59	1.04	48	3.84	0.65	45	0.99	0.75
Boys	12	Biceps Skinfold	4.64	0.98	46	4	0.97	50	0.99	0.64
Boys	13	Biceps Skinfold	4.53	1.13	36	3.92	0.92	42	0.98	0.61
Boys	14	Biceps Skinfold	5.05	0.77	39	3.99	0.93	52	0.99	1.06
Boys	15	Biceps Skinfold	4.63	1.05	34	3.35	0.7	54	0.99	1.28
Boys	16	Biceps Skinfold	5.03	1.17	36	3.94	0.72	60	0.99	1.09
Boys	17	Biceps Skinfold	4.35	1.01	24	4.16	0.75	55		0.19

Gender	Age	Measure	Vaalwater Avg	Vaalwater SD	Vaalwater n	Ubombo Avg	Ubombo SD	Ubombon	Significance	Diff
Boys	18	Biceps Skinfold	6.48	1.58	23	4.2	0.85	52	0.99	2.28
Boys	6	Suprailiac Skinfold	3.2	1.66	6	3.99	1.31	7		-0.79
Boys	7	Suprailiac Skinfold	3.61	0.97	27	3.85	0.86	28		-0.24
Boys	8	Suprailiac Skinfold	3.6	0.61	32	3.5	0.44	27		0.1
Boys	9	Suprailiac Skinfold	3.96	0.72	37	3.69	0.63	36		0.27
Boys	10	Suprailiac Skinfold	4.18	0.61	50	3.57	0.57	41	0.99	0.61
Boys	11	Suprailiac Skinfold	4.85	0.9	48	3.26	0.6	44	0.99	1.59
Boys	12	Suprailiac Skinfold	4.79	0.89	46	3.82	0.73	47	0.99	0.97
Boys	13	Suprailiac Skinfold	4.7	0.97	39	3.96	0.92	42	0.99	0.74
Boys	14	Suprailiac Skinfold	5.33	0.78	40	4.11	0.91	51	0.99	1.22
Boys	15	Suprailiac Skinfold	5.47	0.93	34	4.06	0.86	54	0.99	1.41
Boys	16	Suprailiac Skinfold	5.66	1.5	37	4.51	0.69	63	0.99	1.15
Boys	17	Suprailiac Skinfold	5.43	0.82	24	4.92	1.05	56	0.95	0.51
Boys	18	Suprailiac Skinfold	7.14	1.2	23	4.94	0.93	52	0.99	2.2

APPENDIX A

MAP OF SOUTH AFRICA (UB) AND (VAL)



APPENDIX A

INFORMATION SHEET FOR (UB) AND (VAL) CHILDREN

INFORMATION SHEET FOR THE VAALWATER CHILDREN
DATE:
The importance of taking body measurements

When a child eat healthy food and is not sick they should grow like any other child in the world. What scientists have found is that children in the rural areas do not always grow the same way as the children in the cities or those from families who can afford to provide extra support for their children. Measurements of height and weight have been taken on children from birth, in many countries to check if a child grows normally or not.

Measurements taken from a large number of children from other parts of the world have been used as comparison measures to check for normal growth of children in those countries which do not have enough measurements taken. South Africa does not have its own growth measurements and we use American growth charts or British charts in our clinics to compare with our children's growth pattern. We will use these measures to build enough data over time for us to have our own measurements.

We will refer children who are not well to Dr. Farrant who can provide medical advice.

What measurements are we going to take ?

We have trained scientists who will take your height using a ruler on the wall (Anthropometer), weight using bathroom scale, skin-folds using caliper and circumferences from the head and upper arm and finally the diameters from the bi-iliac and bi-acromial areas. There is no need for anyone to undress and hence your privacy will be respected.

These measurements will be used to check if the conditions of living have changed and improved after our independence in South Africa and will also be used to check if there is better growth in all those measurements.

We hope to come back every year at the same time and bring some books from the private schools, some of the University students will help to share their experiences in Science subjects, we also hope to make it a science week where more activities can be jointly planned with the teachers of the school.

We would like you to give us a permission to measure you and we would like you to explain to your parents about these measurements. Both your parent and yourself need to sign to show that you are willing to participate in the study. Your teachers will help in the explanations needed to make sure that we are all happy with what is needed.

Thanking you in advance.

Stranger Kgamphe

______________ Child's name

______________ Parent

______________ Teacher

APPENDIX A

INDEMNITY FORM

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

DEPARTMENT OF ANATOMICAL SCIENCES

INDEMNITY FORM

NAME: ....

NAME OF PARENT OR GUARDIAN: ....

CONTACT ADDRESS (Must be applicable from) ....

....

....

TELEPHONE NO.: ....

Please list all medical conditions and/or allergies which you suffer from:

....

....

....

I hereby delcare that I do not hold the organisers of the fieldtrip, the University of the Witwatersrand, or Professor Beverley Kramer responsible for any loss or injury which may be suffered by myself during the course of this fieldtrip.

SIGNED: ________________________ DATE: ________________

APPENDIX A

STUDY DATA COLLECTION SHEET (UB AND VAL)

STUDY :
SUBJECT NAME :
STUDY NUMBER STUDY CODE BIRTHDATE SEX RACE/TRIBE

OCC'	EXAMDATE	HEIGHT	WEIGHT	SITT'G HEIGHT	BIAC	BIIL	HDCIRC	UACIRC	TRCP	BCP	SSCP	SPIL	BGPH	TES V.L	TES V.R	MEN	MENDATE	COMMENT

APPENDIX A

DATA COLLECTION SHEET

VAALWATER GROWTH MONITORING

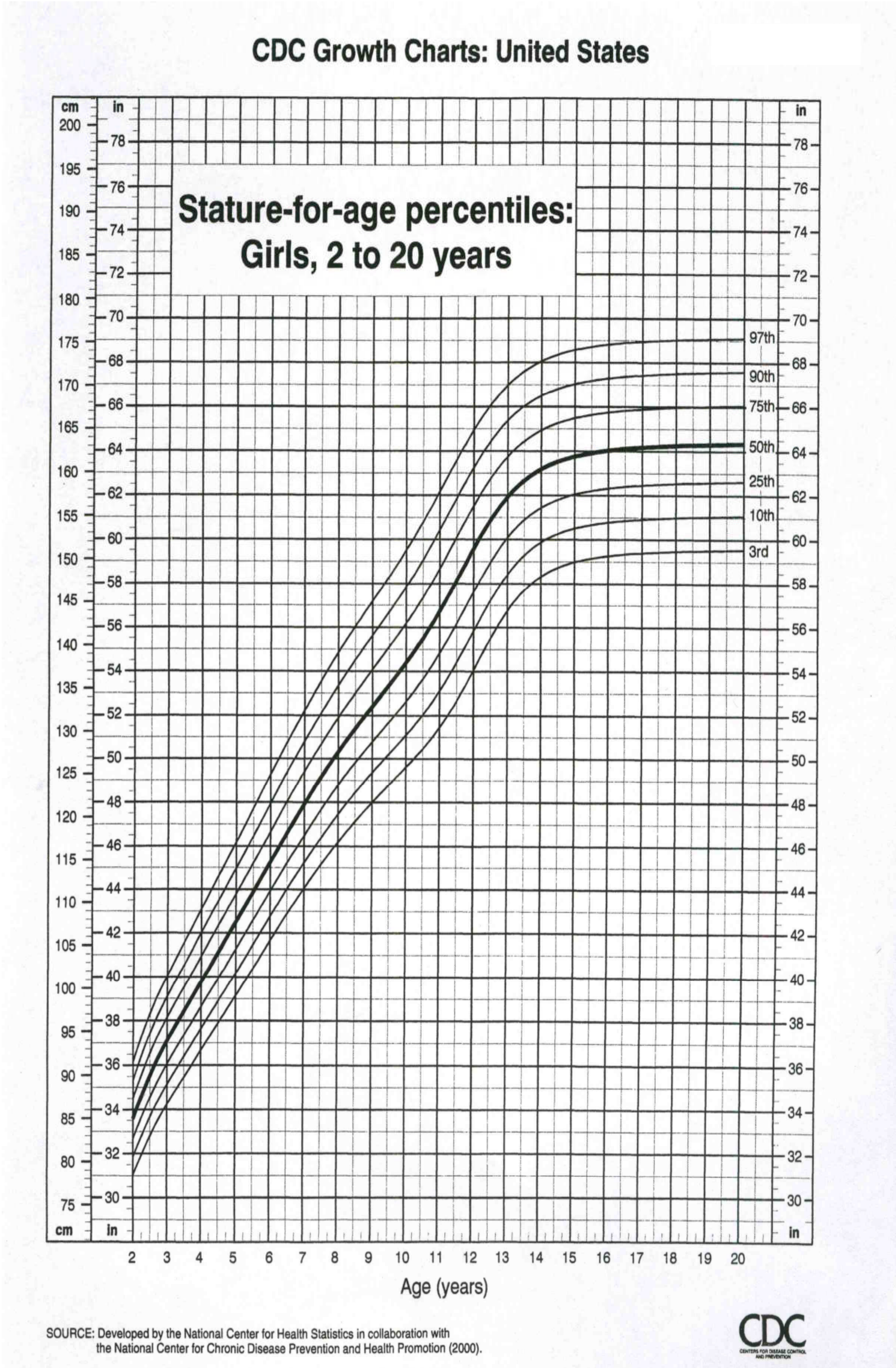
DATA COLLECTION SHEET

SCHOOL Name:

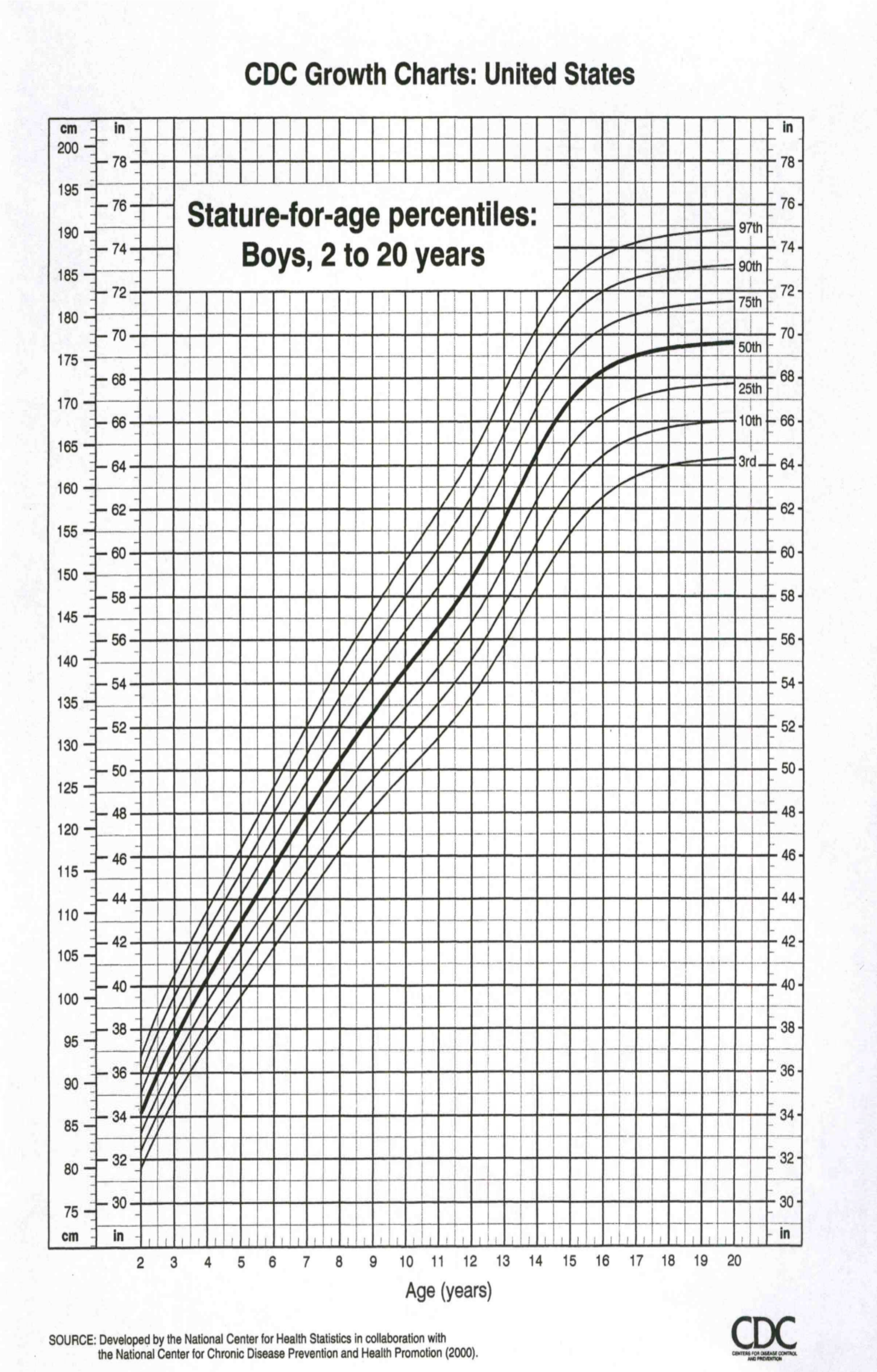
BOYS

St. NO.	NAME	DOB	DATE	AGE	Height	Weight	HDCirc	Reluac

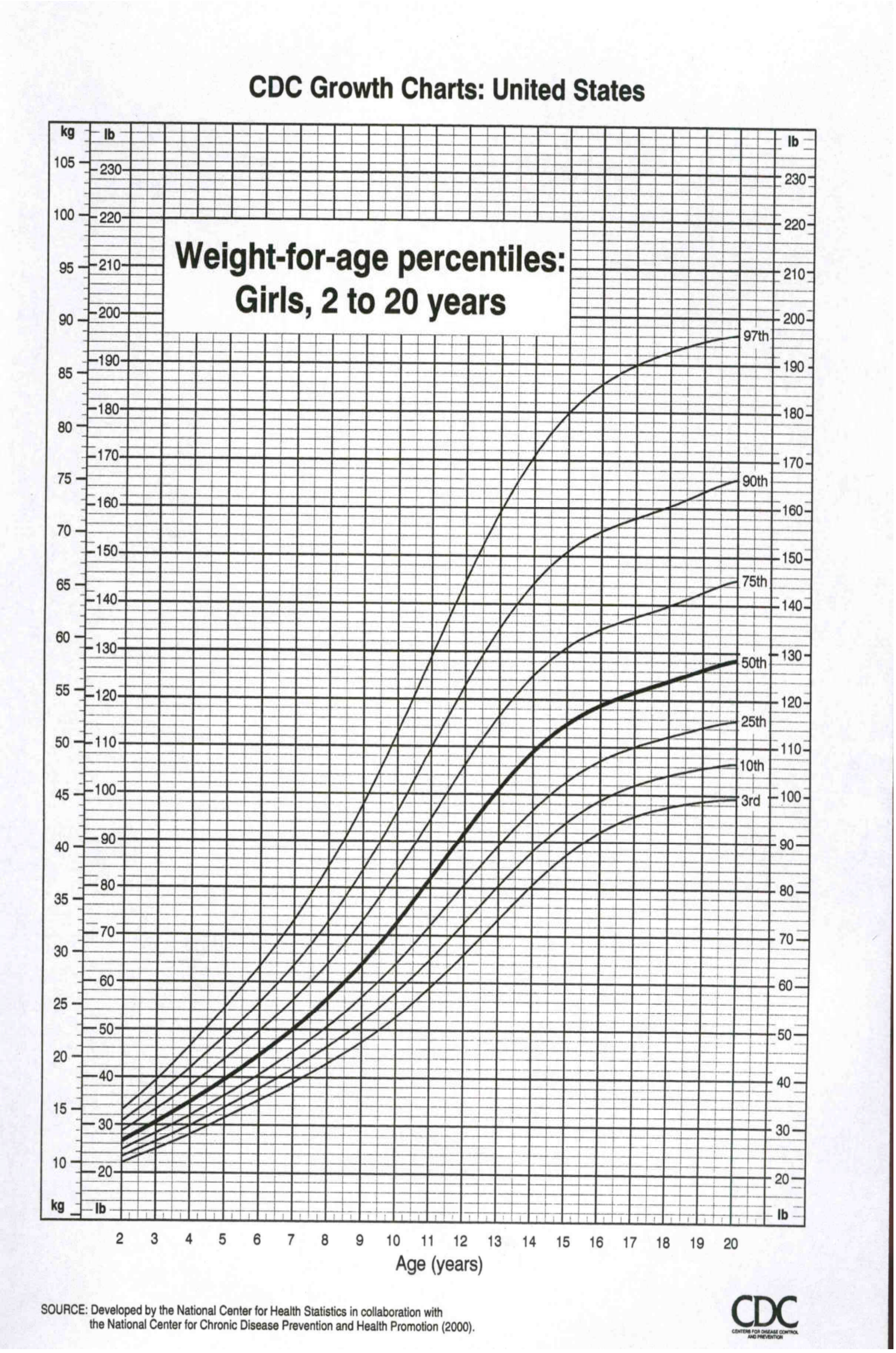
APPENDIX B


CDC Growth Charts: United States
Stature-for-age percentiles: Girls, 2 to 20 years
cm
in
97th
90th
75th
50th
25th
10th
3rd
Age (years)
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
CDC

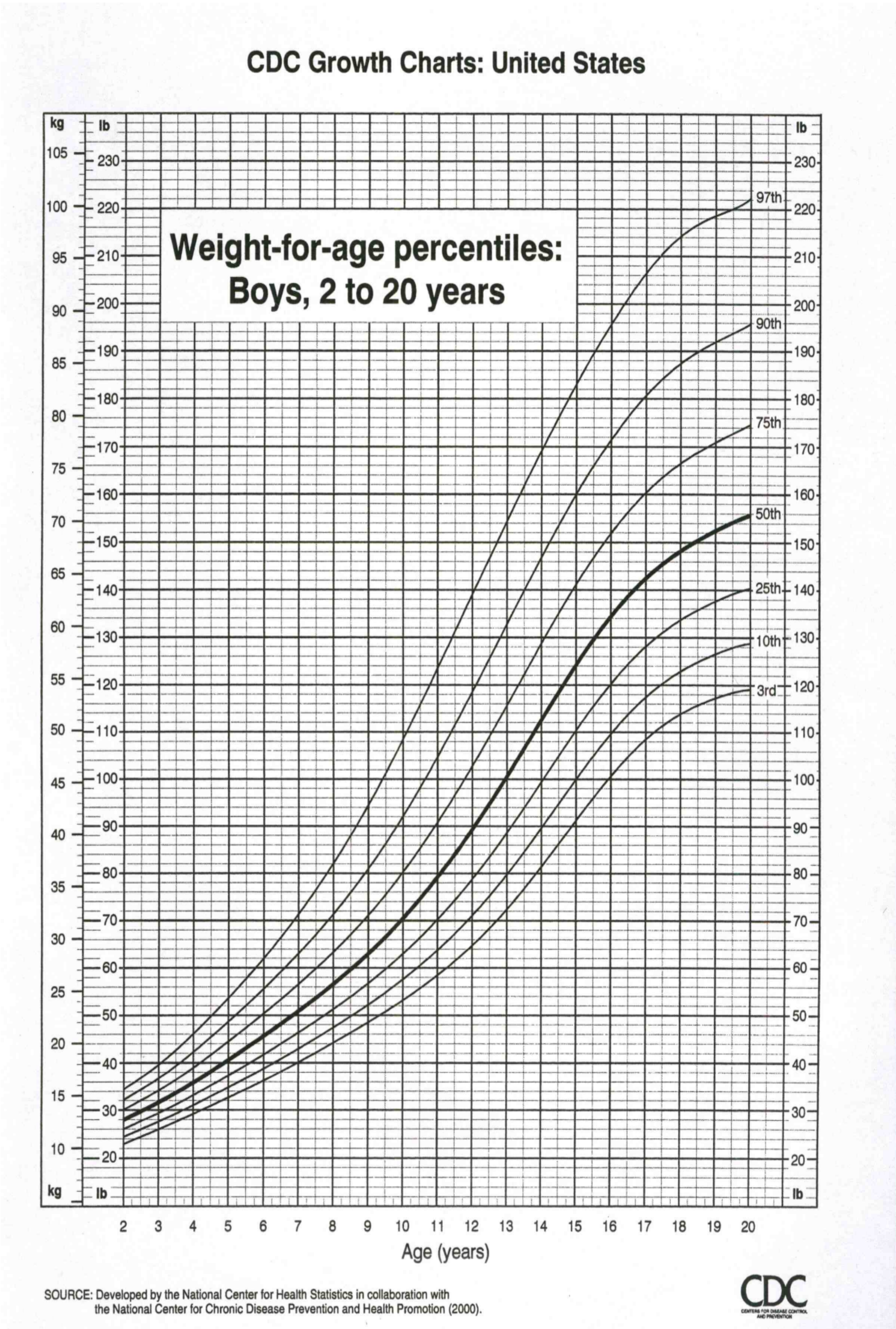
APPENDIX B


CDC Growth Charts: United States
Stature-for-age percentiles:
Boys, 2 to 20 years
97th
90th
75th
50th
25th
10th
3rd
cm
in
Age (years)
SOURCE: Developed by the National Center for Health Statistics in collaboration with
the National Center for Chronic Disease Prevention and Health Promotion (2000).
CDC

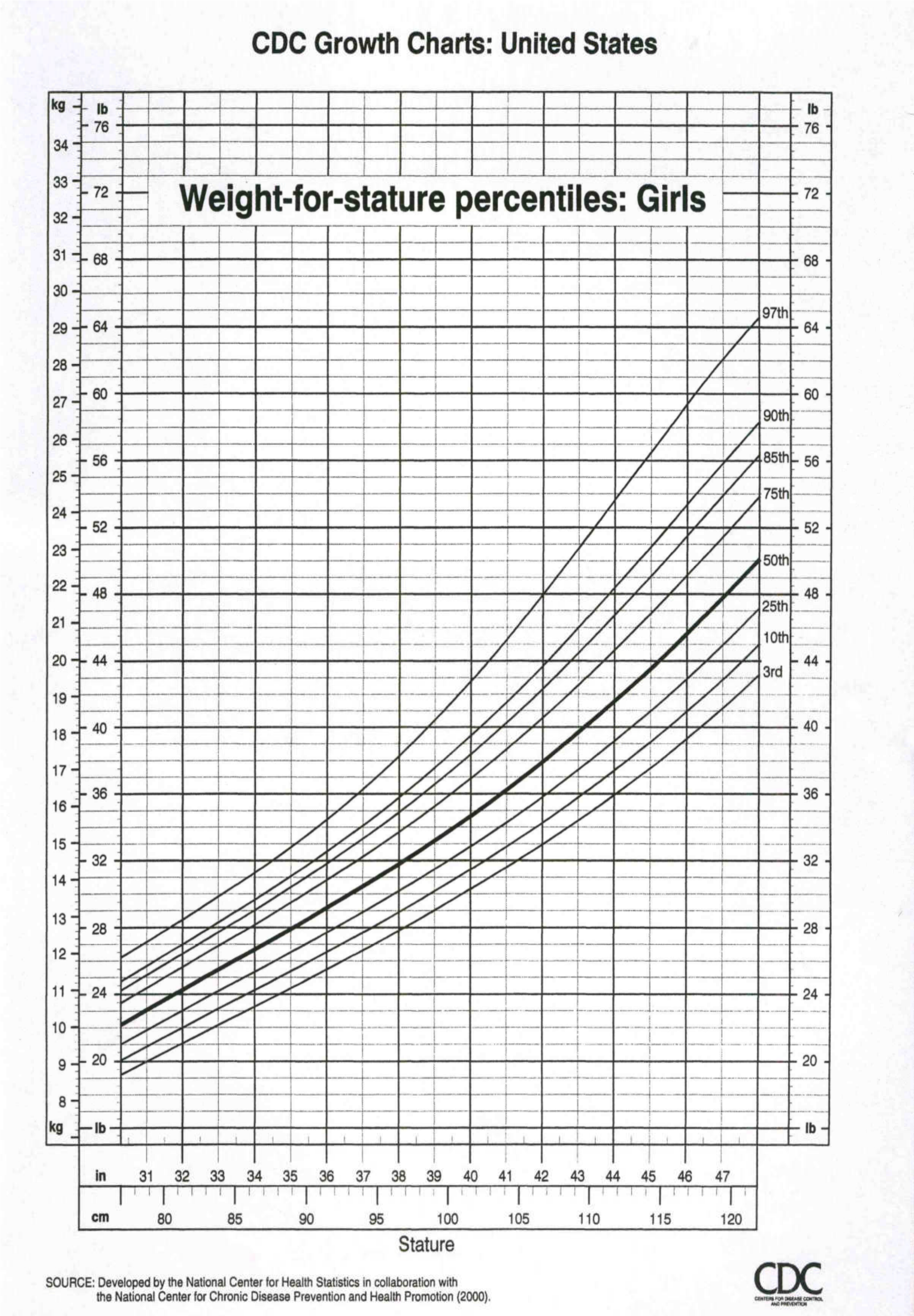
APPENDIX B


CDC Growth Charts: United States
Weight-for-age percentiles:
Girls, 2 to 20 years
kg
lb
97th
90th
75th
50th
25th
10th
3rd
Age (years)
SOURCE: Developed by the National Center for Health Statistics in collaboration with
the National Center for Chronic Disease Prevention and Health Promotion (2000).
CDC

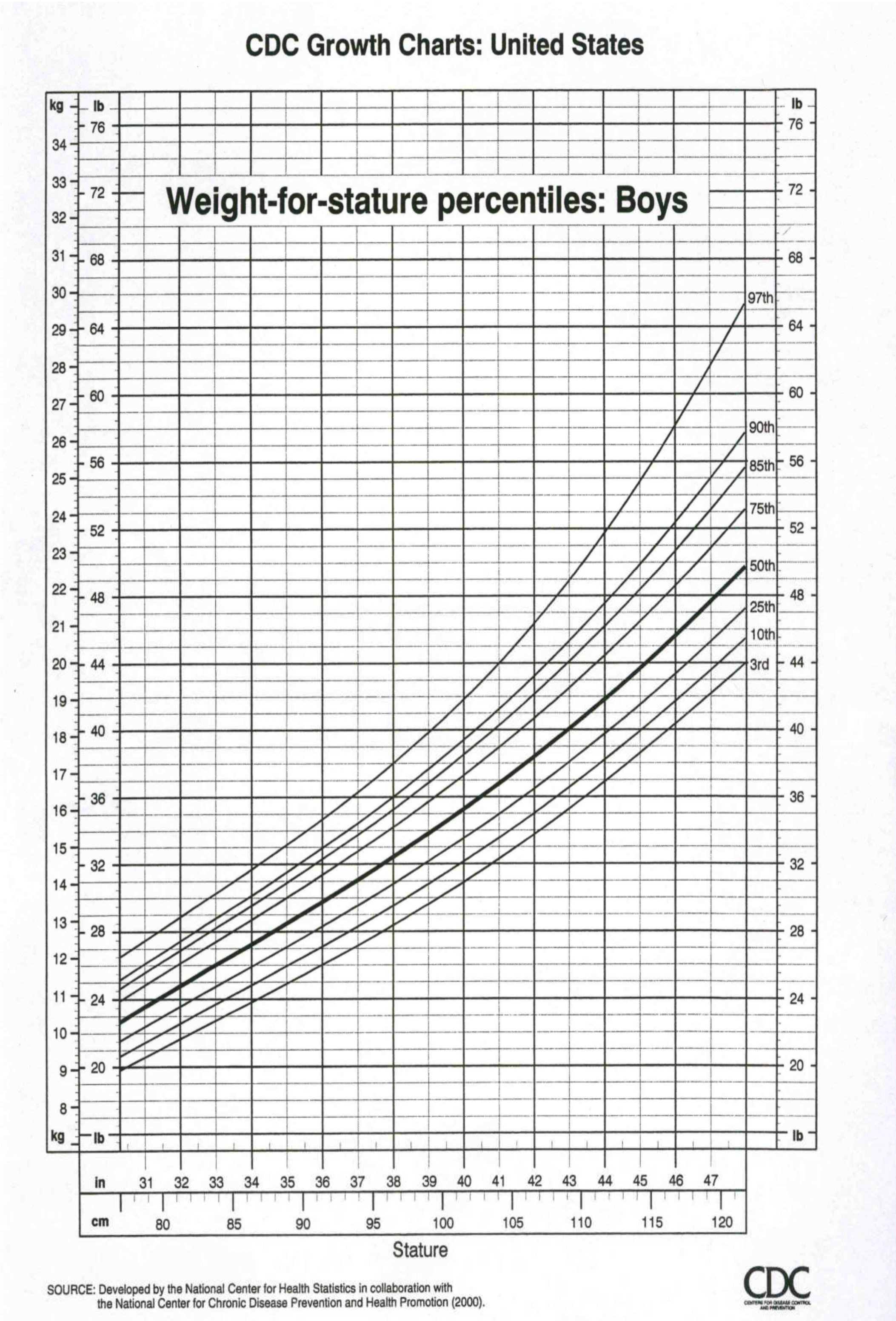
APPENDIX B


CDC Growth Charts: United States
Weight-for-age percentiles:
Boys, 2 to 20 years
97th
90th
75th
50th
25th
10th
3rd
kg
lb
Age (years)
SOURCE: Developed by the National Center for Health Statistics in collaboration with
the National Center for Chronic Disease Prevention and Health Promotion (2000).
CDC

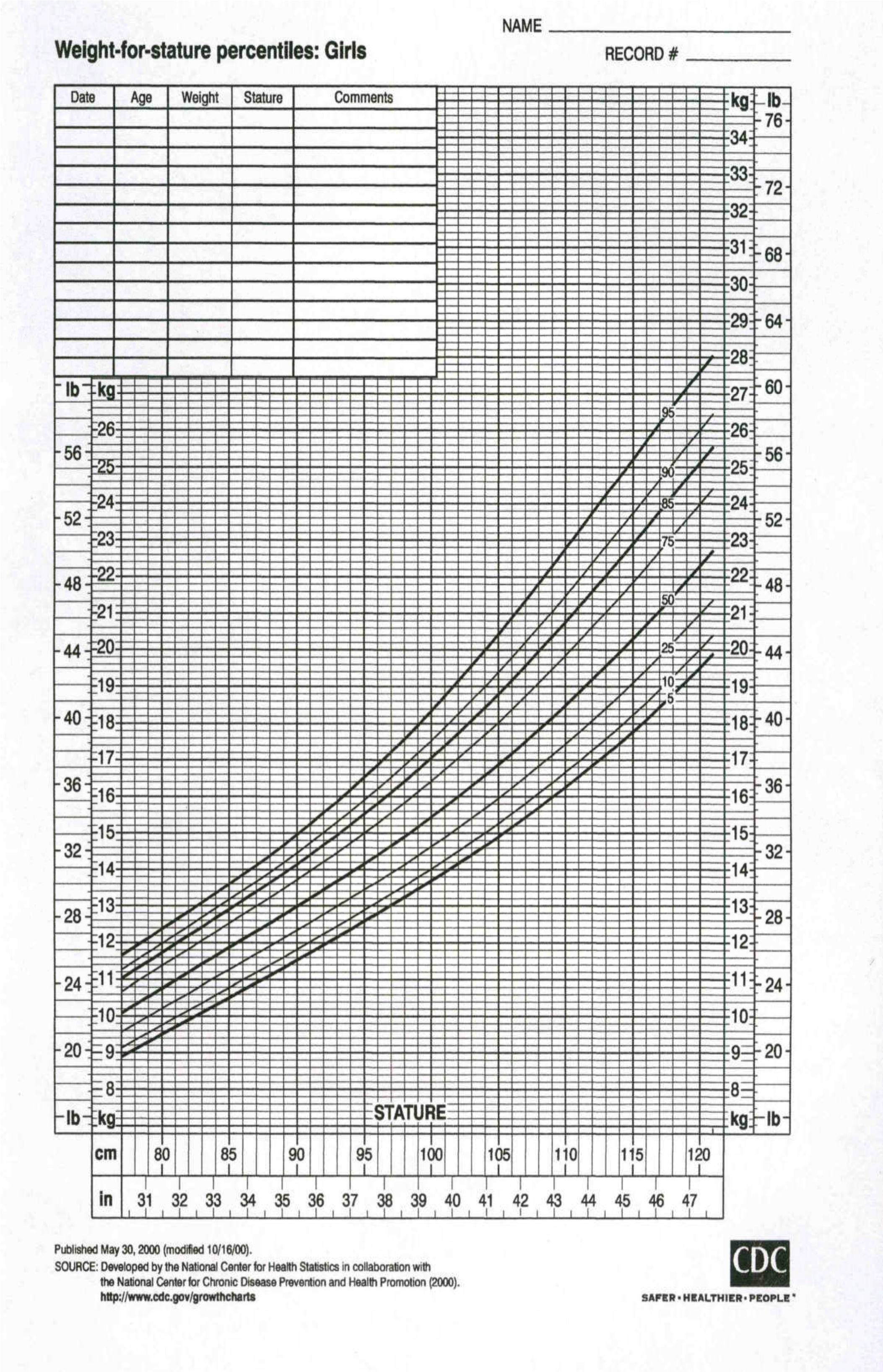
APPENDIX B


CDC Growth Charts: United States
Weight-for-stature percentiles: Girls
kg
lb
97th
90th
85th
75th
50th
25th
10th
3rd
in
cm
Stature
SOURCE: Developed by the National Center for Health Statistics in collaboration with
the National Center for Chronic Disease Prevention and Health Promotion (2000).
CDC

APPENDIX B


CDC Growth Charts: United States
Weight-for-stature percentiles: Boys
kg
lb
97th
90th
85th
75th
50th
25th
10th
3rd
in
cm
Stature
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
CDC

APPENDIX B


NAME
Weight-for-stature percentiles: Girls
RECORD #
Date
Age
Weight
Stature
Comments
kg
lb
STATURE
cm
in
95
90
85
75
50
25
10
5
Published May 30, 2000 (modified 10/16/00).
SOURCE: Developed by the National Center for Health Statistics in collaboration with
the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts
CDC
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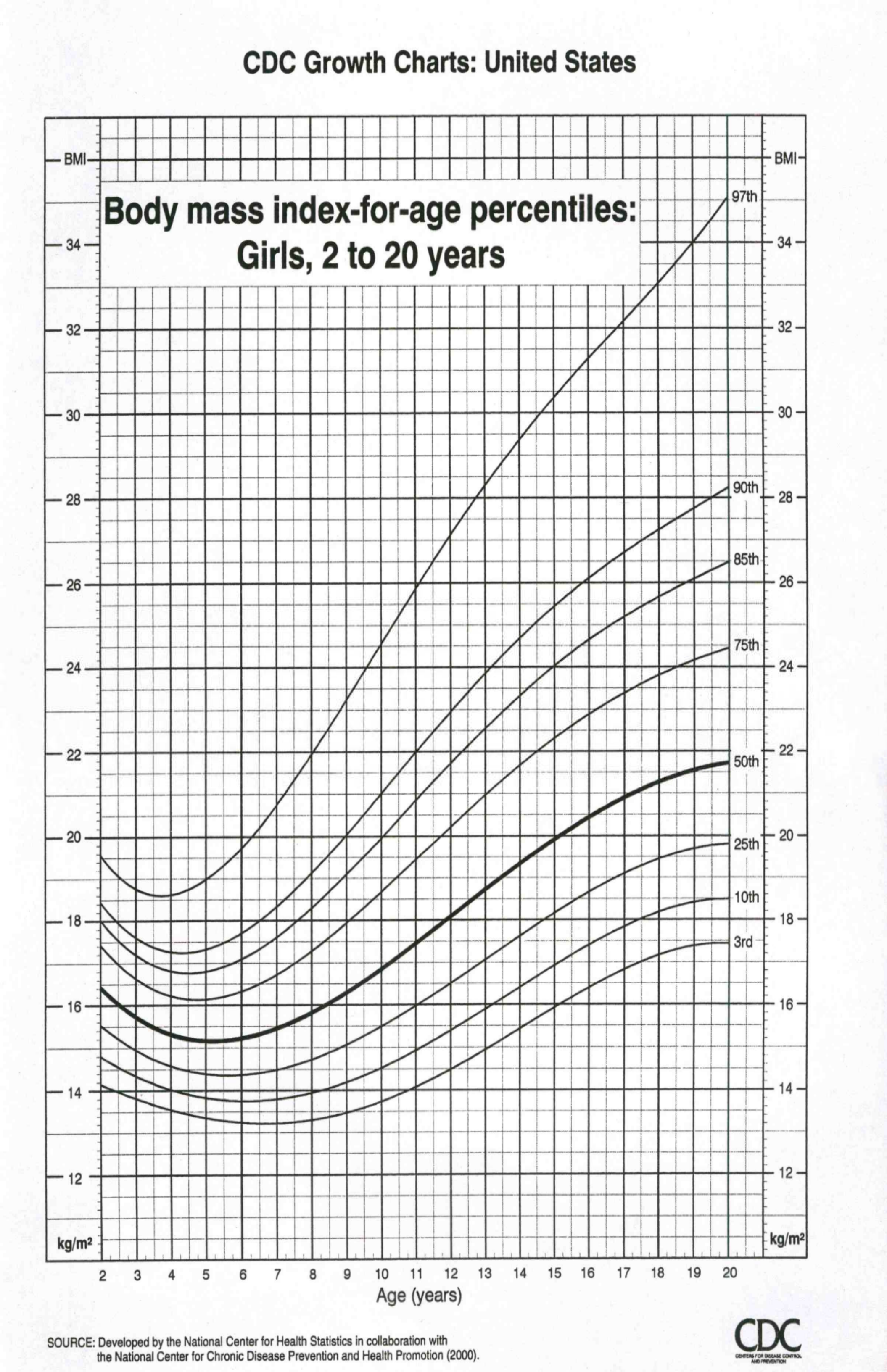
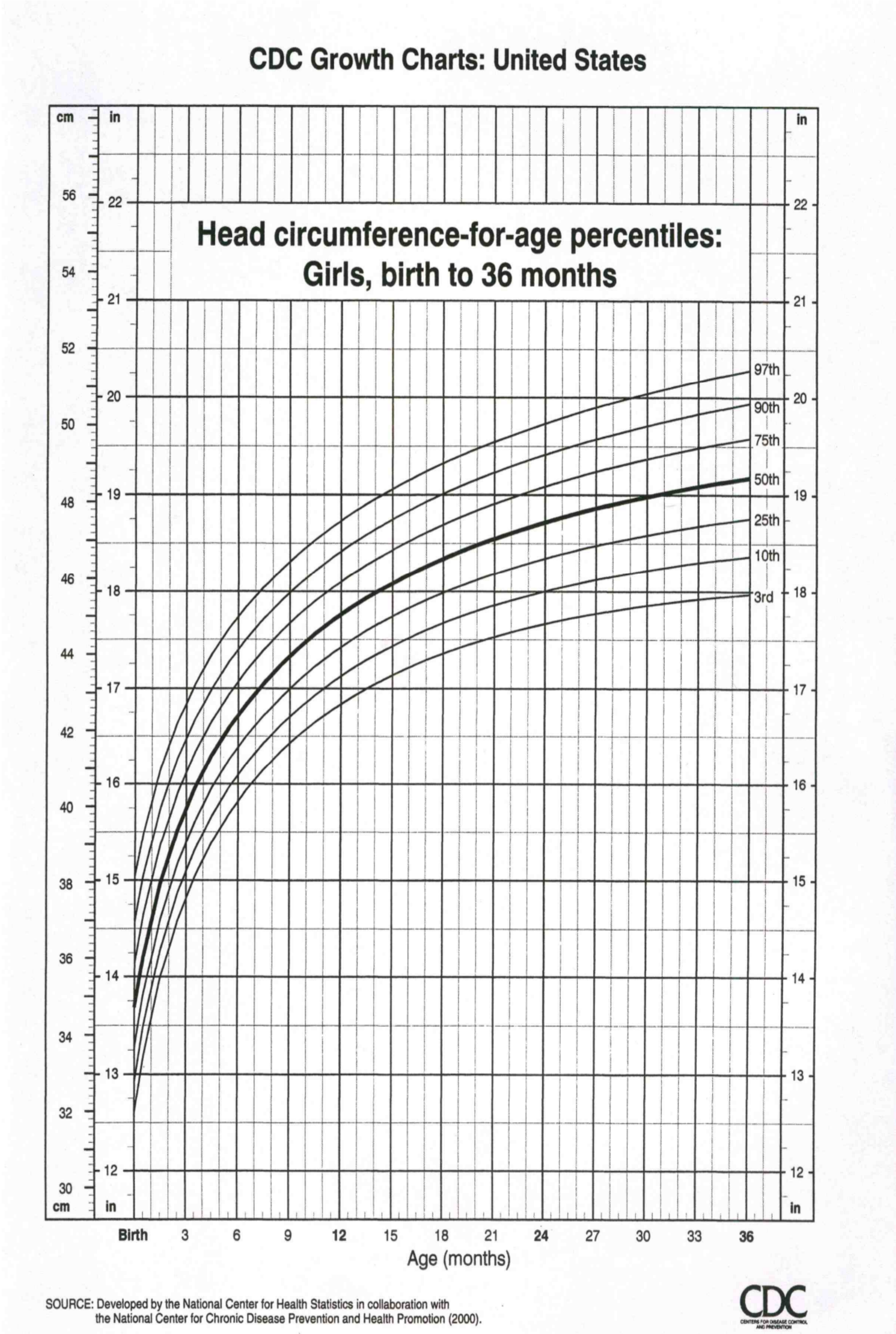
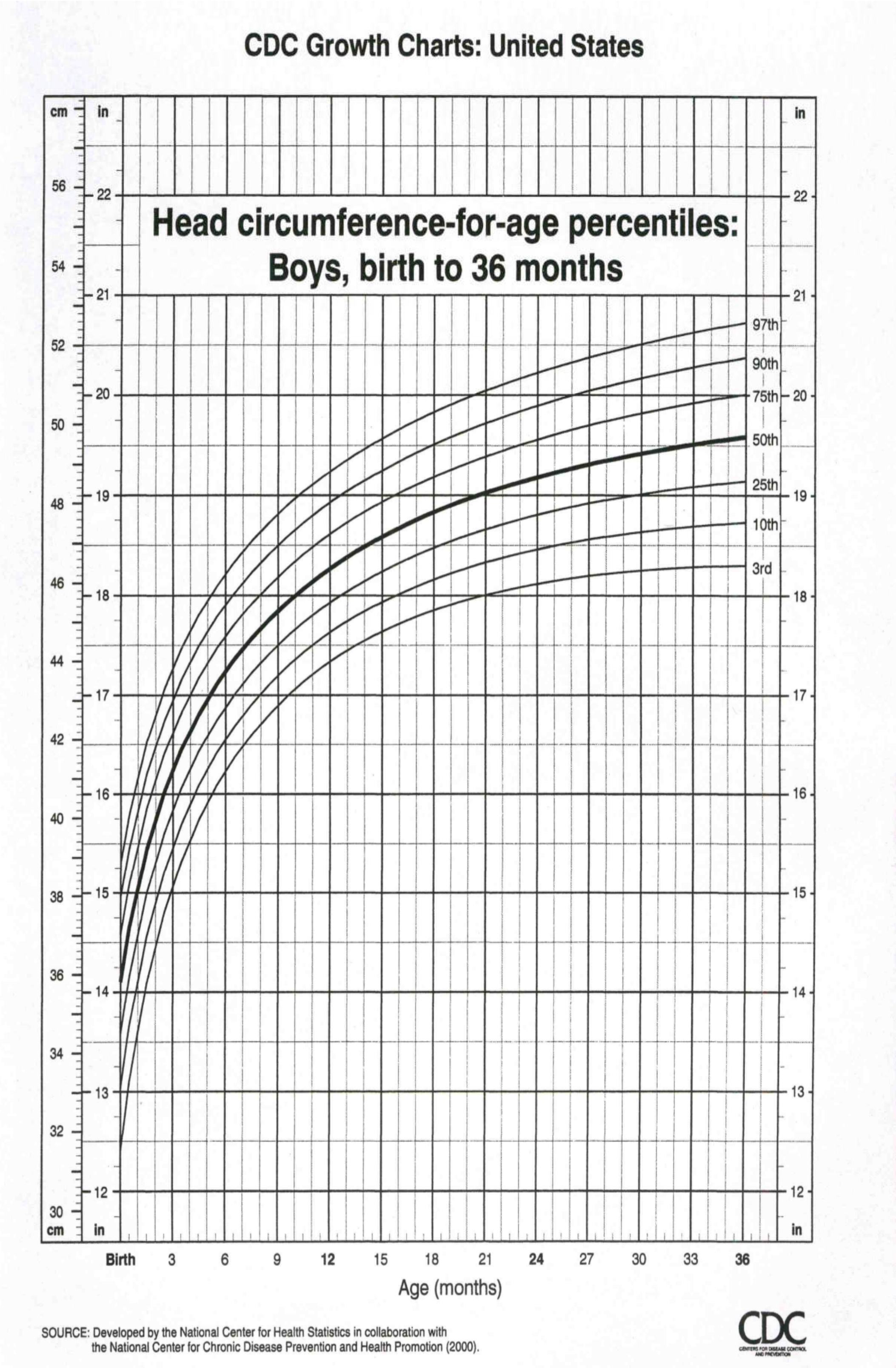

CDC Growth Charts: United States
Body mass index-for-age percentiles:
Girls, 2 to 20 years
BMI
97th
90th
85th
75th
50th
25th
10th
3rd
34
32
30
28
26
24
22
20
18
16
14
12
kg/m²
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Age (years)
SOURCE: Developed by the National Center for Health Statistics in collaboration with
the National Center for Chronic Disease Prevention and Health Promotion (2000).
CDC

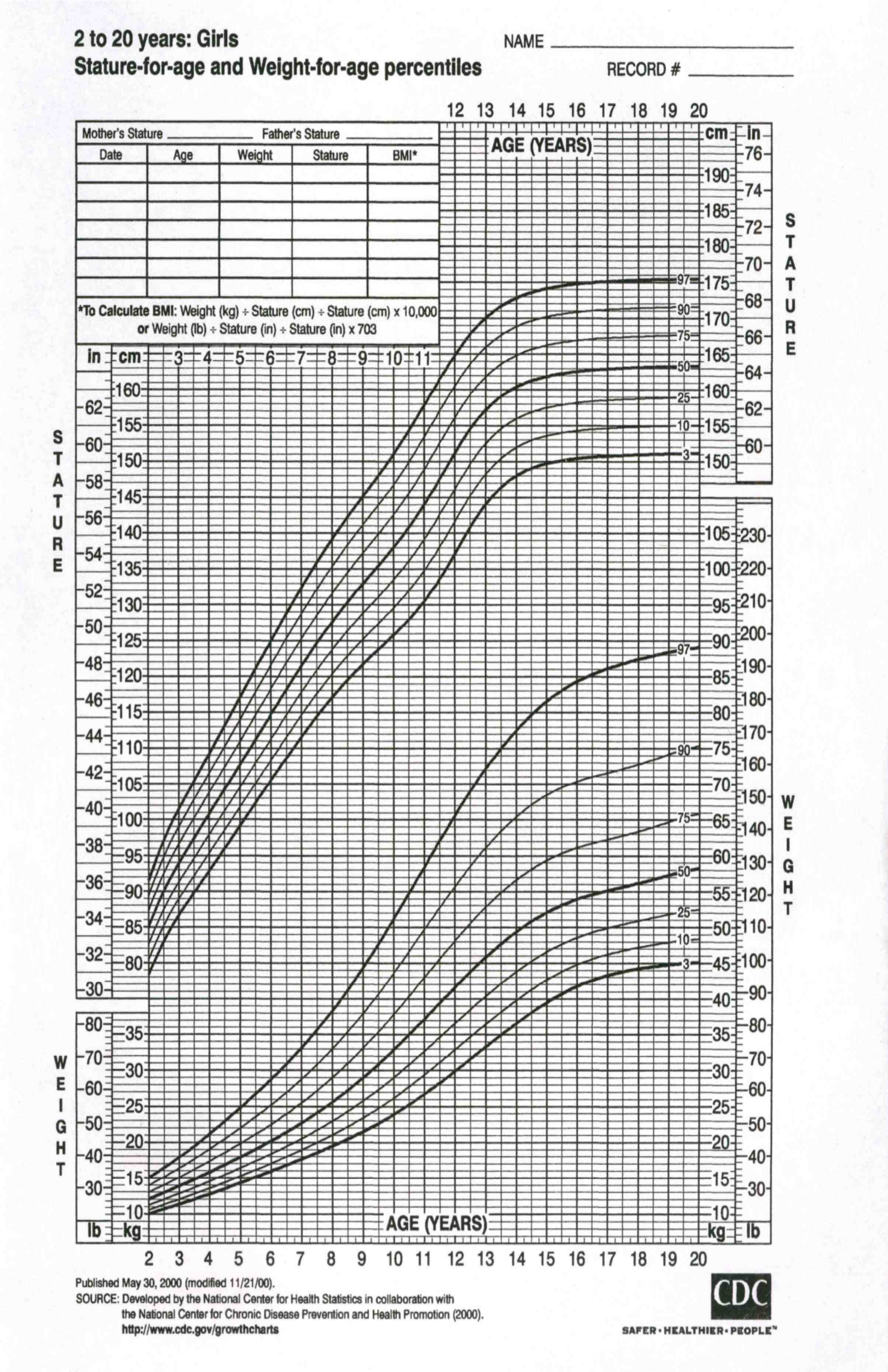
APPENDIX B


CDC Growth Charts: United States
Head circumference-for-age percentiles:
Girls, birth to 36 months
cm
in
97th
90th
75th
50th
25th
10th
3rd
Birth
3
6
9
12
15
18
21
24
27
30
33
36
Age (months)
SOURCE: Developed by the National Center for Health Statistics in collaboration with
the National Center for Chronic Disease Prevention and Health Promotion (2000).
CDC

APPENDIX B


CDC Growth Charts: United States
Head circumference-for-age percentiles:
Boys, birth to 36 months
cm
in
97th
90th
75th
50th
25th
10th
3rd
Birth 3 6 9 12 15 18 21 24 27 30 33 36
Age (months)
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
CDC

APPENDIX B


2 to 20 years: Girls
Stature-for-age and Weight-for-age percentiles
NAME
RECORD #
Mother's Stature
Father's Stature
Date
Age
Weight
Stature
BMI*
*To Calculate BMI: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703
AGE (YEARS)
STATURE
WEIGHT
in
cm
lb
kg
Published May 30, 2000 (modified 11/21/00).
SOURCE: Developed by the National Center for Health Statistics in collaboration with
the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts
CDC
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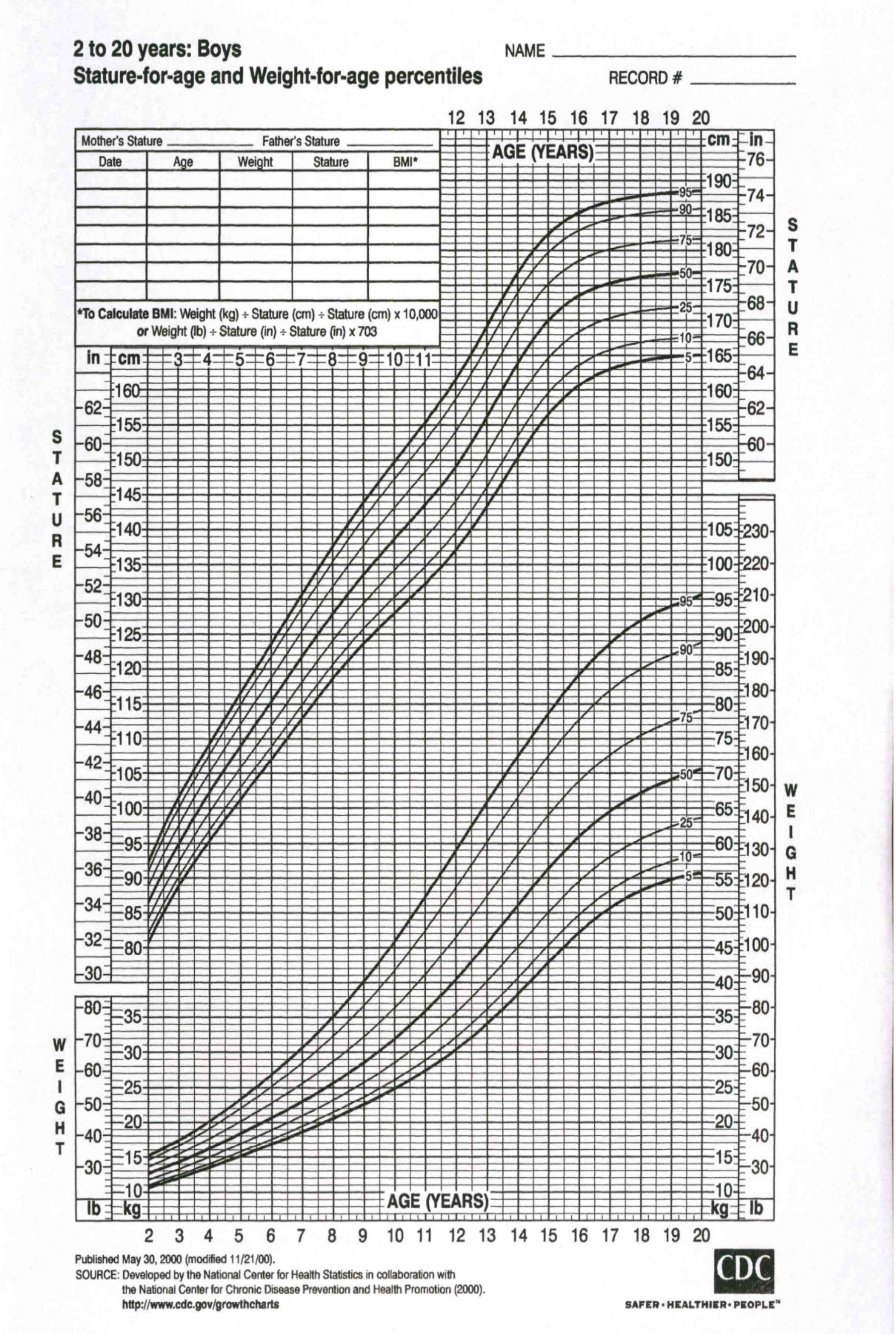
APPENDIX B


2 to 20 years: Boys
Stature-for-age and Weight-for-age percentiles
NAME
RECORD #
Mother's Stature
Father's Stature
Date
Age
Weight
Stature
BMI*
*To Calculate BMI: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703
AGE (YEARS)
STATURE
WEIGHT
Published May 30, 2000 (modified 11/21/00).
SOURCE: Developed by the National Center for Health Statistics in collaboration with
the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts
CDC
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APPENDIX C

VAALWATER DATA

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
1	2	1	1986/07/31	1980/07/31	6.00	M	116.6	20.5	65.4	24.0	17.7	50.3	16.9	5.1	5.6	4.3	2.8	51.2
4	2	3	1986/07/31	1978/04/08	8.31	M	122.6	22.1	64.4	26.1	18.1	52.6	15.7	4.7	6.8	3.8	3.4	58.2
	4	3	1987/07/14	1978/04/08	9.27	M	126.4	22.7	65.3	26.6	18.6	52.6	16.3	5.0	2.8	4.0	4.0	61.1
	6	3	1988/07/11	1978/04/08	10.26	M	130.5	25.1	67.7	29.4	15.7	52.9	16.4	5.4	3.6	4.1	4.4	62.8
	8	3	1989/07/11	1978/04/08	11.26	M	134.3	26.6	68.3	28.9	19.8	53.5	16.2	5.6	4.1	4.1	3.4	66.0
2	2	4	1986/07/31	1979/09/17	6.87	M	127.4	23.0	67.1	26.4	17.5	52.7	15.9	5.8	3.0	4.4	3.0	60.3
	4	4	1987/07/14	1979/09/17	7.82	M	131.8	25.4	68.8	28.1	18.2	53.3	16.8	5.6	2.9	6.4	3.9	63.0
4	2	5	1986/07/31	1979/11/11	6.72	M	114.7	18.5	62.9	24.6	17.6	50.7	15.3	7.5	5.2	5.8	4.0	51.8
	4	5	1987/07/14	1979/11/11	7.67	M	119.8	20.0	64.4	25.4	18.2	50.3	15.3	5.9	3.7	5.8	4.2	55.4
	6	5	1988/07/11	1979/11/11	8.66	M	125.2	22.2	67.6	25.8	18.4	51.9	16.2	7.8	4.2	5.2	3.6	57.6
	8	5	1989/07/11	1977/11/11	9.66	M	129.4	24.4	68.1	28.3	19.5	51.6	16.4	7.4	4.4	6.6	3.4	61.3
3	2	7	1986/07/31	1979/10/06	6.82	M	116.1	17.9	61.6	24.0	16.3	49.8	13.9	4.4	3.6	3.7	2.4	54.5
	4	7	1987/07/14	1979/10/06	7.77	M	121.0	19.9	63.9	24.5	16.6	50.5	15.1	5.8	3.4	4.3	3.0	57.1
	6	7	1988/07/11	1979/10/06	8.76	M	126.0	21.8	65.4	25.6	17.2	51.2	16.0	6.8	3.6	5.6	2.7	60.6
2	2	8	1986/07/31	1979/03/29	7.34	M	107.9	15.2	56.5	23.9	16.1	48.8	13.9	5.2	5.5	5.2	3.1	51.4
	4	8	1987/07/14	1979/03/29	8.29	M	112.0	16.7	59.1	24.9	16.2	49.3	13.9	5.3	3.7	6.3	3.1	52.9

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
1	2	9	1986/07/31	1976/12/08	9.64	M	119.8	21.3	64.9	26.4	18.3	49.9	16.2	6.4	4.8	6.1	3.2	54.9
1	2	11	1986/07/31	1979/04/15	7.29	M	117.3	21.3	64.0	25.9	17.3	51.4	17.4	7.2	5.0	4.9	3.2	53.3
1	2	12	1986/07/31	1978/09/17	7.87	M	121.4	20.8	64.9	27.0	18.8	50.1	15.4	4.4	3.2	4.0	2.4	56.5
2	2	13	1986/07/31	1980/04/05	6.32	M	105.5	17.2	58.2	23.4	15.8	53.2	15.1	6.8	4.5	3.9	2.5	47.3
	4	13	1987/07/14	1980/04/05	7.27	M	109.5	18.4	58.2	24.2	16.3	53.2	14.8	6.9	4.1	3.5	2.8	51.3
3	2	16	1986/07/31	1978/12/28	7.59	M	123.2	21.0	66.9	25.9	17.9	52.4	14.3	6.2	4.8	3.6	3.3	56.3
	4	16	1987/07/14	1978/12/28	8.54	M	128.5	23.7	68.6	26.9	17.9	53.2	15.2	6.2	3.9	4.0	3.4	59.9
	6	16	1988/07/11	1978/12/28	9.53	M	133.5	25.5	71.0	27.8	18.4	53.5	15.7	8.4	4.4	4.3	3.6	62.5
3	2	17	1986/07/28	1979/07/21	7.02	M	117.3	20.5	63.1	23.5	16.1	53.6	15.6	5.1	4.8	4.4	3.0	54.2
	4	17	1987/07/14	1979/07/21	7.98	M	121.3	22.1	63.6	26.1	16.5	54.0	15.7	5.1	4.9	6.0	3.0	57.7
	6	17	1988/07/11	1979/07/21	8.97	M	126.7	23.5	66.4	26.1	17.2	54.0	16.0	5.2	5.0	5.4	3.3	60.3
4	2	18	1986/07/31	1977/10/15	8.79	M	111.5	23.4	64.8	25.5	17.2	52.1	17.4	10.0	5.8	6.6	4.8	46.7
	4	18	1987/07/14	1977/10/15	9.75	M	125.7	24.5	65.3	26.1	17.5	52.4	17.2	8.0	4.6	7.8	7.0	60.4
	6	18	1988/07/11	1977/10/15	10.74	M	130.5	25.8	67.7	27.5	18.0	52.5	17.3	9.4	4.1	6.3	4.4	62.8
	8	18	1989/07/11	1977/10/15	11.74	M	134.2	28.8	68.4	28.3	19.0	53.4	17.7	9.8	4.4	6.7	3.8	65.8
2	4	19	1987/07/14	1972/01/01	15.53	M	147.3	33.1	73.8	31.0	22.5	50.2	18.2	4.4	3.0	4.6	3.2	73.5
	6	19	1988/07/11	1972/01/01	16.52	M	154.5	37.0	76.2	32.5	23.1	50.3	19.2	4.2	3.5	5.4	5.0	78.3
3	4	21	1987/07/14	1976/04/10	11.26	M	134.4	25.9	68.4	27.4	19.4	54.5	16.3	6.0	3.4	5.5	3.2	66.0

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	6	21	1988/07/11	1976/04/10	12.25	M	138.1	27.5	70.5	28.2	19.5	54.9	17.2	6.8	3.5	5.6	3.1	67.6
	8	21	1989/07/11	1976/04/10	13.25	M	140.9	28.7	71.1	28.5	20.0	55.2	16.9	6.3	4.0	5.7	3.2	69.8
3	2	22	1986/07/31	1980/09/23	5.85	M	109.4	18.7	60.9	23.7	16.6	51.7	15.2	7.6	5.0	5.6	4.2	48.5
	4	22	1987/07/14	1980/09/23	6.81	M	114.6	20.3	63.2	25.0	17.2	52.7	15.8	7.1	4.8	5.7	4.9	51.4
	6	22	1988/07/11	1980/09/23	7.80	M	121.8	22.2	66.6	26.2	17.7	52.6	15.7	8.1	4.5	6.1	4.6	55.2
3	2	23	1986/07/31	1977/04/11	9.30	M	127.4	24.2	66.4	28.9	19.1	50.0	16.3	7.0	5.2	5.0	3.4	61.0
	4	23	1987/07/14	1977/04/11	10.26	M	131.0	25.3	65.5	28.4	19.6	50.8	17.4	9.0	3.8	5.5	3.5	65.5
	8	23	1989/07/11	1977/04/11	12.25	M	135.3	27.5	70.3	28.3	20.8	49.4	17.3	7.0	4.3	6.4	2.9	65.0
1	2	24	1986/07/31	1979/03/08	7.40	M	118.7	21.9	64.2	25.6	17.9	51.8	15.9	5.9	6.1	4.6	4.0	54.5
1	2	25	1986/07/31	1976/06/26	10.10	M	127.8	25.6	66.3	27.6	18.2	51.4	17.2	7.2	3.6	5.6	3.6	61.5
1	4	26	1987/07/14	1980/11/27	6.63	M	124.0	20.3	64.7	26.8	18.4	51.8	15.8	4.9	2.7	4.6	3.2	59.3
2	2	27	1986/07/31	1978/02/08	8.47	M	129.9	23.8	67.7	28.4	19.0	49.3	16.6	4.6	3.0	4.2	2.6	62.2
	4	27	1987/07/14	1978/02/08	9.43	M	133.2	24.8	68.2	29.6	18.8	49.4	17.3	5.6	3.3	4.6	3.5	65.0
2	2	28	1986/07/31	1978/10/30	7.75	M	112.3	18.6	60.5	25.1	16.8	50.6	16.8	5.6	3.2	5.0	3.2	51.8
	4	28	1987/07/14	1978/10/30	8.71	M	115.8	19.2	64.5	23.8	17.2	50.8	17.0	4.4	2.7	5.0	2.6	51.3
3	2	29	1986/07/31	1980/01/08	6.56	M	112.2	20.4	61.5	23.2	17.1	52.1	17.1	8.0	9.0	7.4	7.2	50.7
	4	29	1987/07/14	1980/01/08	7.51	M	117.7	21.4	62.8	23.5	17.4	52.7	16.8	9.6	7.2	9.0	9.4	54.9
	8	29	1989/07/11	1980/01/08	9.50	M	128.2	25.3	68.3	27.4	18.7	53.4	17.9	8.8	6.0	7.2	4.0	59.9

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
1	2	30	1986/07/31	1980/02/17	6.45	M	101.6	15.7	58.3	22.8	16.5	49.9	15.6	7.6	6.6	4.0	3.5	43.3
1	2	31	1986/07/31	1981/09/16	4.87	M	106.5	16.2	59.3	23.3	16.1	50.3	16.2	6.1	3.9	4.9	3.1	47.2
1	2	32	1986/07/31	1979/05/31	7.17	M	117.5	20.6	61.9	24.7	17.6	55.2	15.8	6.0	4.7	5.8	3.4	55.6
3	2	33	1986/07/31	1979/01/06	7.16	M	116.4	20.6	61.7	24.4	17.2	50.4	17.1	9.8	4.4	4.4	2.8	54.7
	6	33	1988/07/11	1979/01/06	9.51	M	127.4	23.9	65.7	27.3	18.4	52.0	16.5	6.2	4.7	8.4	4.2	61.7
	8	33	1989/07/11	1979/01/06	10.51	M	131.2	26.3	67.3	27.5	18.5	51.8	18.4	7.2	3.2	6.6	4.0	63.9
3	2	35	1986/07/31	1978/07/25	8.02	M	127.1	21.0	68.8	27.2	18.3	54.5	17.1	6.9	6.6	6.6	4.2	58.2
	4	35	1987/07/14	1978/07/25	8.97	M	131.7	30.5	69.9	28.5	19.1	55.4	18.4	9.8	4.5	7.3	4.7	61.8
	6	35	1988/07/11	1978/07/25	9.96	M	138.1	32.4	73.6	28.8	19.4	54.8	19.0	11.6	4.6	8.9	4.4	64.5
2	2	36	1986/07/31	1978/02/14	8.46	M	124.3	21.0	63.7	25.2	18.1	52.4	15.0	4.8	3.2	4.4	2.8	60.6
	4	36	1987/07/14	1978/02/14	9.41	M	128.9	22.9	64.7	25.3	18.8	52.6	14.7	4.1	3.5	5.0	3.2	64.2
3	2	37	1986/07/31	1979/05/08	7.23	M	114.4	18.3	62.5	23.6	16.2	52.6	14.7	5.0	4.6	4.6	2.8	51.9
	4	37	1987/07/14	1979/05/08	8.18	M	118.9	19.7	63.6	24.2	16.3	52.5	15.8	4.9	3.3	4.2	3.1	55.3
	6	37	1988/07/11	1979/05/08	9.18	M	123.8	21.6	65.5	25.0	17.1	52.8	15.8	5.8	3.8	5.4	3.3	58.3
3	2	38	1986/07/31	1978/06/30	8.09	M	117.4	20.4	63.2	24.5	17.6	53.4	15.7	6.2	5.6	4.8	4.0	54.2
	4	38	1987/07/14	1978/06/30	9.04	M	121.6	20.9	64.8	25.2	17.7	52.6	15.5	6.0	3.2	5.0	3.1	56.8
	8	38	1989/07/11	1978/06/30	11.03	M	130.9	25.9	69.3	27.4	19.0	54.5	17.2	5.9	4.0	6.1	3.3	61.6
4	2	39	1986/07/31	1977/05/14	9.21	M	129.0	23.6	67.3	27.7	19.2	49.8	15.8	5.6	3.4	4.6	2.8	61.7

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	39	1987/07/14	1977/05/14	10.17	M	133.2	25.1	68.3	26.9	19.3	50.3	15.7	4.5	3.0	3.4	2.8	64.9
	6	39	1988/07/11	1977/05/14	11.16	M	138.2	26.4	69.7	27.9	19.8	50.0	16.5	5.0	2.5	4.4	2.8	68.5
	8	39	1989/01/16	1977/05/14	11.68	M	141.6	28.7	70.6	30.5	20.1	50.5	16.3	5.9	3.2	4.3	3.0	71.0
3	2	40	1986/07/31	1976/06/12	10.13	M	130.0	26.4	68.5	26.4	19.3	51.1	18.1	4.6	3.8	4.8	3.6	61.5
	6	40	1988/07/11	1976/06/12	12.08	M	138.5	30.1	73.2	28.6	20.1	51.7	19.2	6.6	4.2	5.1	3.6	65.3
	8	40	1989/07/11	1976/06/12	13.08	M	143.2	32.9	74.2	30.4	20.8	52.0	20.4	6.6	3.5	6.0	2.5	69.0
2	4	41	1987/07/14	1978/10/13	8.75	M	127.4	24.5	68.0	27.7	19.0	50.4	16.2	5.8	3.8	5.2	3.1	59.4
	6	41	1988/07/11	1978/10/13	9.74	M	132.1	26.2	70.2	28.2	19.2	50.5	18.6	9.8	4.2	6.2	3.1	61.9
2	2	42	1986/07/31	1976/11/26	9.68	M	137.1	29.7	67.9	31.0	20.6	52.3	19.3	3.6	2.8	3.8	2.8	69.2
	4	42	1987/07/14	1976/11/26	10.63	M	142.8	32.8	69.7	30.4	21.0	52.3	19.0	4.0	2.8	4.0	2.8	73.1
2	2	44	1986/07/31	1976/11/08	9.73	M	131.5	26.7	66.2	28.0	20.2	52.9	17.1	5.1	3.2	4.8	3.8	65.3
	4	44	1987/07/14	1976/11/08	10.68	M	136.5	28.9	69.0	28.4	20.8	53.6	17.4	4.8	3.5	6.0	3.4	67.5
4	2	45	1986/07/31	1977/05/03	9.24	M	129.5	27.0	69.9	27.5	20.1	52.9	17.0	5.8	3.4	4.9	3.3	59.9
	4	45	1987/07/14	1977/05/03	10.20	M	134.1	29.2	70.9	28.6	20.2	53.8	17.6	5.5	3.7	4.9	3.4	63.2
	6	45	1988/07/11	1977/05/03	11.19	M	139.1	30.7	73.2	28.6	21.3	52.2	18.3	5.8	3.8	4.8	3.2	65.9
	8	45	1989/07/11	1977/05/03	12.19	M	144.5	34.7	75.6	30.1	22.1	53.3	18.4	5.8	4.0	5.4	3.2	68.9
1	2	46	1986/07/31	1974/06/26	12.10	M	153.3	30.0	78.0	32.0	22.8	53.9	21.7	8.6	5.8	14.6	7.0	75.3
1	4	48	1987/07/14	1979/12/30	7.54	M	132.4	23.9	67.3	28.2	19.0	52.2	16.0	5.1	3.0	5.6	3.3	65.1

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
1	6	49	1988/07/11	1975/10/30	12.70	M	137.2	28.4	70.2	30.2	19.3	52.5	18.3	8.6	4.1	5.4	4.1	67.0
2	2	51	1986/07/31	1976/06/11	10.14	M	127.6	23.4	65.0	28.3	18.3	51.1	16.7	8.6	3.8	4.2	3.0	62.6
	6	51	1988/07/11	1976/06/11	12.08	M	135.9	27.0	69.4	29.4	18.8	51.8	18.5	10.0	3.4	4.4	3.1	66.5
1	2	52	1986/07/31	1977/04/24	9.27	M	139.5	33.5	72.1	31.6	20.8	54.5	25.0	6.3	5.6	5.1	4.0	67.4
3	2	54	1986/07/31	1976/11/07	9.73	M	126.8	23.9	67.4	25.8	17.7	52.4	17.7	7.9	5.0	4.8	4.6	59.4
	4	54	1987/07/14	1976/11/07	10.68	M	130.3	25.2	66.8	25.6	18.4	51.8	17.4	7.1	4.6	6.1	4.7	63.5
	6	54	1988/07/11	1976/11/07	11.67	M	134.4	26.4	69.3	27.1	18.4	51.7	18.7	10.6	5.5	6.2	4.2	65.1
3	2	55	1986/07/31	1977/04/09	9.31	M	136.6	25.5	68.3	29.2	20.3	52.3	16.5	5.6	6.2	4.4	3.2	68.3
	4	55	1987/07/14	1977/04/09	10.26	M	141.8	28.0	69.1	28.7	20.6	52.1	16.6	7.2	3.9	6.3	3.8	72.7
	6	55	1988/07/11	1977/04/09	11.26	M	146.4	30.2	70.2	31.0	21.3	52.3	17.0	8.2	5.4	7.2	4.2	76.2
4	2	56	1986/07/31	1977/03/07	9.40	M	126.8	21.7	66.4	26.1	17.8	51.8	15.4	5.8	3.0	5.0	3.2	60.4
	4	56	1987/07/14	1977/03/07	10.35	M	131.2	23.0	66.5	27.3	18.2	52.0	15.5	6.0	3.0	4.4	3.0	64.7
	6	56	1988/07/11	1977/03/07	11.35	M	137.0	25.3	69.8	28.0	18.7	51.3	17.3	7.4	3.4	5.4	3.6	67.2
	8	56	1989/07/11	1977/03/07	12.35	M	141.7	27.5	71.5	29.3	19.9	52.4	16.4	5.6	4.2	5.7	3.0	70.2
3	2	57	1986/07/31	1975/10/07	10.81	M	144.6	26.7	72.0	27.8	19.9	52.2	15.0	4.3	2.7	5.2	3.2	72.6
	4	57	1987/07/14	1975/10/07	11.77	M	149.1	29.1	72.8	29.0	20.8	53.6	16.1	5.4	3.4	5.6	3.8	76.3
	6	57	1988/07/11	1975/10/07	12.76	M	153.2	32.4	75.3	31.7	21.4	52.9	16.7	7.8	3.8	6.4	3.8	77.9
2	2	59	1986/07/31	1978/06/26	8.10	M	117.4	20.0	63.4	26.1	17.7	50.7	16.2	5.1	2.9	4.6	3.0	54.0

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	6	59	1988/07/11	1978/06/26	10.04	M	126.4	23.5	66.0	27.6	18.8	51.0	17.0	5.7	3.4	5.4	3.2	60.4
3	2	60	1986/07/31	1979/06/26	7.10	M	117.9	20.1	62.3	25.2	16.9	51.0	16.3	5.9	3.6	4.7	3.6	55.6
	4	60	1987/07/14	1979/06/26	8.05	M	121.2	21.9	63.5	24.2	17.3	50.6	17.6	7.6	3.4	5.4	3.9	57.7
	6	60	1988/07/11	1979/06/26	9.04	M	126.4	24.4	66.1	26.3	18.1	51.2	17.8	NIL	NIL	NIL	NIL	60.3
4	2	61	1986/07/31	1978/03/20	8.36	M	119.3	21.1	63.1	26.8	17.2	49.8	16.8	5.2	4.2	4.4	3.0	56.2
	4	61	1987/07/14	1978/03/20	9.32	M	123.3	22.2	63.2	27.7	17.4	49.9	16.7	5.2	3.5	5.4	3.0	60.1
	6	61	1988/07/11	1978/03/20	10.31	M	128.0	24.5	66.2	29.0	18.4	50.0	16.6	5.4	3.9	5.4	3.2	61.8
	8	61	1989/07/11	1978/03/20	11.31	M	133.2	27.1	67.9	28.9	18.7	50.8	17.5	4.8	3.6	5.4	3.8	65.3
3	2	62	1986/07/31	1976/11/26	9.68	M	136.1	28.0	69.0	27.0	19.4	52.5	17.9	8.1	4.2	4.9	5.7	67.1
	4	62	1987/07/14	1976/11/26	10.63	M	140.3	30.1	70.4	27.5	19.8	52.7	17.6	7.7	4.8	6.9	4.8	69.9
	6	62	1988/07/11	1976/11/26	11.62	M	145.0	31.9	71.7	28.3	20.3	52.4	18.3	11.4	4.7	7.9	5.6	73.3
2	4	63	1987/07/14	1974/07/20	12.98	M	143.3	33.9	71.9	29.6	22.3	53.0	19.6	10.4	5.2	7.9	5.0	71.4
	6	63	1988/07/11	1974/07/20	13.98	M	147.7	35.6	75.1	28.9	22.7	53.4	19.8	11.2	7.4	6.6	5.1	72.6
4	2	64	1986/07/31	1976/04/10	10.31	M	138.4	29.6	71.5	28.2	17.6	54.5	18.1	8.2	4.7	4.6	4.0	66.9
	4	64	1987/07/14	1976/04/10	11.26	M	144.2	33.2	72.4	28.9	18.4	54.7	19.1	10.4	5.4	4.7	4.6	71.8
	6	64	1988/07/11	1976/04/10	12.25	M	149.1	37.5	75.6	31.5	19.0	54.5	20.1	13.6	5.6	6.6	5.3	73.5
	8	64	1989/07/11	1976/04/10	13.25	M	156.7	41.6	78.5	32.7	20.0	55.6	21.1	12.6	6.0	6.2	4.0	78.2
2	2	65	1986/07/31	1975/04/11	11.30	M	136.2	29.3	72.0	28.4	20.2	52.8	18.1	5.4	5.6	5.4	3.6	64.2

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	65	1987/07/14	1975/04/11	12.26	M	140.4	31.3	72.8	NIL	NIL	52.7	17.8	6.2	4.0	6.6	3.6	67.6
2	2	66	1986/07/31	1973/06/28	13.09	M	141.1	32.1	71.4	31.0	21.6	51.3	18.3	5.1	3.3	6.3	3.4	69.7
	4	66	1987/07/14	1973/06/28	14.04	M	144.3	34.4	71.1	30.9	21.4	52.0	17.7	7.3	3.8	7.3	4.1	73.2
4	2	67	1986/07/31	1977/04/20	9.28	M	132.2	27.1	68.9	29.0	18.6	52.2	16.4	6.0	3.6	4.5	3.8	63.3
	4	67	1987/07/14	1977/04/20	10.23	M	137.7	30.8	70.4	29.5	19.1	53.3	17.4	10.2	4.2	5.8	3.2	67.3
	6	67	1988/07/11	1977/04/20	11.22	M	142.4	32.2	72.4	30.9	20.1	53.5	19.0	7.2	4.6	5.8	3.3	70.0
	8	67	1989/07/11	1977/04/20	12.22	M	146.6	34.9	73.1	32.0	20.3	54.0	18.4	7.2	5.0	5.4	3.2	73.5
2	2	68	1986/07/31	1977/10/04	8.82	M	128.5	24.0	68.0	29.0	18.2	50.0	17.2	6.2	3.6	5.4	4.8	60.5
	4	68	1987/07/14	1977/10/04	9.78	M	132.3	26.0	69.6	29.8	17.8	51.3	16.8	6.6	3.7	4.6	3.7	62.7
2	2	70	1986/07/31	1978/05/29	8.17	M	119.0	21.1	65.1	26.0	17.1	50.9	16.7	4.8	2.8	3.5	2.4	53.9
	4	70	1987/07/14	1978/05/29	9.13	M	123.3	22.8	65.7	26.1	17.2	51.3	17.0	4.7	3.2	5.6	3.7	57.6
1	2	71	1986/07/31	1978/07/30	8.00	M	122.8	20.8	65.5	25.4	18.9	51.7	14.6	6.4	4.5	5.0	3.0	57.3
2	2	72	1986/07/31	1977/05/12	9.22	M	132.3	24.9	69.5	26.4	19.5	51.1	17.9	5.4	3.8	4.2	2.8	62.8
	4	72	1987/07/14	1977/05/12	10.17	M	136.8	26.0	70.1	27.4	19.7	51.1	16.0	4.9	4.0	4.5	3.6	66.7
4	2	73	1986/07/31	1975/05/17	11.21	M	129.2	25.8	67.8	28.8	19.4	51.7	16.7	4.6	3.0	4.4	3.6	61.4
	4	73	1987/07/14	1975/05/17	12.16	M	134.1	27.9	69.2	30.1	19.9	52.5	16.3	4.6	3.4	5.9	3.7	64.9
	6	73	1988/07/11	1975/05/17	13.15	M	138.2	30.0	71.2	31.0	20.6	52.9	17.9	5.4	3.4	5.1	3.2	67.0
	8	73	1989/07/11	1975/05/17	14.15	M	145.2	34.7	74.2	32.9	21.6	52.8	18.8	5.2	3.6	5.4	3.3	71.0

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
3	2	74	1986/07/31	1978/04/09	8.31	M	131.2	27.5	68.2	28.0	19.7	53.1	18.1	5.5	3.5	5.2	3.7	63.0
	4	74	1987/07/14	1978/04/09	9.26	M	136.0	29.3	68.2	28.6	20.3	54.0	18.3	5.7	3.8	6.2	3.6	67.8
	6	74	1988/07/11	1978/04/09	10.26	M	140.9	31.5	70.6	29.4	20.5	53.7	18.3	5.4	4.6	6.6	3.7	70.3
4	2	75	1986/07/31	1976/02/23	10.43	M	128.8	21.0	69.4	25.1	16.8	53.5	14.4	4.0	2.8	4.3	2.9	59.4
	4	75	1987/07/14	1976/02/23	11.39	M	133.2	22.4	69.6	26.8	17.8	53.6	15.3	5.0	3.0	4.6	2.7	63.6
	6	75	1988/07/11	1976/02/23	12.38	M	137.7	24.1	71.5	27.6	17.9	53.3	15.5	5.0	3.2	4.1	2.9	66.2
	8	75	1989/07/11	1976/02/23	13.38	M	142.2	24.9	73.4	28.3	18.6	53.5	16.0	5.2	3.2	4.4	2.0	68.8
2	2	76	1986/07/31	1977/09/23	8.85	M	127.5	24.0	65.6	26.6	19.1	51.2	16.9	4.3	2.8	3.6	2.8	61.9
	4	76	1987/07/14	1977/09/23	9.81	M	130.8	25.7	66.3	28.6	19.4	51.7	16.8	4.1	3.0	5.7	3.0	64.5
4	2	77	1986/07/31	1977/01/20	9.53	M	130.0	25.0	67.8	27.0	18.4	52.6	16.2	5.2	3.2	4.6	3.0	62.2
	4	77	1987/07/14	1977/01/20	10.48	M	134.4	26.3	68.8	27.3	19.2	53.0	16.0	5.3	3.0	5.5	3.1	65.6
	6	77	1988/07/11	1977/01/20	11.47	M	138.7	28.3	71.0	27.9	19.5	53.0	16.3	6.2	2.8	5.6	3.0	67.7
	8	77	1989/07/11	1977/01/20	12.47	M	143.0	30.6	72.4	29.1	20.2	54.1	16.0	6.8	3.2	5.8	3.0	70.6
4	2	78	1986/07/31	1977/11/05	8.73	M	120.3	22.5	64.6	25.4	17.6	52.8	16.5	5.1	5.2	4.4	3.4	55.7
	4	78	1987/07/14	1977/11/05	9.69	M	124.2	24.0	65.7	26.7	18.4	52.2	16.6	6.1	3.2	5.8	3.4	58.5
	6	78	1988/07/11	1977/11/05	10.68	M	128.3	26.2	67.3	28.1	18.8	52.5	17.3	6.8	4.2	6.2	4.5	61.0
	8	78	1989/07/11	1977/11/05	11.68	M	133.9	28.0	69.2	28.6	19.3	53.2	18.1	6.0	3.8	6.3	3.2	64.7
2	2	79	1986/07/31	1978/04/09	8.31	M	122.4	20.8	65.3	27.2	18.3	51.6	15.4	5.8	3.6	3.9	2.8	57.1

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	79	1987/07/14	1978/04/09	9.26	M	126.0	22.0	65.5	27.8	18.2	51.6	16.3	6.2	4.4	4.4	2.7	60.5
2	2	80	1986/07/31	1975/07/18	11.04	M	141.6	29.9	70.1	30.0	19.9	53.0	17.8	6.2	5.3	4.9	4.4	71.5
	8	80	1989/07/11	1979/06/26	10.04	M	131.7	25.7	67.6	28.3	18.9	53.0	17.0	5.7	3.2	5.8	2.9	64.1
4	2	81	1986/07/31	1973/10/03	12.83	M	141.6	30.0	71.0	29.2	19.6	51.3	17.8	6.2	5.1	6.4	3.6	70.6
	4	81	1987/07/14	1973/10/03	13.78	M	146.1	33.3	70.7	31.0	20.2	51.8	18.5	7.1	4.3	7.0	4.4	75.4
	6	81	1988/07/11	1973/10/03	14.77	M	154.6	38.8	76.0	33.4	21.2	52.3	19.9	8.6	3.7	7.0	6.6	78.6
	8	81	1989/07/11	1973/10/03	15.77	M	161.0	43.0	79.7	35.0	22.9	52.5	20.7	7.2	5.0	7.2	4.4	81.3
4	2	82	1986/07/31	1976/02/01	10.49	M	137.7	32.7	72.2	29.8	20.2	54.8	20.5	6.8	3.9	4.4	3.6	65.5
	4	82	1987/07/14	1976/02/01	11.45	M	141.8	34.6	72.0	NIL	NIL	55.9	19.3	7.8	3.9	5.5	3.4	69.8
	6	82	1988/07/12	1976/02/01	12.44	M	117.0	20.4	63.1	24.4	18.2	53.2	16.1	8.5	4.0	4.4	2.4	53.9
	8	82	1989/07/11	1976/02/01	13.44	M	151.4	41.2	76.6	33.1	22.7	56.3	20.5	9.2	5.4	4.6	3.6	74.8
4	2	83	1986/07/31	1974/07/04	12.07	M	142.1	32.2	74.2	32.4	22.0	53.9	18.0	5.3	3.4	4.8	2.7	67.9
	4	83	1987/07/14	1974/07/04	13.03	M	151.5	37.4	77.7	34.4	22.7	54.9	19.4	5.1	3.4	5.3	4.4	73.8
	6	83	1988/07/11	1974/07/04	14.02	M	159.5	47.0	83.5	35.2	24.6	55.8	21.8	8.4	4.1	7.8	5.8	76.0
	8	83	1989/07/11	1974/07/04	15.02	M	165.0	52.0	86.6	38.7	25.6	56.1	23.8	7.4	5.0	8.8	4.5	78.4
2	2	84	1986/07/31	1973/02/05	13.48	M	141.3	28.2	71.5	29.7	19.9	52.3	16.7	4.6	4.7	4.8	3.8	69.8
	4	84	1987/07/14	1973/02/05	14.44	M	147.0	30.9	74.1	30.7	22.1	52.4	17.1	6.6	3.5	5.5	5.0	72.9
3	2	85	1986/07/31	1974/06/24	12.10	M	136.6	26.7	71.0	29.0	19.9	52.2	16.8	4.2	4.0	4.0	3.1	65.6

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	85	1987/07/14	1974/06/24	13.06	M	140.9	28.8	71.3	30.6	20.3	53.3	16.3	4.6	3.2	4.2	3.2	69.6
	6	85	1988/07/11	1974/06/24	14.05	M	144.5	30.9	73.2	30.6	20.8	53.2	16.4	5.2	4.0	4.0	3.5	71.3
4	2	87	1986/07/31	1974/10/05	11.82	M	146.3	31.8	73.4	30.4	20.1	52.2	17.6	4.2	3.6	4.2	3.0	72.9
	6	87	1988/07/11	1974/10/05	13.76	M	155.3	42.6	78.0	33.8	22.7	54.7	19.6	5.6	3.4	6.0	6.0	77.3
	8	87	1989/07/11	1974/10/05	14.76	M	162.5	50.0	83.8	36.2	23.8	55.7	21.2	5.6	4.4	6.4	3.6	78.7
	4	87	1987/07/14	NIL	NIL	M	NIL	NIL	NIL	NIL	NIL	NIL	NIL	4.7	3.4	4.2	3.8	NIL
4	2	88	1986/07/31	1975/01/09	11.56	M	140.6	27.1	70.4	25.0	20.1	53.6	17.0	5.2	3.5	4.3	3.7	70.2
	6	88	1988/07/11	1975/01/09	13.50	M	148.9	31.3	73.0	28.2	20.8	54.7	17.3	5.1	3.9	4.6	3.9	75.9
	8	88	1989/07/11	1975/01/09	14.51	M	155.5	34.0	75.2	28.2	21.8	55.0	17.2	4.8	3.2	5.6	3.4	80.3
	4	88	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	5.3	3.1	5.2	3.5	NIL
2	2	89	1986/07/31	1976/11/02	9.74	M	141.5	19.1	72.3	30.6	20.5	53.4	18.0	5.2	3.2	4.3	2.8	69.2
	4	89	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	5.6	3.7	6.7	3.1	NIL
2	2	90	1986/07/31	1976/12/21	9.61	M	139.6	31.6	73.4	29.2	20.4	54.4	19.5	7.0	4.2	5.3	3.3	66.2
	6	90	1988/07/11	1976/12/21	11.55	M	149.4	38.7	77.0	32.0	21.8	54.2	20.7	9.0	5.1	5.8	5.4	72.4
4	2	91	1986/07/31	1976/10/20	9.78	M	129.0	25.0	68.1	25.6	18.3	56.4	15.9	7.4	2.9	4.1	2.4	60.9
	6	91	1988/07/11	1976/10/20	11.72	M	135.9	28.2	70.2	28.4	19.2	55.3	16.8	5.9	2.9	4.8	2.7	65.7
	8	91	1989/07/11	1976/10/20	12.72	M	142.5	31.4	73.4	29.8	20.3	56.5	17.6	4.8	3.0	4.9	2.8	69.1
	4	91	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	5.8	2.7	4.8	3.0	64.5

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
4	2	92	1986/07/31	1975/09/24	10.85	M	135.4	27.2	69.5	29.2	19.3	51.0	18.1	7.2	4.5	4.7	4.4	65.9
	6	92	1988/07/11	1975/09/24	12.79	M	144.0	32.9	72.0	29.8	20.3	52.0	18.5	11.2	5.8	6.2	4.8	72.0
	8	92	1989/07/11	1975/09/24	13.79	M	151.4	37.5	78.0	32.2	21.6			11.3	4.8	6.3	4.6	73.4
	4	92	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	9.1	4.3	8.0	5.5	70.0
2	2	93	1986/07/31	1976/08/30	9.92	M	131.4	26.2	67.5	28.6	18.3	53.7	17.5	4.3	4.2	4.6	3.4	63.9
	4	93	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	4.3	3.3	3.8	3.4	65.5
3	6	94	1988/07/11	1974/06/20	14.06	M	141.8	29.8	71.4	31.1	22.0	50.6	18.6	9.2	3.8	6.4	4.9	70.4
	8	94	1989/07/11	1974/06/20	15.06	M	149.7	34.3	75.6	33.1	22.8	50.4	19.2	8.0	4.0	7.0	4.0	74.1
	4	94	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	9.4	4.8	8.4	3.9	67.2
2	2	95	1986/07/31	1975/09/10	10.89	M	146.8	32.4	77.1	30.6	20.1	56.1	18.5	5.0	4.0	4.8	3.7	69.7
	4	95	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	5.4	2.9	6.9	4.5	74.2
3	2	96	1986/07/31	1974/11/11	11.72	M	144.0	33.2	74.0	31.4	21.6	53.6	18.7	5.6	3.2	5.8	4.7	70.0
	8	96	1989/07/11	1974/11/11	14.66	M	161.5	44.4	81.3	35.0	23.9	55.1	19.7	6.0	3.8	6.2	4.1	80.2
	4	96	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	6.4	3.2	4.7	3.6	73.7
4	2	97	1986/07/31	1974/06/08	12.15	M	134.8	28.8	69.5	28.1	19.6	52.3	17.8	5.9	3.6	4.8	3.6	65.3
	6	97	1988/07/11	1974/06/08	14.09	M	149.6	35.8	73.6	30.2	20.9	53.0	19.9	8.9	4.1	6.1	4.6	76.0
	8	97	1989/07/11	1974/06/08	15.09	M	149.6	39.5	76.0	31.9	21.8	53.0	20.5	7.8	4.2	6.2	3.4	73.6
	4	97	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	7.3	3.5	6.0	4.5	68.0

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4	2	98	1986/07/31	1974/06/27	12.09	M	142.7	30.2	73.8	31.6	19.9	52.2	17.3	4.5	3.1	4.2	3.5	68.9
	6	98	1988/07/11	1974/06/27	14.04	M	159.3	42.8	81.2	35.3	22.6	53.1	21.7	5.2	4.1	6.8	3.8	78.1
	8	98	1989/07/11	1974/06/27	15.04	M	168.1	49.9	85.7	37.7	24.1	53.9	22.4	5.8	5.0	6.6	3.4	82.4
	4	98	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	4.5	3.2	6.0	3.3	74.5
4	2	100	1986/07/31	1973/01/06	13.56	M	138.9	33.9	70.1	30.9	20.7	52.5	19.5	10.9	5.8	6.7	6.2	68.8
	6	100	1988/07/11	1973/01/06	15.51	M	153.7	43.9	78.5	32.3	21.6	53.5	21.6	12.6	6.0	7.0	7.8	75.2
	8	100	1989/07/11	1973/01/06	16.51	M	158.7	49.8	82.0	35.2	23.2	54.6	22.9	13.4	5.1	9.0	7.0	76.7
	4	100	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	12.3	5.0	8.0	6.2	72.5
4	2	101	1986/07/31	1974/05/10	12.23	M	146.3	36.2	74.8	31.2	21.3	53.2	20.1	6.8	5.4	5.4	5.0	71.5
	6	101	1988/07/11	1974/05/10	14.17	M	162.2	48.7	83.5	35.1	24.0	53.8	22.0	7.0	4.0	7.2	5.2	78.7
	8	101	1989/07/11	1974/05/10	15.17	M	167.5	54.9	86.0	36.6	24.5	55.7	24.0	7.4	4.2	6.9	4.3	81.5
	4	101	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	7.6	4.4	4.4	4.6	76.5
3	2	102	1986/07/31	1972/01/11	14.55	M	148.5	32.9	76.6	30.4	22.0	53.2	17.5	6.6	4.3	5.4	4.1	71.9
	6	102	1988/07/11	1972/01/11	16.50	M	161.2	42.3	83.1	33.4	23.9	53.7	19.6	7.8	4.4	7.0	5.4	78.1
	4	102	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	8.7	4.3	6.1	4.5	75.6
4	2	103	1986/07/31	1972/06/22	14.11	M	141.7	30.7	73.8	30.6	20.1	54.0	19.0	5.3	4.0	4.9	3.4	67.9
	6	103	1988/07/11	1972/06/22	16.05	M	152.4	38.9	78.5	33.6	22.1	54.0	21.0	7.1	3.8	6.4	4.6	73.9
	8	103	1989/07/11	1972/06/22	17.05	M	158.1	43.5	80.9	34.8	23.6	54.6	22.4	6.8	4.0	7.2	5.2	77.2

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	103	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	5.0	3.4	5.6	3.6	71.5
2	2	104	1986/07/31	1975/07/29	11.01	M	141.1	32.1	75.8	30.4	20.6	52.3	19.2	6.1	4.0	4.7	4.0	65.3
	4	104	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	8.6	5.4	7.2	4.5	84.3
3	2	105	1986/07/31	1972/03/09	14.39	M	141.0	32.4	73.4	29.4	20.7	52.6	18.6	6.4	3.2	4.8	3.4	67.6
	6	105	1988/07/11	1972/03/09	16.34	M	146.1	36.5	75.6	30.4	20.9	53.2	20.6	9.1	3.6	4.7	4.3	70.5
	4	105	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	8.7	3.7	5.5	4.2	70.7
2	2	106	1986/07/31	1971/12/23	14.60	M	154.3	40.4	78.0	31.4	22.4	53.7	19.8	4.5	2.9	4.9	3.9	76.3
	4	106	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	6.0	4.0	6.3	4.6	81.2
4	2	108	1986/07/31	1970/07/30	16.00	M	160.6	42.1	79.4	33.0	23.3	55.5	18.5	4.5	3.0	4.8	3.8	81.2
	6	108	1988/07/11	1970/07/30	17.95	M	170.1	52.3	84.5	35.8	25.1	56.8	21.3	5.2	3.6	5.7	5.4	85.6
	8	108	1989/07/11	1970/07/30	18.95	M	172.4	55.6	85.8	36.7	26.0	57.8	21.7	4.8	3.4	6.0	4.5	86.6
	4	108	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	5.0	3.4	5.8	4.2	83.3
3	2	109	1986/07/31	1970/07/30	16.00	M	162.2	43.0	80.8	32.0	23.4	55.5	19.4	4.4	3.2	5.2	3.8	81.4
	6	109	1988/07/11	1970/07/30	17.95	M	171.2	53.6	85.8	36.1	25.2	56.0	22.6	4.8	3.9	6.8	4.2	85.4
	4	109	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	4.4	3.4	6.6	5.1	83.8
1	2	110	1986/07/31	1970/04/08	16.31	M	153.2	37.5	77.3	32.5	23.3	55.2	18.0	4.5	2.8	4.6	3.4	75.9
2	2	111	1986/07/31	1970/05/25	16.18	M	153.0	34.3	75.4	31.7	22.4	52.8	18.0	4.8	4.0	3.9	3.2	77.6
	4	111	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	4.7	2.9	4.7	3.4	79.8

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
2	2	112	1986/07/31	1974/01/08	12.56	M	140.7	31.9	74.7	30.6	19.6	53.4	17.6	5.4	3.9	4.5	3.4	66.0
	4	112	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	5.4	3.0	5.0	3.9	70.0
4	2	114	1986/07/31	1972/02/05	14.48	M	162.8	41.6	81.0	31.4	22.9	54.8	18.7	5.6	3.5	5.0	4.6	81.8
	6	114	1988/07/11	1972/02/05	16.43	M	175.8	53.6	88.8	36.3	24.7	56.2	22.7	7.4	5.2	7.6	5.6	87.0
	8	114	1989/07/11	1972/02/05	17.43	M	177.9	56.7	90.4	36.9	25.5	56.0	23.0	7.4	4.4	7.2	4.4	87.5
	4	114	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	6.9	3.7	6.5	5.5	85.1
2	2	115	1986/07/31	1971/12/01	14.66	M	170.1	51.3	78.7	34.7	25.2	53.4	23.1	6.9	2.8	6.4	3.8	91.4
	4	115	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	7.1	4.0	7.1	6.0	92.1
4	2	116	1986/07/31	1972/12/25	13.60	M	152.8	39.1	76.5	34.0	23.3	53.4	19.6	5.4	4.7	5.4	4.7	76.3
	6	116	1988/07/11	1972/12/25	15.54	M	167.3	49.8	85.6	36.6	25.6	54.1	23.9	6.0	4.6	9.2	5.2	81.7
	8	116	1989/07/11	1972/12/25	16.54	M	170.4	54.2	87.7	38.2	26.8	54.4	23.1	6.4	5.4	8.2	5.2	82.7
	4	116	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	5.6	3.8	7.3	5.7	79.9
2	6	117	1988/07/11	1969/06/03	19.10	M	163.2	56.5	85.2	37.2	26.1	53.5	24.5	10.6	6.2	9.4	4.4	78.0
	4	117	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	9.6	5.6	11.8	5.6	79.6
2	2	118	1986/07/31	1972/10/20	13.78	M	150.1	36.6	76.1	23.0	21.7	52.5	20.3	9.0	4.5	6.2	3.8	74.0
	4	118	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	7.8	4.9	5.3	4.6	76.8
2	2	119	1986/07/31	1970/08/17	15.95	M	157.9	37.4	78.6	32.0	20.1	52.4	18.9	8.0	4.7	6.6	4.8	79.3
	4	119	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	6.7	3.7	6.5	5.4	82.2

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
2	2	120	1986/07/31	1971/02/21	15.44	M	148.7	38.8	74.7	30.0	22.0	53.9	20.8	6.0	4.6	5.8	3.8	74.0
	6	120	1988/07/11	1971/02/21	17.38	M	159.1	47.8	80.1	35.1	24.5	54.0	23.5	6.8	4.0	8.6	6.6	79.0
3	2	121	1986/07/31	1972/02/16	14.45	M	150.1	37.3	73.8	32.0	21.2	52.9	19.3	6.3	4.5	4.7	3.8	76.3
	6	121	1988/07/11	1972/02/16	16.40	M	163.7	48.6	83.8	35.1	23.1	53.8	21.2	7.5	3.9	6.0	4.5	79.9
	4	121	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	6.4	4.0	6.6	4.1	79.3
3	2	122	1986/07/31	1974/08/13	11.96	M	140.6	30.4	71.7	29.6	18.9	54.2	17.5	5.2	3.9	4.6	3.7	68.9
	6	122	1988/07/11	1974/08/13	13.91	M	154.5	36.9	76.1	31.2	20.6	54.0	20.7	6.1	4.6	10.2	5.3	78.4
	4	122	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	5.1	3.8	6.3	4.1	73.4
2	2	124	1986/07/31	1971/06/05	15.15	M	153.7	39.9	79.4	33.0	23.6	53.9	18.9	7.1	4.5	5.2	3.4	74.3
	4	124	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	6.6	3.9	6.7	3.5	78.3
3	2	126	1986/07/31	1971/02/06	15.48	M	145.9	40.5	73.3	32.6	21.9	56.2	21.4	5.4	4.1	4.7	3.4	72.6
	6	126	1988/07/11	1971/02/03	17.42	M	155.6	47.8	76.6	34.2	24.1	55.4	22.7	6.0	4.3	5.0	3.5	79.0
	4	126	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	5.1	3.8	6.3	3.7	77.8
4	2	127	1986/07/31	1974/02/04	12.49	M	143.9	31.1	72.7	29.0	20.4	52.0	16.8	5.4	3.7	5.6	3.6	71.2
	6	127	1988/07/11	1974/02/04	14.43	M	152.6	37.3	76.3	30.5	21.9	52.9	19.1	7.4	6.3	8.2	5.8	76.3
	8	127	1989/07/11	1974/02/04	15.43	M	159.6	41.4	78.6	31.9	22.8	52.7	19.7	7.4	5.0	6.6	4.1	81.0
	4	127	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	5.4	4.4	5.7	4.4	74.4
2	2	128	1986/07/31	1974/06/13	12.13	M	130.5	26.0	66.2	28.5	19.2	54.2	18.9	8.7	4.3	5.3	3.0	64.3

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	128	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	6.8	3.9	5.2	3.3	68.1
2	2	129	1986/07/31	1973/08/05	12.99	M	140.1	28.2	70.7	28.6	21.1	52.2	16.1	4.5	3.5	4.8	4.4	69.4
	4	129	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	5.4	2.9	5.0	3.6	71.6
3	2	130	1986/07/31	1972/02/03	14.49	M	151.9	39.6	77.9	33.0	22.8	55.2	19.1	7.4	5.4	6.2	4.1	74.0
	6	130	1988/07/11	1972/02/03	16.43	M	165.6	52.1	85.0	37.5	25.1	54.0	21.2	8.8	4.2	8.7	5.5	80.6
	4	130	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	11.4	5.6	8.5	4.3	76.9
4	2	131	1986/07/31	1975/03/25	11.35	M	140.3	30.3	72.9	28.0	19.3	54.7	17.2	7.8	5.9	4.4	3.2	67.4
	6	131	1988/07/11	1975/03/25	13.30	M	148.3	35.3	76.5	30.1	20.9	54.2	18.4	8.0	4.1	5.6	4.1	71.8
	8	131	1989/07/11	1975/03/25	14.30	M	153.7	39.7	78.5	31.0	21.5	54.3	18.7	8.8	5.2	6.2	3.4	75.2
	4	131	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	6.3	4.5	6.1	3.5	70.4
3	2	132	1986/07/31	1969/10/15	16.79	M	169.6	50.6	83.7	37.0	23.7	55.5	22.4	4.0	3.7	5.9	4.5	85.9
	6	132	1988/07/11	1969/10/15	18.74	M	174.2	53.1	86.3	37.7	24.8	55.8	26.7	5.2	3.9	7.2	4.6	87.9
	4	132	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	4.6	2.9	6.1	4.2	89.1
4	2	133	1986/07/31	1974/05/15	12.21	M	142.9	32.1	74.1	31.4	20.4	54.3	19.6	5.6	3.4	4.3	2.9	68.8
	6	133	1988/07/11	1974/05/15	14.16	M	156.1	43.0	80.3	35.2	22.4	53.2	22.0	7.2	4.2	5.0	4.8	75.8
	8	133	1989/07/11	1974/05/15	15.16	M	165.2	52.4	85.7	38.4	24.5	54.9	23.1	8.5	5.2	8.2	4.8	79.5
	4	133	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	7.1	3.4	6.1	4.2	71.7
2	2	134	1986/07/31	1972/02/15	14.45	M	151.4	38.0	75.2	32.9	21.2	53.7	20.3	4.9	3.5	4.6	2.9	76.2

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	134	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	4.4	2.9	5.5	4.0	81.1
4	2	135	1986/07/31	1974/09/14	11.88	M	139.4	30.3	74.1	32.0	20.6	55.8	20.1	4.2	2.8	4.0	2.6	65.3
	6	135	1988/07/11	1974/09/14	13.82	M	149.1	38.6	78.1	34.7	22.2	55.1	21.3	8.8	4.2	5.8	4.4	71.0
	8	135	1989/07/11	1974/09/14	14.82	M	157.2	34.4	82.0	37.1	23.6	56.5	21.8	6.4	4.4	5.6	3.6	75.2
	4	135	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	5.5	2.9	4.7	3.6	67.6
2	2	136	1986/07/31	1966/03/07	20.48	M	170.5	49.4	83.2	34.2	23.2	57.1	21.5	5.6	4.8	6.5	6.2	87.3
	4	136	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	4.9	2.9	6.4	5.3	88.0
3	2	137	1986/07/31	1972/06/06	14.15	M	146.3	35.1	72.9	30.2	20.7	55.0	19.3	5.6	5.2	6.1	4.8	73.4
	6	137	1988/07/11	1972/06/06	16.10	M	159.0	44.8	79.3	33.4	22.2	55.4	41.7	7.6	4.4	7.0	6.3	79.7
	4	137	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	6.3	4.2	6.7	6.6	76.5
2	2	138	1986/07/31	1972/10/18	13.78	M	143.2	30.9	73.8	30.9	19.7	54.3	17.4	5.8	4.1	4.6	3.6	69.4
	4	138	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	5.3	3.5	4.5	3.3	72.4
2	2	139	1986/07/31	1968/07/03	18.08	M	170.8	48.3	83.6	35.4	23.9	56.4	21.5	4.5	2.9	6.9	3.5	87.2
	4	139	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	5.9	3.8	5.5	4.5	86.1
4	2	141	1986/07/31	1972/10/13	13.80	M	143.1	33.5	74.3	28.6	20.9	53.9	18.3	5.7	4.3	4.1	3.2	68.8
	6	141	1988/07/11	1972/10/13	15.74	M	153.0	40.2	79.1	31.2	22.2	53.5	20.0	7.1	3.0	4.9	3.5	73.9
	8	141	1989/07/11	1972/10/13	16.74	M	159.2	45.2	82.6	33.2	22.9	54.6	20.7	5.6	4.0	4.8	3.0	76.6
	4	141	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	6.0	2.8	4.5	2.7	71.3

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2	2	142	1986/07/31	1969/12/05	16.65	M	166.5	53.7	84.6	38.8	24.8	54.2	23.7	5.4	4.6	6.6	5.4	81.9
	4	142	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	6.6	3.8	7.5	5.5	84.2
1	2	143	1986/07/31	1973/01/20	13.53	M	159.9	42.0	82.5	34.0	22.4	56.7	20.2	6.8	6.4	6.2	5.7	77.4
2	6	144	1988/07/11	1972/08/14	15.91	M	158.1	42.0	82.3	31.6	22.4	53.1	23.2	7.9	3.8	7.1	5.8	75.8
	4	144	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	7.8	4.0	7.2	4.6	72.1
4	2	146	1986/07/31	1972/11/12	13.72	M	150.1	35.1	73.2	32.2	22.1	55.2	18.4	7.6	4.2	8.4	5.1	76.9
	6	146	1988/07/11	1972/11/12	15.66	M	160.3	42.1	80.6	35.2	23.6	56.2	20.4	10.0	6.2	9.6	6.2	79.7
	8	146	1989/07/11	1972/11/12	16.66	M	162.1	45.6	81.2	36.3	24.5	55.8	20.4	8.4	5.4	11.8	4.6	80.9
	4	146	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	8.4	5.4	11.6	5.1	80.7
1	2	147	1986/07/31	1971/08/07	14.98	M	155.2	44.6	79.6	33.6	23.0	55.7	21.4	7.3	5.3	5.5	4.0	75.6
3	6	148	1988/07/11	1968/03/04	20.35	M	163.6	51.4	82.9	36.8	23.8	53.3	25.2	7.9	4.8	9.4	7.4	80.7
	8	148	1989/07/11	1968/03/04	21.35	M	164.0	52.6	83.5	37.0	23.4	53.6	24.0	6.1	3.7	8.3	5.4	80.5
	4	148	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	6.0	4.0	8.7	5.0	82.6
2	2	150	1986/07/31	1970/03/05	16.41	M	167.8	55.4	88.1	37.1	26.8	56.2	23.2	5.4	4.5	6.3	5.2	79.7
	4	150	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	6.0	4.2	7.6	5.6	80.1
3	2	151	1986/07/31	1967/07/11	19.06	M	172.5	57.3	84.7	35.4	26.4	56.1	24.4	6.8	4.4	7.0	5.1	87.8
	6	151	1988/07/11	1967/07/11	21.00	M	172.5	59.2	86.5	36.7	26.4	55.6	25.5	7.9	4.3	8.5	4.7	86.0
	4	151	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	7.9	3.9	7.6	5.4	86.8

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1	2	152	1986/07/31	1969/03/22	17.36	M	163.6	47.8	83.0	33.0	23.2	57.4	21.4	5.1	3.0	5.0	3.4	80.6
1	2	153	1986/07/31	1972/10/17	13.79	M	152.5	49.5	76.6	33.4	22.5	57.5	24.3	16.6	10.8	9.3	14.3	75.9
2	2	154	1986/07/31	1968/06/09	18.14	M	179.4	62.7	89.5	39.8	25.6	56.4	24.0	3.9	4.1	10.3	5.1	89.9
	4	154	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	5.7	4.0	8.9	5.7	91.9
3	2	155	1986/07/31	1972/12/26	13.59	M	156.7	37.3	80.8	30.6	22.6	53.6	19.1	5.6	3.0	5.0	3.8	75.9
	6	155	1988/07/11	1972/12/26	15.54	M	170.2	46.0	85.9	33.3	24.2	53.0	21.7	7.0	3.8	6.9	6.4	84.3
	4	155	1987/07/14	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	7.2	3.3	7.6	4.8	80.7
4	2	156	1986/07/31	1973/01/06	13.56	M	144.7	37.9	74.9	32.8	21.7	57.3	20.0	9.6	6.6	7.9	4.2	69.8
	4	156	1987/07/14	1973/01/06	14.52	M	150.4	42.1	78.2	34.8	21.4	57.0	20.6	6.9	5.3	6.5	5.0	72.2
	6	156	1988/07/11	1973/01/06	15.51	M	157.7	47.6	83.8	37.3	23.9	56.5	22.0	6.6	4.5	7.8	6.3	73.9
	8	156	1989/07/11	1973/01/06	16.51	M	161.7	54.3	85.7	39.2	25.0	56.9	24.1	9.0	7.1	11.0	5.0	76.0
3	2	157	1986/07/31	1971/05/03	15.24	M	142.2	34.6	71.8	30.4	22.0	52.5	19.6	6.7	4.8	4.8	3.6	70.4
	4	157	1987/07/14	1971/05/03	16.20	M	147.3	38.5	76.0	32.9	22.5	52.6	21.0	6.8	2.9	6.4	4.0	71.3
	6	157	1988/07/11	1971/05/03	17.19	M	155.1	45.2	80.0	33.8	24.1	53.7	22.0	6.0	3.5	6.6	3.8	75.1
2	2	158	1986/07/31	1968/01/05	18.57	M	180.3	58.1	87.0	37.8	27.2	55.2	22.5	4.7	4.6	6.0	3.7	93.3
	4	158	1987/07/14	1968/01/05	19.52	M	180.9	60.5	87.8	40.7	27.4	54.8	22.4	4.7	3.7	7.4	4.6	93.1
3	2	159	1986/07/31	1968/04/07	18.32	M	168.6	57.6	83.8	37.0	25.8	58.1	24.7	6.2	4.3	7.2	4.8	84.8
	4	159	1987/07/14	1968/04/07	19.27	M	169.0	57.3	86.3	37.0	26.1	57.4	24.2	5.8	4.0	6.8	5.4	82.7

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	6	159	1988/07/11	1968/04/07	20.26	M	170.1	59.4	87.3	37.0	26.2	57.2	25.4	7.5	4.0	8.8	4.6	82.8
3	2	160	1986/07/31	1971/05/22	15.19	M	146.9	38.1	76.5	32.0	20.5	56.9	20.8	6.7	4.7	5.4	5.2	70.4
	4	160	1987/07/14	1971/05/22	16.15	M	153.2	44.7	79.5	33.3	20.2	55.5	22.2	7.8	4.3	10.4	6.9	73.7
	6	160	1988/07/11	1971/05/22	17.14	M	157.5	47.8	82.4	36.1	22.1	55.5	23.6	8.8	5.2	8.8	5.8	75.1
1	2	161	1986/07/31	1968/08/18	17.95	M	162.0	50.9	82.4	32.1	23.4	58.9	22.3	5.3	3.4	7.5	4.6	79.6
3	2	162	1986/07/31	1965/11/10	20.72	M	166.5	51.6	84.1	37.7	25.4	59.5	22.4	5.7	3.1	8.4	3.7	82.4
	4	162	1987/07/14	1965/11/10	21.67	M	165.9	50.9	85.3	38.0	25.3	58.3	22.0	5.7	3.4	7.1	4.9	80.6
	6	162	1988/07/11	1965/11/10	22.67	M	166.9	51.5	85.2	37.8	26.0	58.5	24.0	6.2	3.7	8.9	4.7	81.7
4	2	163	1986/07/31	1969/05/19	17.20	M	168.3	53.9	81.8	40.2	24.8	56.2	24.2	5.2	4.6	6.5	4.4	86.5
	4	163	1987/07/14	1969/05/19	18.15	M	168.5	58.5	84.3	40.5	25.1	56.0	25.3	6.7	4.4	8.8	5.4	84.2
	6	163	1988/07/11	1969/05/19	19.15	M	169.0	59.9	85.3	41.4	25.1	56.3	25.8	7.3	4.5	9.8	6.0	83.7
	8	163	1989/07/11	1969/05/19	20.15	M	171.3	60.4	86.0	41.5	25.4	55.9	25.8	6.4	4.4	8.6	4.2	85.3
2	4	166	1987/07/14	1979/04/08	8.27	F	120.8	18.7	63.1	22.0	17.6	48.4	15.3	5.6	5.1	5.3	5.4	57.7
	6	166	1988/07/11	1979/04/08	9.26	F	125.9	20.9	65.6	22.5	17.8	48.2	16.5	5.9	3.4	8.8	9.0	60.3
3	2	167	1986/07/31	1978/11/04	7.74	F	116.4	18.4	61.3	22.8	16.5	50.8	15.7	7.8	5.0	5.4	3.8	55.1
	4	167	1987/07/14	1978/11/04	8.69	F	122.2	20.4	63.7	25.0	17.4	51.2	15.9	6.8	4.8	4.8	3.6	58.5
	8	167	1989/07/11	1978/11/04	10.68	F	134.1	25.6	68.7	26.3	18.9	51.7	16.9	7.2	4.6	5.8	4.4	65.4
3	4	168	1987/07/14	1974/10/04	12.78	F	130.4	24.2	67.8	26.2	19.6	52.2	16.5	6.6	5.5	4.2	2.7	62.6

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	6	168	1988/07/11	1974/10/04	13.77	F	135.3	25.6	70.4	27.4	20.4	52.4	17.1	8.3	3.6	5.6	4.0	64.9
	8	168	1989/07/11	1974/10/04	14.77	F	141.3	28.8	71.5	29.8	21.3	52.1	18.6	7.8	5.4	5.8	3.2	69.8
3	2	169	1986/07/31	1979/04/14	7.30	F	118.1	18.9	61.9	25.3	16.8	50.1	15.7	6.6	5.6	4.3	3.6	56.2
	4	169	1987/07/14	1979/04/14	8.25	F	123.0	20.9	63.5	26.4	17.6	50.4	16.2	7.4	6.1	4.7	4.0	59.5
	6	169	1988/07/11	1979/04/14	9.24	F	128.0	22.8	65.6	27.4	18.3	51.2	16.5	9.0	4.4	6.3	6.0	62.4
1	2	171	1986/07/31	1980/07/10	6.06	F	115.6	17.8	61.3	24.8	16.9	47.5	16.0	6.4	5.1	4.0	3.9	54.3
3	4	173	1987/07/14	1980/07/03	7.03	F	108.7	17.8	60.7	23.0	16.0	49.4	16.6	8.6	5.6	6.2	4.6	48.0
	6	173	1988/07/11	1980/07/03	8.02	F	125.7	29.0	67.7	27.4	18.2	52.0	22.4	12.5	4.9	10.0	7.6	58.0
	8	173	1989/07/11	1980/07/03	9.02	F	131.3	32.4	70.2	27.2	20.0	52.5	21.3	12.6	8.6	8.8	6.0	61.1
4	2	174	1986/07/31	1979/12/11	6.64	F	115.0	18.5	60.5	24.5	16.2	47.1	15.1	5.5	3.8	4.0	3.0	54.5
	4	174	1987/07/14	1979/12/11	7.59	F	120.5	18.6	63.4	24.3	15.6	47.2	15.1	4.7	4.2	4.4	3.0	57.1
	6	174	1988/07/11	1979/12/11	8.58	F	124.8	20.6	63.9	24.8	17.4	47.2	15.2	5.4	3.0	4.2	3.6	60.9
	8	174	1989/07/11	1979/12/11	9.58	F	130.3	22.9	67.3	27.1	18.1	47.0	15.9	5.0	3.8	4.6	3.6	63.0
3	2	175	1986/07/31	1980/12/30	5.58	F	111.4	17.6	59.5	24.5	17.1	48.1	14.4	5.6	5.8	4.6	3.2	51.9
	4	175	1987/07/14	1980/12/30	6.54	F	117.1	18.7	62.8	26.3	17.6	48.5	15.1	5.1	4.5	5.0	3.8	54.3
	6	175	1988/07/11	1980/12/30	7.53	F	122.3	21.4	65.5	27.9	18.4	48.5	15.1	6.0	3.5	5.6	4.6	56.8
3	2	176	1986/07/31	1980/01/07	6.56	F	115.1	20.4	63.1	24.8	17.0	51.9	15.7	6.9	5.0	4.6	4.2	52.0
	4	176	1987/07/14	1980/01/07	7.52	F	120.0	22.7	65.5	25.6	17.4	52.2	18.1	7.8	6.8	7.0	5.8	54.5

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	6	176	1988/07/11	1980/01/07	8.51	F	124.4	23.6	67.5	26.5	18.3	52.9	17.1	8.2	5.4	7.5	8.3	56.9
4	2	177	1986/07/31	1978/06/04	8.16	F	117.2	20.8	62.5	22.1	17.0	49.9	17.8	9.2	8.0	4.8	5.5	54.7
	4	177	1987/07/14	1978/06/04	9.11	F	122.0	21.1	63.9	23.4	17.3	50.0	17.7	8.1	6.4	5.0	5.0	58.1
	6	177	1988/07/11	1978/06/04	10.10	F	125.8	23.9	66.4	25.6	18.3	50.7	18.5	9.2	5.4	7.0	8.7	59.4
	8	177	1989/07/11	1978/06/04	11.10	F	145.1	28.1	70.6	31.2	21.5	48.0	17.8	5.8	3.8	5.2	5.2	74.5
3	2	178	1986/07/31	1979/07/02	7.08	F	120.7	22.3	63.3	26.7	18.7	51.0	16.5	6.0	3.8	4.6	4.2	57.4
	4	178	1987/07/14	1979/07/02	8.03	F	126.1	23.8	65.1	27.8	18.8	52.1	18.3	6.1	5.2	5.4	4.3	61.0
	6	178	1988/07/11	1979/07/02	9.02	F	128.0	21.9	68.5	26.5	18.4	51.5	15.8	7.2	4.0	7.2	4.2	59.5
3	4	179	1987/07/14	1978/09/16	8.83	F	121.0	18.9	63.9	26.2	18.6	49.6	15.5	5.4	3.4	4.0	2.0	57.1
	6	179	1988/07/11	1978/09/16	9.82	F	125.3	21.0	66.7	27.9	19.4	49.7	16.0	6.8	3.6	5.6	5.2	58.6
	8	179	1989/07/11	1978/09/16	10.82	F	133.1	24.8	70.2	29.5	20.6	50.3	17.1	7.2	4.8	5.2	5.6	62.9
2	2	180	1986/07/31	1980/11/01	5.75	F	110.1	17.5	56.1	25.1	16.3	50.1	16.5	6.3	4.7	4.0	2.8	54.0
	4	180	1987/07/14	1980/11/01	6.70	F	116.4	18.9	59.4	24.4	16.4	50.3	15.8	5.8	4.7	4.3	3.4	57.0
1	2	181	1986/07/31	1978/06/10	8.14	F	134.2	30.6	70.1	30.6	19.8	52.7	19.3	7.3	6.9	6.3	4.4	64.1
2	4	184	1987/07/14	1980/01/07	7.52	F	129.0	27.0	68.2	28.9	18.8	52.0	18.1	10.2	4.6	9.6	7.2	60.8
	6	184	1988/07/12	1971/08/02	16.94	F	156.5	52.9	82.6	34.6	26.0	53.0	26.8	18.4	6.8	16.7	12.0	73.9
2	2	185	1986/07/31	1979/07/07	7.07	F	106.2	15.6	57.6	23.6	15.1	50.5	15.1	6.0	5.9	3.8	2.6	48.6
	8	185	1989/07/11	1979/07/07	10.01	F	119.8	20.0	61.3	25.5	17.0	51.2	16.1	5.8	3.8	4.1	3.4	58.5

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
4	2	186	1986/07/31	1977/12/10	8.64	F	127.4	28.6	67.1	26.6	19.3	47.8	19.7	11.5	7.0	5.6	6.5	60.3
	4	186	1987/07/14	1977/12/10	9.59	F	132.9	30.1	68.9	26.6	18.6	47.2	20.7	13.2	9.2	7.4	8.4	64.0
	6	186	1988/07/11	1977/12/10	10.58	F	137.8	33.1	70.5	27.3	20.9	48.4	20.7	8.0	15.2	9.6	19.4	67.3
	8	186	1989/07/11	1977/12/10	11.58	F	142.1	35.6	72.5	29.2	21.8	47.8	22.1	8.2	9.0	7.8	8.0	69.6
2	2	187	1986/07/31	1978/10/07	7.81	F	132.8	25.0	65.2	26.8	19.7	51.9	16.4	10.2	4.2	7.8	5.0	67.6
	4	187	1987/07/14	1978/10/07	8.77	F	137.9	27.1	68.8	27.4	17.6	52.0	17.2	10.2	4.8	5.4	5.1	69.1
2	2	188	1986/07/31	1979/09/28	6.84	F	106.1	15.6	54.1	21.2	16.5	48.1	15.2	7.8	5.1	5.2	4.6	52.0
	4	188	1987/07/14	1979/09/28	7.79	F	114.7	17.4	60.0	23.5	16.6	49.4	15.0	7.1	4.0	5.2	4.2	54.7
3	2	189	1986/07/31	1980/05/12	6.22	F	111.2	19.0	60.4	23.5	16.6	50.9	16.2	6.2	4.5	4.1	2.6	50.8
	4	189	1987/07/14	1980/05/12	7.17	F	115.9	20.5	63.2	26.1	17.5	42.5	17.0	7.2	2.2	5.4	3.4	52.7
	6	189	1988/07/11	1980/05/12	8.16	F	121.0	22.3	65.8	26.6	18.4	51.8	17.4	6.0	3.6	5.4	3.1	55.2
2	2	191	1986/07/31	1979/08/30	6.92	F	110.7	18.3	59.7	24.2	16.2	50.2	14.7	7.4	3.8	4.3	2.5	51.0
	4	191	1987/07/14	1979/08/30	7.87	F	116.8	20.0	62.1	26.0	16.6	51.0	16.0	7.8	4.9	4.8	3.6	54.7
2	2	192	1986/07/31	1979/06/04	7.16	F	114.7	17.6	57.6	24.6	16.7	50.6	15.1	6.1	4.1	4.0	2.0	57.1
	4	192	1987/07/14	1979/06/04	8.11	F	120.5	20.0	60.6	25.6	16.9	50.3	16.7	5.7	5.1	4.6	2.8	59.9
2	2	193	1986/07/31	1978/07/18	8.04	F	117.6	18.7	62.5	25.2	16.2	50.9	14.4	6.0	3.4	4.5	2.8	55.1
	4	193	1987/07/14	1978/07/18	8.99	F	122.2	20.4	64.1	26.6	16.6	52.0	15.8	6.3	4.1	5.0	3.6	58.1
2	2	194	1986/07/31	1978/06/12	8.13	F	110.4	18.6	60.6	23.9	16.0	51.6	15.7	9.0	4.6	6.4	4.7	49.8

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	194	1987/07/14	1978/06/12	9.09	F	115.4	19.5	62.7	24.2	16.3	51.7	15.5	7.6	4.2	4.6	4.2	52.7
3	4	195	1987/07/14	1977/09/03	9.86	F	131.6	22.9	66.6	28.1	18.9	48.3	17.0	6.8	4.0	4.8	4.4	65.0
	6	195	1988/07/11	1977/09/03	10.85	F	136.7	26.5	69.3	28.9	20.1	48.2	17.3	7.0	6.0	6.2	6.2	67.4
	8	195	1989/07/11	1977/09/03	11.85	F	142.1	28.9	70.6	30.5	20.4	48.8	17.8	6.2	4.0	5.8	3.6	71.5
3	2	197	1986/07/31	1978/10/24	7.77	F	122.6	22.5	66.0	26.6	19.1	50.5	17.3	5.6	3.5	3.8	3.5	56.8
	6	197	1988/07/11	1978/10/24	9.71	F	133.3	27.3	71.3	26.0	20.4	50.6	18.4	9.4	4.0	5.4	7.0	62.0
	8	197	1989/07/11	1978/10/24	10.71	F	138.2	29.7	73.4	28.7	20.6	50.3	18.8	8.2	5.8	5.4	5.8	64.8
4	2	198	1986/07/31	1978/08/29	7.92	F	131.4	27.8	68.6	29.2	19.8	50.1	17.1	8.5	3.1	6.5	3.8	62.8
	4	198	1987/07/14	1978/08/29	8.87	F	137.6	28.9	70.3	30.4	19.6	51.2	18.2	9.4	5.3	5.1	3.8	67.3
	6	198	1988/07/11	1978/08/29	9.87	F	143.4	33.7	73.5	31.1	21.6	51.1	18.6	13.5	4.2	8.8	13.0	69.9
	8	198	1989/07/11	1978/08/29	10.87	F	149.6	37.6	73.8	32.2	22.6	50.9	19.5	14.0	4.6	9.8	6.4	75.8
4	2	199	1986/07/31	1978/04/12	8.30	F	122.7	22.2	62.6	25.8	17.2	49.7	16.7	7.1	4.5	4.7	3.4	60.1
	4	199	1987/07/14	1978/04/12	9.26	F	128.1	24.5	66.0	27.4	17.5	49.9	17.2	7.8	6.0	5.2	5.2	62.1
	6	199	1988/07/11	1978/04/12	10.25	F	133.6	26.6	68.4	28.7	18.5	50.3	17.3	8.2	4.4	6.6	6.2	65.2
	8	199	1989/07/11	1978/04/12	11.25	F	139.4	29.3	71.2	28.2	19.4	50.4	19.4	8.4	6.4	6.6	4.0	68.2
4	2	200	1986/07/31	1978/11/11	7.72	F	121.1	22.5	64.8	25.9	18.1	51.1	17.3	9.6	5.7	6.1	4.1	56.3
	4	200	1987/07/14	1978/11/11	8.67	F	125.5	24.6	66.4	27.2	18.2	51.6	18.3	11.1	6.1	8.6	6.2	59.1
	6	200	1988/07/11	1978/11/11	9.66	F	131.6	27.6	69.5	28.0	19.0	51.6	19.6	12.8	6.6	10.4	8.4	62.1

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	8	200	1989/07/11	1978/11/11	10.66	F	137.6	29.9	72.4	29.2	19.9	52.3	19.8	12.2	9.0	12.4	7.0	65.2
4	2	201	1986/07/31	1977/10/11	8.80	F	118.1	20.6	64.7	25.6	18.3	51.0	16.8	10.0	4.6	5.3	4.1	53.4
	4	201	1987/07/14	1977/10/11	9.76	F	123.7	22.7	67.4	25.6	18.6	52.1	18.5	10.6	5.7	5.8	4.4	56.3
	6	201	1988/07/11	1977/10/11	10.75	F	129.0	25.0	70.0	27.8	19.9	52.1	18.5	10.0	5.2	5.4	6.4	59.0
	8	201	1989/07/11	1977/10/11	11.75	F	134.2	28.4	72.0	29.8	20.7	52.4	19.8	10.4	5.8	6.4	5.8	62.2
1	2	202	1986/07/31	1974/05/05	12.24	F	142.2	29.0	70.8	29.9	21.5	50.0	17.6	7.1	5.4	5.8	3.8	71.4
1	2	203	1986/07/31	1972/09/13	13.88	F	151.9	40.4	75.1	32.4	24.4	53.8	22.4	11.0	7.6	10.2	12.2	76.8
3	2	204	1986/07/31	1977/01/14	9.54	F	128.9	27.2	68.5	27.5	20.2	51.9	17.2	5.3	4.3	4.6	3.1	60.4
	4	204	1987/07/14	1977/01/14	10.50	F	135.1	29.1	70.5	28.4	20.2	52.4	18.4	5.5	5.6	5.0	4.9	64.6
	6	204	1988/07/11	1977/01/14	11.49	F	140.1	31.9	72.9	29.1	21.4	52.8	18.2	6.6	3.3	5.5	5.4	67.2
4	2	205	1986/07/31	1978/04/01	8.33	F	128.2	24.0	66.0	27.3	18.9	52.0	16.9	8.2	4.8	5.4	3.9	62.2
	4	205	1987/07/14	1978/04/01	9.29	F	133.4	25.1	67.9	27.2	18.8	52.4	17.6	6.8	5.6	4.9	4.4	65.5
	6	205	1988/07/11	1978/04/01	10.28	F	138.3	27.5	70.4	29.0	19.9	52.4	17.8	7.7	5.0	5.2	5.8	67.9
	8	205	1989/07/11	1978/04/01	11.28	F	142.3	31.1	73.0	30.5	20.7	52.2	19.1	6.8	5.4	6.2	5.2	69.3
3	2	207	1986/07/31	1977/06/22	9.11	F	134.4	28.2	68.8	28.1	19.1	51.8	17.4	7.6	5.2	6.1	4.8	65.6
	6	207	1988/07/11	1977/06/22	11.05	F	148.0	34.5	76.3	30.7	20.9	51.9	19.2	7.8	6.0	6.2	5.4	71.7
	8	207	1989/07/11	1977/06/22	12.05	F	156.0	41.2	79.5	32.6	22.2	52.8	20.8	8.2	6.2	7.6	6.2	76.5
3	2	208	1986/07/31	1975/03/17	11.37	F	128.0	25.4	66.6	27.7	19.6	48.5	17.1	9.9	5.8	7.8	4.8	61.4

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	208	1987/07/14	1975/03/17	12.33	F	133.1	26.7	68.3	27.4	19.4	49.4	17.4	9.8	7.0	6.4	5.4	64.8
	6	208	1988/07/11	1975/03/17	13.32	F	136.9	29.0	69.5	29.8	29.5	49.9	18.9	11.8	6.2	9.0	6.8	67.4
3	2	209	1986/07/31	1976/01/16	10.54	F	117.8	20.2	64.0	25.0	18.5	50.2	16.6	8.5	4.8	4.9	3.6	53.8
	4	209	1987/07/14	1976/01/16	11.49	F	121.9	21.7	65.6	26.0	19.1	49.8	17.5	8.5	6.6	6.0	3.8	56.3
	8	209	1989/07/11	1976/01/16	13.48	F	131.0	25.4	69.5	27.9	20.4	50.2	18.4	8.4	5.8	8.0	4.0	61.5
3	2	210	1986/07/31	1980/06/14	6.13	F	111.9	17.8	61.2	25.7	18.1	49.3	14.1	5.2	3.0	4.6	3.8	50.7
	4	210	1987/07/14	1980/06/14	7.08	F	117.7	19.3	63.5	26.7	18.3	50.2	15.2	5.2	5.8	4.6	3.8	54.2
	6	210	1988/07/11	1980/06/14	8.07	F	122.4	21.3	65.7	28.3	19.5	50.6	16.1	7.0	3.4	5.2	4.2	56.7
4	2	211	1986/07/31	1978/05/04	8.24	F	128.3	25.4	68.1	27.3	18.9	50.9	18.1	7.9	4.2	4.9	3.7	60.2
	4	211	1987/07/14	1978/05/04	9.20	F	133.8	26.7	69.3	27.0	17.4	50.9	19.3	8.1	4.9	5.2	3.6	64.5
	6	211	1988/07/11	1978/05/04	10.19	F	139.5	28.9	72.9	27.6	20.4	51.6	18.6	8.2	3.6	6.0	6.0	66.6
	8	211	1989/07/11	1978/05/04	11.19	F	145.1	32.1	73.6	29.9	21.3	51.2	20.1	8.0	3.6	5.8	5.2	71.5
4	2	212	1986/07/31	1974/01/02	12.58	F	126.8	26.1	68.4	26.4	19.3	50.9	18.4	7.6	5.2	6.8	5.2	58.4
	4	212	1987/07/14	1974/01/02	13.53	F	132.6	27.6	71.4	27.0	18.8	50.9	18.8	6.0	5.5	5.3	4.1	61.2
	6	212	1988/07/11	1974/01/02	14.52	F	137.4	32.0	74.7	28.3	21.3	52.4	19.7	9.9	6.2	8.6	9.7	62.7
	8	212	1989/07/11	1974/01/02	15.52	F	142.0	37.2	77.0	30.4	21.4	52.4	21.8	7.4	5.4	8.6	7.4	65.0
4	2	214	1986/07/31	1976/03/23	10.36	F	127.0	22.6	68.1	25.0	17.1	50.5	17.7	7.8	4.0	6.6	4.0	58.9
	4	214	1987/07/14	1976/03/23	11.31	F	132.1	24.7	68.9	28.0	17.7	50.4	18.0	8.4	6.1	7.1	5.2	63.2

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	6	214	1988/07/11	1976/03/23	12.30	F	137.4	26.7	72.0	29.6	19.7	50.7	17.8	8.4	5.0	8.4	8.0	65.4
	8	214	1989/07/11	1976/03/23	13.30	F	143.6	30.8	75.2	28.4	20.8	50.7	19.4	8.8	6.2	9.0	4.8	68.4
4	2	215	1986/07/31	1976/11/27	9.67	F	119.6	18.4	62.6	24.6	17.4	50.9	14.7	5.4	2.8	3.6	3.0	57.0
	4	215	1987/07/14	1976/11/27	10.63	F	124.0	19.6	64.0	25.2	18.2	49.4	15.6	6.0	4.1	4.6	3.2	60.0
	6	215	1988/07/11	1976/11/27	11.62	F	128.8	22.2	66.5	26.4	19.4	50.4	15.8	7.4	3.2	5.3	4.8	62.3
	8	215	1989/07/11	1976/11/27	12.62	F	134.3	24.6	67.5	28.2	20.4	51.4	16.5	6.4	4.2	6.0	3.6	66.8
4	2	216	1986/07/31	1978/04/22	8.27	F	129.1	22.7	65.7	25.9	17.2	51.0	16.0	6.0	4.2	4.2	3.8	63.4
	4	216	1987/07/14	1978/04/22	9.23	F	135.2	23.8	68.3	27.8	18.2	51.1	14.9	6.3	4.5	4.9	4.3	66.9
	6	216	1988/07/11	1978/04/22	10.22	F	140.3	26.9	71.5	28.7	19.4	51.5	17.5	7.8	4.4	5.8	6.8	68.8
	8	216	1989/07/11	1978/04/22	11.22	F	147.0	29.8	71.3	30.1	20.4	51.2	16.2	7.0	3.8	5.7	5.8	75.7
1	2	217	1986/07/31	1978/02/11	8.47	F	124.5	24.7	66.1	28.0	17.9	52.3	17.1	8.8	4.4	7.2	4.8	58.4
2	2	218	1986/07/31	1973/04/21	13.28	F	138.8	27.0	70.0	28.4	18.3	52.3	17.4	5.1	3.2	4.9	4.0	68.8
	4	218	1987/07/14	1973/04/21	14.23	F	144.0	28.6	72.1	27.8	19.8	52.3	18.0	6.0	3.6	4.4	2.6	71.9
4	2	219	1986/07/31	1976/06/22	10.11	F	134.0	25.6	68.3	27.8	20.2	51.7	17.1	5.5	3.8	4.4	3.5	65.7
	4	219	1987/07/14	1976/06/22	11.06	F	138.0	27.8	69.4	29.4	20.4	51.9	18.5	7.4	5.7	5.0	3.6	68.6
	6	219	1988/07/11	1976/06/22	12.05	F	141.5	29.7	70.9	29.2	21.5	51.9	20.1	10.2	5.2	6.0	4.4	70.6
	8	219	1989/07/11	1976/06/22	13.05	F	144.6	31.8	72.3	31.1	22.5	52.0	19.3	12.6	5.2	5.8	3.2	72.3
2	2	220	1986/07/31	1976/01/21	10.52	F	125.7	24.7	68.6	25.9	18.7	52.5	19.0	11.6	6.0	7.6	5.0	57.1

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	220	1987/07/14	1976/01/21	11.48	F	131.5	27.0	70.4	28.3	20.4	52.4	19.5	10.2	7.7	6.7	4.5	61.1
1	2	221	1986/07/31	1973/06/01	13.16	F	138.2	27.3	68.5	29.2	20.6	52.1	17.1	7.4	4.2	7.0	4.6	69.7
2	2	222	1986/07/31	1977/05/10	9.23	F	120.7	21.4	62.6	26.2	16.5	51.0	17.8	7.6	4.2	5.2	5.8	58.1
	6	222	1988/07/12	1977/05/10	11.17	F	128.4	26.1	66.3	28.4	19.1	51.0	19.6	9.0	4.8	6.4	9.0	62.1
2	4	223	1987/07/14	1977/01/09	10.51	F	135.6	23.1	69.4	26.6	18.4	52.6	15.5	5.8	3.2	4.8	6.4	66.2
	6	223	1988/07/12	1977/01/09	11.50	F	113.3	16.6	62.2	24.4	16.6	48.8	14.1	6.5	3.3	5.1	5.0	51.1
2	4	224	1987/07/14	1977/03/10	10.35	F	144.9	33.9	71.5	29.4	21.6	19.9	21.4	8.4	3.2	7.8	7.2	73.4
	6	224	1988/07/11	1977/03/10	11.34	F	151.5	39.7	75.2	32.4	22.4	51.4	23.0	11.2	5.2	9.6	9.2	76.3
2	2	225	1986/07/31	1972/05/16	14.21	F	161.9	54.6	81.5	30.7	24.1	56.9	25.3	15.0	7.4	14.8	8.2	80.4
	4	225	1987/07/14	1972/05/16	15.16	F	164.2	60.6	83.3	34.2	25.3	56.7	27.4	19.7	12.5	16.2	12.4	80.9
3	2	226	1986/07/31	1975/08/14	10.96	F	130.8	25.4	68.7	28.2	19.2	52.3	17.1	5.7	3.1	6.3	2.8	62.1
	4	226	1987/07/14	1975/08/14	11.92	F	136.2	28.0	70.9	29.0	19.2	53.0	18.3	5.4	5.0	6.1	3.8	65.3
	6	226	1988/07/11	1975/08/14	12.91	F	141.3	30.7	74.3	30.3	21.4	53.1	19.2	7.1	4.4	7.3	4.4	67.0
3	2	227	1986/07/31	1977/10/25	8.76	F	125.3	21.8	67.4	26.8	18.6	50.7	15.6	5.0	3.4	4.8	3.2	57.9
	4	227	1987/07/14	1977/10/25	9.72	F	130.1	22.5	69.1	27.4	19.2	50.9	15.6	5.1	4.6	4.9	3.0	61.0
	6	227	1988/07/11	1977/10/25	10.71	F	134.4	24.6	71.9	28.4	20.1	52.5	16.2	6.6	3.8	6.2	6.0	62.5
4	2	228	1986/07/31	1975/03/24	11.35	F	136.2	27.8	69.9	29.4	17.9	52.1	18.5	8.7	3.4	5.7	2.5	66.3
	4	228	1987/07/14	1975/03/24	12.31	F	140.8	29.4	71.4	29.8	19.4	51.2	19.1	9.9	6.9	4.8	3.7	69.4

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	6	228	1988/07/11	1975/03/24	13.30	F	147.0	33.6	76.0	31.3	21.1	52.2	20.5	13.5	4.8	7.6	5.6	71.0
	8	228	1989/07/11	1975/03/24	14.30	F	155.7	41.6	79.8	34.5	23.0	52.0	21.8	13.8	5.2	10.2	5.8	75.9
3	2	229	1986/07/31	1974/10/30	11.75	F	148.0	32.8	75.6	29.7	20.5	55.0	19.0	8.0	3.8	7.2	6.4	72.4
	4	229	1987/07/14	1974/10/30	12.71	F	153.9	36.1	78.6	32.0	22.4	55.0	19.5	7.8	6.6	7.0	7.3	75.3
	6	229	1988/07/11	1974/10/30	13.70	F	158.1	40.1	81.6	32.9	23.6	55.1	20.6	9.8	4.2	9.3	13.7	76.5
3	2	230	1986/07/31	1976/05/14	10.21	F	125.3	21.6	65.5	27.6	18.1	51.5	15.6	5.0	3.4	4.2	3.2	59.8
	4	230	1987/07/14	1976/05/14	11.17	F	131.3	23.5	66.8	29.6	19.6	50.8	15.7	5.2	4.9	4.1	3.0	64.5
	8	230	1989/07/11	1976/05/14	13.16	F	142.0	28.5	71.8	31.6	20.5	51.7	16.5	6.6	5.8	5.8	3.8	70.2
2	2	231	1986/07/31	1978/09/05	7.90	F	134.1	28.6	71.6	29.6	19.5	52.7	18.5	7.2	4.0	6.4	6.0	62.5
	4	231	1987/07/14	1978/09/05	8.86	F	138.9	30.2	72.7	30.1	20.2	52.2	18.7	7.6	5.4	6.3	4.8	66.2
4	2	232	1986/07/31	1977/07/14	9.05	F	131.3	22.7	67.6	24.9	16.5	52.3	17.2	4.6	2.8	4.4	2.8	63.7
	4	232	1987/07/14	1978/07/14	10.00	F	136.0	24.8	68.8	26.8	19.0	51.6	18.1	4.2	3.6	4.4	3.4	67.2
	6	232	1988/07/11	1977/07/14	10.99	F	141.9	27.5	72.0	28.7	19.9	51.6	17.9	5.4	3.0	6.2	4.6	69.9
	8	232	1989/07/11	1977/07/14	11.99	F	147.2	30.1	72.2	30.1	21.0	52.2	18.8	5.6	4.0	5.4	3.4	75.0
4	2	233	1986/07/31	1978/11/25	7.68	F	130.7	28.6	67.1	28.2	19.1	51.8	19.2	6.6	4.8	5.4	4.4	63.6
	4	233	1987/07/14	1978/11/25	8.63	F	137.2	31.4	70.2	29.3	19.8	51.6	19.3	7.1	7.2	6.1	4.4	67.0
	6	233	1988/07/11	1978/11/25	9.62	F	143.6	36.3	72.9	30.7	21.4	52.2	21.5	10.1	5.4	8.2	11.5	70.7
	8	233	1989/07/11	1978/11/25	10.62	F	149.4	41.7	75.6	31.7	22.4	52.3	22.8	11.2	8.2	8.2	7.8	73.8

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
3	**2**	**234**	**1986/07/31**	**1973/10/14**	**12.79**	**F**	**147.2**	**31.7**	**71.2**	**30.7**	**20.6**	**52.5**	**18.3**	**6.8**	**4.0**	**6.6**	**4.8**	**76.0**
	4	**234**	**1987/07/14**	**1973/10/14**	**13.75**	**F**	**151.9**	**35.6**	**75.0**	**32.2**	**21.7**	**51.9**	**19.8**	**7.8**	**6.5**	**6.6**	**4.6**	**76.9**
	6	**234**	**1988/07/11**	**1973/10/14**	**14.74**	**F**	**154.8**	**40.1**	**77.0**	**32.4**	**23.1**	**51.7**	**21.4**	**7.4**	**5.8**	**9.4**	**10.0**	**77.8**
4	**2**	**235**	**1986/07/31**	**1977/06/06**	**9.15**	**F**	**130.4**	**25.4**	**66.8**	**29.3**	**18.0**	**50.0**	**17.7**	**5.5**	**3.0**	**5.5**	**3.7**	**63.6**
	4	**235**	**1987/07/14**	**1977/06/06**	**10.11**	**F**	**135.1**	**27.0**	**68.7**	**29.6**	**18.4**	**50.2**	**18.1**	**6.8**	**5.5**	**5.6**	**4.2**	**66.4**
	6	**235**	**1988/07/11**	**1977/06/06**	**11.10**	**F**	**141.0**	**31.1**	**71.1**	**31.6**	**19.8**	**50.6**	**19.4**	**8.6**	**4.0**	**6.8**	**6.0**	**69.9**
	8	**235**	**1989/07/11**	**1977/06/06**	**12.10**	**F**	**147.6**	**35.1**	**72.3**	**33.0**	**20.7**	**50.9**	**19.4**	**9.2**	**5.4**	**6.6**	**4.3**	**75.3**
1	**2**	**236**	**1986/07/31**	**1976/03/11**	**10.39**	**F**	**133.8**	**26.8**	**68.7**	**29.5**	**17.6**	**51.3**	**18.2**	**6.8**	**4.2**	**5.9**	**4.3**	**65.1**
3	**2**	**238**	**1986/07/31**	**1975/08/10**	**10.97**	**F**	**124.2**	**19.2**	**66.1**	**25.0**	**16.6**	**54.3**	**14.2**	**4.2**	**3.8**	**3.6**	**2.2**	**58.1**
	4	**238**	**1987/07/14**	**1975/08/10**	**11.93**	**F**	**127.5**	**20.7**	**67.4**	**25.6**	**16.8**	**53.2**	**15.2**	**4.8**	**4.4**	**4.0**	**2.8**	**60.1**
	6	**238**	**1988/07/11**	**1975/08/10**	**12.92**	**F**	**131.7**	**22.9**	**70.6**	**25.4**	**17.9**	**53.0**	**16.4**	**7.8**	**3.3**	**4.2**	**4.4**	**61.1**
3	**2**	**239**	**1986/07/31**	**1977/02/21**	**9.44**	**F**	**128.0**	**22.9**	**65.0**	**27.8**	**19.1**	**49.4**	**16.6**	**4.6**	**2.6**	**4.5**	**3.0**	**63.0**
	4	**239**	**1987/07/14**	**1977/02/21**	**10.39**	**F**	**132.4**	**23.9**	**66.6**	**28.3**	**18.9**	**49.6**	**16.6**	**4.4**	**4.0**	**4.4**	**3.7**	**65.8**
	6	**239**	**1988/07/11**	**1977/02/21**	**11.38**	**F**	**138.2**	**27.0**	**69.2**	**29.2**	**20.5**	**50.0**	**17.0**	**6.6**	**2.9**	**5.5**	**4.0**	**69.0**
4	**2**	**240**	**1986/07/31**	**1977/01/03**	**9.57**	**F**	**118.0**	**18.5**	**63.4**	**24.4**	**17.9**	**48.5**	**15.5**	**4.8**	**4.2**	**4.1**	**2.6**	**54.6**
	4	**240**	**1987/07/14**	**1977/01/03**	**10.53**	**F**	**122.2**	**20.9**	**65.1**	**25.4**	**18.0**	**49.7**	**16.2**	**6.2**	**5.7**	**6.0**	**2.8**	**57.1**
	6	**240**	**1988/07/11**	**1977/01/03**	**11.52**	**F**	**126.6**	**22.7**	**66.6**	**26.4**	**19.0**	**50.5**	**16.4**	**7.2**	**4.0**	**5.6**	**4.4**	**60.0**
	8	**240**	**1989/07/11**	**1977/01/03**	**12.52**	**F**	**131.0**	**24.2**	**68.0**	**27.6**	**19.4**	**50.2**	**17.8**	**7.2**	**5.4**	**5.6**	**4.0**	**63.0**

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
1	**2**	**241**	**1986/07/31**	**1977/03/04**	**9.41**	**F**	**137.8**	**32.8**	**73.4**	**30.2**	**20.6**	**54.6**	**20.7**	**12.9**	**8.2**	**10.0**	**8.1**	**64.4**
4	**2**	**242**	**1986/07/31**	**1977/05/06**	**9.24**	**F**	**127.3**	**23.5**	**66.5**	**27.6**	**18.8**	**49.4**	**16.5**	**5.8**	**5.7**	**4.9**	**4.2**	**60.8**
	4	**242**	**1987/07/14**	**1977/05/06**	**10.19**	**F**	**132.0**	**24.3**	**68.1**	**27.9**	**19.4**	**50.3**	**16.2**	**6.2**	**4.6**	**4.5**	**4.3**	**63.9**
	6	**242**	**1988/07/11**	**1977/05/06**	**11.18**	**F**	**136.1**	**25.7**	**69.9**	**29.3**	**20.6**	**51.2**	**17.0**	**7.0**	**3.2**	**6.5**	**4.5**	**66.2**
	8	**242**	**1989/07/11**	**1977/05/06**	**12.18**	**F**	**145.3**	**32.0**	**74.5**	**30.8**	**22.7**	**50.9**	**19.4**	**8.2**	**4.2**	**7.6**	**5.4**	**70.8**
2	**2**	**243**	**1986/07/31**	**1977/01/01**	**9.58**	**F**	**127.0**	**25.2**	**67.4**	**27.6**	**18.1**	**51.2**	**18.0**	**8.7**	**8.4**	**9.2**	**6.3**	**59.6**
	4	**243**	**1987/07/14**	**1977/01/01**	**10.53**	**F**	**134.0**	**28.3**	**69.7**	**29.0**	**19.0**	**51.9**	**18.1**	**8.8**	**7.6**	**9.9**	**6.1**	**64.3**
1	**2**	**244**	**1986/07/31**	**1975/02/04**	**11.49**	**F**	**138.5**	**27.7**	**70.6**	**26.6**	**19.4**	**51.6**	**18.0**	**7.0**	**7.1**	**5.2**	**5.0**	**67.9**
4	**2**	**245**	**1986/07/31**	**1975/03/14**	**11.38**	**F**	**132.3**	**24.0**	**69.6**	**28.0**	**19.6**	**50.7**	**17.0**	**5.8**	**4.5**	**4.8**	**3.6**	**62.7**
	4	**245**	**1987/07/14**	**1975/03/14**	**12.34**	**F**	**136.9**	**25.9**	**71.8**	**28.6**	**20.2**	**52.5**	**17.2**	**7.0**	**4.2**	**4.8**	**4.2**	**65.1**
	6	**245**	**1988/07/11**	**1975/03/14**	**13.33**	**F**	**142.7**	**28.5**	**74.7**	**29.7**	**21.6**	**52.2**	**17.2**	**8.4**	**3.3**	**6.4**	**6.0**	**68.0**
	8	**245**	**1989/07/11**	**1975/03/14**	**14.33**	**F**	**147.9**	**32.4**	**75.6**	**31.0**	**22.9**	**52.7**	**18.4**	**9.8**	**4.0**	**7.6**	**5.2**	**72.3**
2	**2**	**246**	**1986/07/31**	**1975/09/06**	**10.90**	**F**	**132.0**	**23.6**	**67.4**	**27.4**	**18.4**	**50.6**	**17.1**	**5.9**	**2.6**	**4.4**	**2.5**	**64.6**
	4	**246**	**1987/07/14**	**1975/09/06**	**11.85**	**F**	**137.0**	**26.1**	**68.9**	**27.6**	**18.8**	**50.9**	**17.4**	**6.6**	**4.4**	**5.6**	**3.2**	**68.1**
4	**2**	**247**	**1986/07/31**	**1975/12/19**	**10.61**	**F**	**141.0**	**34.7**	**75.1**	**29.0**	**19.2**	**51.8**	**21.2**	**10.2**	**8.9**	**7.5**	**7.2**	**65.9**
	4	**247**	**1987/07/14**	**1975/12/19**	**11.57**	**F**	**149.4**	**41.6**	**78.7**	**30.1**	**20.8**	**53.3**	**22.8**	**12.1**	**10.6**	**7.5**	**8.5**	**70.7**
	6	**247**	**1988/07/11**	**1975/12/19**	**12.56**	**F**	**154.6**	**43.3**	**81.5**	**31.8**	**21.6**	**53.0**	**22.7**	**10.4**	**4.2**	**7.0**	**12.4**	**73.1**
	8	**247**	**1989/07/11**	**1975/12/19**	**13.56**	**F**	**156.5**	**48.3**	**84.0**	**31.7**	**22.6**	**53.6**	**24.0**	**10.2**	**9.2**	**9.6**	**7.8**	**72.5**

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
3	2	248	1986/07/31	1976/10/08	9.81	F	144.1	31.9	72.1	30.6	20.9	53.3	19.2	6.8	5.5	6.6	3.6	72.0
	4	248	1987/07/14	1976/10/08	10.77	F	150.7	35.0	74.6	32.0	21.2	53.2	20.4	6.8	5.9	6.1	3.6	76.1
	6	248	1988/07/11	1976/10/08	11.76	F	155.1	41.8	76.9	34.7	22.9	52.9	22.0	7.2	3.8	7.2	8.2	78.2
4	2	250	1986/07/31	1973/06/09	13.14	F	146.5	32.8	74.7	30.2	20.7	52.2	18.5	5.4	5.1	4.4	3.1	71.8
	4	250	1987/07/14	1973/06/09	14.10	F	153.3	37.4	77.8	31.9	22.2	52.8	19.7	6.0	3.2	5.2	4.4	75.5
	6	250	1988/07/11	1973/06/09	15.09	F	159.0	43.2	80.7	33.3	24.0	53.8	20.9	8.4	4.4	6.8	6.0	78.3
	8	250	1989/07/11	1973/06/09	16.09	F	161.6	46.9	82.4	33.9	25.0	53.6	22.1	7.3	5.0	7.2	6.6	79.2
1	4	251	1987/07/14	1974/09/24	12.80	F	166.6	49.7	65.3	35.2	26.0	52.8	21.8	9.2	4.8	7.8	8.0	101.3
4	2	252	1986/07/31	1977/05/10	9.23	F	135.4	27.2	70.5	28.8	19.6	55.4	17.4	5.4	5.9	4.7	2.9	64.9
	4	252	1987/07/14	1977/05/10	10.18	F	140.4	30.5	72.3	29.6	20.2	55.2	18.0	7.5	5.4	5.2	3.5	68.1
	6	252	1988/07/11	1977/05/10	11.17	F	147.7	34.8	75.3	30.7	21.4	56.3	18.8	10.0	4.4	7.4	6.0	72.4
	8	252	1989/07/11	1977/05/10	12.17	F	154.9	40.8	78.3	31.4	22.4	56.5	20.7	9.6	6.4	8.0	4.2	76.6
2	2	254	1986/07/31	1976/12/25	9.60	F	134.3	28.1	68.1	28.4	19.9	52.5	18.2	5.2	5.8	5.4	4.2	66.2
	4	254	1987/07/14	1976/12/25	10.55	F	139.9	31.4	69.6	29.7	20.2	52.5	19.1	6.2	6.0	5.8	5.4	70.3
4	2	255	1986/07/31	1975/04/16	11.29	F	133.9	22.9	67.9	28.0	18.6	50.1	16.2	6.0	2.8	4.0	3.2	66.0
	4	255	1987/07/14	1975/04/16	12.24	F	138.5	26.0	70.5	29.0	18.8	50.6	17.6	7.4	6.7	5.8	3.6	68.0
	6	255	1988/07/11	1975/04/16	13.24	F	143.5	29.5	72.9	30.0	19.7	51.3	18.0	11.4	4.4	6.2	6.8	70.6
	8	255	1989/07/11	1975/04/16	14.24	F	150.9	34.4	76.1	22.0	21.3	52.8	18.9	11.0	5.2	6.4	5.8	74.8

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
2	2	256	1986/07/31	1975/08/14	10.96	F	133.4	NIL	70.9	28.6	19.9	52.5	17.5	6.8	3.2	4.7	3.3	62.5
	8	256	1989/07/11	1975/08/14	13.91	F	155.1	35.2	78.8	33.0	22.4	53.4	19.7	10.4	7.2	5.6	5.6	76.3
4	2	258	1986/07/31	1975/07/21	11.03	F	136.9	26.8	69.9	28.8	19.9	53.2	16.6	5.2	4.4	5.2	3.4	67.0
	4	258	1987/07/14	1975/07/21	11.98	F	142.5	29.3	70.1	30.4	20.3	53.1	17.4	5.8	5.0	5.5	3.8	72.4
	6	258	1988/07/11	1975/07/21	12.97	F	149.4	35.3	74.9	31.6	22.2	54.1	18.4	8.0	4.7	8.0	6.6	74.5
	8	258	1989/07/11	1975/07/21	13.97	F	155.8	40.9	79.3	32.8	23.8	54.7	20.3	8.4	7.4	8.4	4.8	76.5
4	2	259	1986/07/31	1975/09/02	10.91	F	138.7	28.4	72.3	28.4	20.4	51.3	18.5	6.3	4.2	5.9	4.2	66.4
	4	259	1987/07/14	1975/09/02	11.86	F	142.0	29.9	72.8	28.8	20.6	52.2	19.5	7.2	6.4	5.4	5.2	69.2
	6	259	1988/07/11	1975/09/02	12.86	F	146.3	31.2	75.4	29.0	21.4	52.4	19.2	8.0	4.6	6.2	6.0	70.9
	8	259	1989/07/11	1975/09/02	13.86	F	152.0	36.5	78.3	31.7	22.9	53.0	21.0	8.6	7.2	7.4	5.6	73.7
2	2	262	1986/07/31	1973/01/21	13.52	F	146.8	31.1	75.6	29.8	22.1	52.0	17.6	8.9	2.9	5.3	3.8	71.2
	4	262	1987/07/14	1973/01/21	14.48	F	151.3	35.4	78.9	31.0	22.2	52.3	19.3	5.2	5.5	6.1	4.8	72.4
3	2	263	1986/07/31	1973/06/07	13.15	F	142.9	29.6	72.5	28.8	21.0	50.9	20.0	6.8	4.4	6.0	4.4	70.4
	4	263	1987/07/14	1973/06/07	14.10	F	147.6	32.0	74.7	30.2	21.8	51.4	19.5	7.4	5.5	6.6	4.6	72.9
	6	263	1988/07/11	1973/06/07	15.09	F	153.4	36.2	75.5	31.2	23.0	51.3	20.5	6.0	3.2	5.4	5.4	77.9
3	2	264	1986/07/31	1973/07/18	13.04	F	145.7	30.7	72.8	31.0	22.2	51.5	18.2	8.2	4.2	6.3	3.6	72.9
	4	264	1987/07/14	1973/07/18	13.99	F	152.6	34.1	76.1	32.3	23.0	52.2	18.9	7.8	6.0	7.8	5.0	76.5
	6	264	1988/07/11	1973/07/18	14.98	F	158.0	40.3	79.4	32.2	23.8	52.2	19.6	11.6	5.4	10.6	10.3	78.6

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
3	2	266	1986/07/31	1972/03/17	14.37	F	146.9	41.8	78.7	32.1	24.7	52.3	22.2	11.3	4.5	6.7	5.6	68.2
	4	266	1987/07/14	1972/03/17	15.33	F	148.8	47.7	80.3	32.4	24.4	53.8	24.3	18.8	10.3	13.4	11.6	68.5
	6	266	1988/07/12	1972/03/17	16.32	F	149.8	53.9	82.0	33.4	25.6	54.0	27.5	26.2	8.4	16.8	10.6	67.8
3	2	267	1986/07/31	1972/03/14	14.38	F	160.0	45.1	81.7	33.5	24.0	53.8	21.8	6.4	3.4	6.8	5.0	78.3
	4	267	1987/07/14	1972/03/14	15.34	F	162.7	50.5	83.5	34.3	25.0	53.4	23.6	8.8	8.3	8.2	6.3	79.2
	8	267	1989/07/11	1972/03/14	17.33	F	164.4	56.9	84.4	35.7	26.0	53.7	25.8	17.0	7.2	12.4	7.2	80.0
1	2	268	1986/07/31	1971/05/26	15.18	F	153.6	41.1	78.2	32.7	24.4	53.1	22.6	16.8	8.4	14.6	7.2	75.4
1	2	269	1986/07/31	1970/12/20	15.61	F	141.3	46.0	75.0	31.5	23.1	51.6	25.0	17.0	7.8	18.1	12.9	66.3
1	2	271	1986/07/31	1973/08/25	12.93	F	149.8	36.2	75.8	30.0	21.4	52.5	19.7	8.4	5.2	8.8	4.8	74.0
3	2	272	1986/07/31	1974/02/22	12.44	F	151.1	37.1	77.9	31.2	21.4	56.5	18.5	7.3	6.3	7.6	5.8	73.2
	4	272	1987/07/14	1974/02/22	13.39	F	156.9	40.9	81.4	32.3	21.8	56.6	20.8	7.4	6.1	8.2	7.3	75.5
	6	272	1988/07/11	1974/02/22	14.38	F	161.5	46.2	85.1	32.8	21.2	56.9	21.3	7.8	3.9	8.0	7.2	76.4
4	2	273	1986/07/31	1974/10/24	11.77	F	143.2	32.8	72.7	29.6	20.4	51.5	19.1	6.6	4.2	6.0	4.2	70.5
	4	273	1987/07/14	1974/10/24	12.72	F	146.5	33.8	74.2	29.6	20.9	52.1	19.1	7.6	4.9	4.2	4.4	72.3
	6	273	1988/07/11	1974/10/24	13.71	F	151.6	36.6	76.7	31.3	21.7	53.0	19.9	9.0	3.4	5.6	6.8	74.9
	8	273	1989/07/11	1974/10/24	14.71	F	157.3	43.4	80.2	32.8	23.3	53.4	21.0	13.2	5.8	6.4	4.6	77.1
2	2	274	1986/07/31	1973/09/03	12.91	F	142.6	30.6	71.8	28.9	19.6	51.3	19.8	10.2	7.8	10.4	6.4	70.8
	4	274	1987/07/14	1973/09/03	13.86	F	147.0	32.5	73.7	28.8	19.9	51.4	20.6	12.4	9.3	9.7	7.8	73.3

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
2	**2**	**275**	**1986/07/31**	**1972/06/13**	**14.13**	**F**	**162.4**	**47.8**	**81.8**	**35.5**	**25.8**	**54.2**	**21.0**	**6.2**	**4.2**	**7.8**	**5.6**	**80.6**
	4	**275**	**1987/07/14**	**1972/06/13**	**15.09**	**F**	**166.2**	**53.4**	**85.0**	**36.2**	**26.2**	**54.2**	**23.3**	**8.2**	**6.7**	**9.6**	**6.4**	**81.2**
4	**2**	**276**	**1986/07/31**	**1975/08/08**	**10.98**	**F**	**137.7**	**31.3**	**70.3**	**29.6**	**19.9**	**52.6**	**20.3**	**9.6**	**4.9**	**4.9**	**3.4**	**67.4**
	4	**276**	**1987/07/14**	**1975/08/08**	**11.93**	**F**	**143.0**	**33.2**	**72.3**	**30.8**	**20.0**	**52.9**	**21.1**	**10.4**	**5.4**	**5.2**	**3.8**	**70.7**
	6	**276**	**1988/07/11**	**1975/08/08**	**12.92**	**F**	**149.2**	**38.4**	**75.4**	**32.4**	**21.4**	**52.3**	**22.5**	**11.2**	**4.2**	**6.0**	**6.8**	**73.8**
	8	**276**	**1989/07/11**	**1975/08/08**	**13.92**	**F**	**156.4**	**46.7**	**84.4**	**34.3**	**22.9**	**53.3**	**25.4**	**11.4**	**7.8**	**9.2**	**7.0**	**72.0**
3	**2**	**277**	**1986/07/31**	**1972/06/23**	**14.10**	**F**	**156.5**	**41.2**	**78.5**	**32.9**	**24.3**	**53.2**	**21.0**	**9.0**	**6.2**	**10.0**	**5.5**	**78.0**
	4	**277**	**1987/07/14**	**1972/06/23**	**15.06**	**F**	**158.0**	**43.7**	**80.9**	**33.9**	**24.8**	**53.0**	**21.4**	**12.3**	**10.2**	**10.4**	**8.3**	**77.1**
	6	**277**	**1988/07/11**	**1972/06/23**	**16.05**	**F**	**159.7**	**46.9**	**82.8**	**34.2**	**25.7**	**53.5**	**22.0**	**7.0**	**5.4**	**13.0**	**15.5**	**76.9**
4	**2**	**278**	**1986/07/31**	**1973/02/19**	**13.44**	**F**	**156.1**	**45.0**	**76.0**	**34.1**	**21.8**	**53.6**	**20.2**	**7.1**	**4.6**	**8.4**	**5.5**	**80.1**
	4	**278**	**1987/07/14**	**1973/02/19**	**14.40**	**F**	**160.2**	**48.6**	**79.0**	**34.6**	**22.1**	**53.4**	**21.8**	**7.5**	**7.4**	**8.2**	**7.8**	**81.2**
	6	**278**	**1988/07/11**	**1973/02/19**	**15.39**	**F**	**162.4**	**52.7**	**81.2**	**35.1**	**23.0**	**54.4**	**22.8**	**10.0**	**3.8**	**10.0**	**9.6**	**81.2**
	8	**278**	**1989/07/11**	**1973/02/19**	**16.39**	**F**	**163.2**	**54.1**	**82.2**	**36.2**	**23.5**	**54.5**	**23.1**	**13.6**	**5.6**	**13.0**	**8.0**	**81.0**
2	**2**	**279**	**1986/07/31**	**1972/02/07**	**14.48**	**F**	**152.5**	**38.6**	**78.5**	**30.2**	**22.0**	**54.0**	**18.9**	**7.4**	**4.7**	**5.0**	**4.6**	**74.0**
	4	**279**	**1987/07/14**	**1972/02/07**	**15.43**	**F**	**157.0**	**44.2**	**81.5**	**32.8**	**21.8**	**53.6**	**21.2**	**8.6**	**8.9**	**7.4**	**7.2**	**75.5**
2	**2**	**280**	**1986/07/31**	**1969/09/12**	**16.88**	**F**	**160.6**	**48.9**	**87.8**	**33.9**	**24.1**	**55.7**	**23.0**	**9.4**	**5.6**	**9.4**	**5.8**	**72.8**
	4	**280**	**1987/07/14**	**1969/09/12**	**17.84**	**F**	**161.4**	**50.1**	**88.3**	**34.4**	**23.7**	**55.6**	**23.2**	**8.5**	**6.7**	**6.9**	**5.5**	**73.1**
2	**2**	**281**	**1986/07/31**	**1972/12/12**	**13.63**	**F**	**156.2**	**40.2**	**79.3**	**31.4**	**23.7**	**52.5**	**19.0**	**6.4**	**4.0**	**9.6**	**5.0**	**76.9**

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	281	1987/07/14	1972/12/12	14.59	F	160.0	45.3	82.1	32.0	24.9	53.4	21.7	7.6	6.8	9.4	7.8	77.9
1	2	282	1986/07/31	1971/09/02	14.91	F	161.6	52.4	80.2	37.2	25.4	54.5	24.4	13.4	6.8	12.2	7.4	81.4
2	2	283	1986/07/31	1971/01/12	15.55	F	154.7	43.4	81.2	31.0	25.5	52.7	21.5	8.4	5.6	7.8	6.8	73.5
	4	283	1987/07/14	1971/01/12	16.50	F	155.7	45.7	83.7	32.6	24.4	53.8	22.5	9.4	6.8	8.9	10.4	72.0
4	2	284	1986/07/31	1973/10/25	12.76	F	131.3	21.7	66.8	26.6	11.8	50.8	15.3	5.0	4.1	3.9	2.7	64.5
	4	284	1987/07/14	1973/10/25	13.72	F	137.6	23.6	69.3	26.2	19.4	51.2	16.3	4.6	4.2	4.3	3.2	68.3
	6	284	1988/07/11	1973/10/25	14.71	F	144.5	27.8	73.2	30.4	21.2	51.3	17.0	6.0	3.2	5.0	5.4	71.3
	8	284	1989/07/11	1973/10/25	15.71	F	150.2	30.7	75.9	31.7	22.2	52.1	19.4	6.8	5.6	5.4	4.4	74.3
4	2	285	1986/07/31	1974/10/16	11.79	F	131.6	25.6	68.3	28.6	20.8	53.7	17.4	6.2	5.8	4.6	3.8	63.3
	4	285	1987/07/14	1974/10/16	12.74	F	150.3	34.1	76.7	30.2	21.9	51.1	18.2	9.0	6.4	6.7	5.3	73.6
	6	285	1988/07/11	1974/10/16	13.73	F	146.1	34.0	76.0	31.5	23.5	54.3	18.8	7.2	4.2	5.2	7.6	70.1
	8	285	1989/07/11	1974/10/16	14.73	F	152.6	37.3	80.1	31.6	24.9	53.9	19.5	11.6	6.2	6.5	4.8	72.5
2	2	286	1986/07/31	1975/03/12	11.39	F	146.1	29.9	72.7	31.1	21.1	52.2	17.8	7.8	4.8	10.2	6.4	73.4
	4	286	1987/07/14	1975/03/12	12.34	F	153.2	33.1	74.9	32.4	21.8	52.1	18.1	9.3	5.6	8.2	5.2	78.3
4	2	288	1986/07/31	1973/11/22	12.69	F	148.6	NIL	74.3	31.0	28.8	52.5	17.0	NIL	NIL	NIL	NIL	74.3
	4	288	1987/07/14	1973/11/22	13.64	F	154.1	32.0	76.1	31.0	21.8	52.5	17.9	6.8	5.0	6.6	6.0	78.0
	6	288	1988/07/11	1973/11/22	14.63	F	159.8	36.9	79.6	32.2	22.7	53.5	18.9	10.8	6.6	8.8	7.2	80.2
	8	288	1989/07/11	1973/11/22	15.63	F	163.9	42.8	82.5	33.5	23.5	53.7	20.3	11.6	7.2	9.4	6.8	81.4

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
4	2	290	1986/07/31	1973/06/11	13.14	F	151.7	41.5	78.7	32.5	23.3	54.2	21.2	8.2	5.0	9.6	6.8	73.0
	4	290	1987/07/14	1973/06/11	14.09	F	156.7	49.3	80.9	35.2	24.7	53.9	21.8	8.7	7.3	8.4	8.2	75.8
	6	290	1988/07/11	1973/06/11	15.08	F	160.0	56.0	82.6	35.4	25.8	55.2	23.3	11.0	5.2	13.2	14.2	77.4
	8	290	1989/07/11	1973/06/11	16.08	F	161.5	64.0	85.6	37.5	27.4	57.4	25.1	14.0	8.4	14.6	10.4	75.9
1	2	291	1986/07/31	1972/02/19	14.44	F	152.8	40.6	77.4	32.4	24.1	53.9	21.1	8.6	5.0	10.2	7.1	75.4
1	2	293	1986/07/31	1972/07/14	14.05	F	153.1	40.4	78.7	32.7	24.3	51.9	22.7	10.8	5.8	13.4	5.8	74.4
3	2	295	1986/07/31	1971/04/10	15.31	F	159.4	45.1	81.4	36.8	26.2	55.8	21.2	6.2	4.1	8.4	4.2	78.0
	4	295	1987/07/14	1971/04/10	16.26	F	161.1	46.4	83.3	37.4	26.7	55.4	21.9	6.2	5.6	7.6	4.6	77.8
	6	295	1988/07/11	1971/04/10	17.25	F	161.9	48.8	85.7	36.6	26.8	55.2	22.0	7.4	3.2	7.7	5.6	76.2
1	2	296	1986/07/31	1971/12/05	14.65	F	150.4	39.0	79.2	31.1	23.1	54.5	21.6	8.8	4.4	5.0	11.4	71.2
4	2	297	1986/07/31	1971/08/08	14.98	F	160.8	46.1	81.5	34.4	24.7	55.7	20.2	9.6	7.2	11.6	7.2	79.3
	4	297	1987/07/14	1971/08/08	15.93	F	163.4	49.5	82.9	34.7	25.6	55.4	21.6	9.8	9.7	11.9	7.7	80.5
	6	297	1988/07/11	1971/08/08	16.92	F	164.7	52.7	84.8	35.4	25.4	55.4	22.5	14.0	5.5	14.8	10.7	79.9
	8	297	1989/07/11	1971/08/08	17.92	F	164.9	58.8	85.3	36.6	26.4	55.9	24.7	19.0	10.8	16.8	10.0	79.6
4	2	298	1986/07/31	1970/11/22	15.69	F	162.9	52.3	83.9	34.1	28.4	56.5	23.3	16.0	7.4	15.4	8.2	79.0
	4	298	1987/07/14	1970/11/22	16.64	F	163.8	59.1	84.6	34.3	28.7	54.8	26.5	19.2	12.7	12.4	11.0	79.2
	6	298	1988/07/11	1970/11/22	17.63	F	164.5	59.8	85.7	35.1	29.4	55.5	26.4	21.3	8.2	16.9	19.8	78.8
	8	298	1989/07/11	1970/11/22	18.63	F	165.2	61.3	86.5	35.5	29.5	54.8	26.5	18.4	11.8	13.6	14.0	78.7

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
3	2	299	1986/07/31	1973/06/28	13.09	F	165.5	53.1	79.3	35.1	23.8	53.8	22.1	13.4	5.4	12.2	6.0	86.2
	4	299	1987/07/14	1973/06/28	14.04	F	167.5	58.7	79.8	36.3	24.2	54.9	24.1	19.8	12.6	15.8	10.0	87.7
	6	299	1988/07/11	1973/06/28	15.04	F	168.5	58.2	81.4	35.7	24.4	54.5	22.5	16.6	7.2	13.2	7.0	87.1
1	2	300	1986/07/31	1970/11/09	15.72	F	153.6	42.4	77.7	35.2	23.5	53.7	21.2	11.4	4.8	11.2	6.4	75.9
1	2	301	1986/07/31	1975/08/07	10.98	M	135.6	27.2	68.3	30.3	19.8	51.9	17.1	5.8	3.2	5.0	3.4	67.3
2	2	302	1986/07/31	1970/08/20	15.95	F	150.9	52.6	78.6	34.7	24.4	54.9	24.1	16.2	7.4	17.8	13.6	72.3
	4	302	1987/07/14	1970/08/20	16.90	F	149.9	50.7	80.0	34.6	23.0	53.2	24.2	13.4	9.8	13.5	11.0	69.9
1	2	303	1986/07/31	1969/02/18	17.45	F	156.6	49.2	79.9	33.3	23.8	54.8	20.8	7.8	5.1	8.4	5.2	76.7
3	2	304	1986/07/31	1973/01/19	13.53	F	149.5	38.9	74.8	34.0	23.9	54.7	20.0	12.2	5.9	11.6	6.2	74.7
	4	304	1987/07/14	1973/01/19	14.48	F	153.2	41.9	77.2	35.2	24.5	54.6	20.9	9.6	5.7	9.1	6.3	76.0
	6	304	1988/07/11	1973/01/19	15.47	F	157.6	46.8	79.7	36.0	25.6	54.8	22.2	12.2	8.2	11.4	10.8	77.9
2	2	305	1986/07/31	1968/09/06	17.90	F	162.1	44.7	81.2	34.2	25.5	53.4	21.4	9.1	4.4	9.2	5.4	80.9
	4	305	1987/07/14	1968/09/06	18.85	F	162.1	49.6	82.9	33.7	25.3	54.4	23.8	10.8	9.1	11.8	10.0	79.2
2	2	306	1986/07/31	1969/02/22	17.44	F	161.6	41.6	80.2	32.4	22.3	51.7	20.8	7.2	4.6	9.4	8.4	81.4
	4	306	1987/07/14	1969/02/22	18.39	F	169.2	44.8	81.3	34.2	22.7	52.1	20.8	11.6	8.3	13.2	11.4	87.9
4	2	307	1986/07/31	1971/04/24	15.27	F	156.9	39.7	78.4	32.8	22.8	54.0	19.7	7.2	4.8	9.4	5.0	78.5
	4	307	1987/07/14	1971/04/24	16.22	F	160.8	45.3	80.9	34.2	24.1	54.9	22.5	10.2	7.6	10.1	7.8	79.9
	6	307	1988/07/11	1971/04/24	17.21	F	164.0	49.9	82.1	34.8	23.6	55.0	23.8	14.6	7.8	12.8	15.2	81.9

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	8	307	1989/07/11	1971/04/24	18.21	F	164.3	53.5	83.4	35.4	25.0	57.0	24.3	19.2	9.4	16.4	15.2	80.9
3	2	308	1986/07/31	1970/01/04	16.57	F	158.2	42.6	80.8	32.5	23.3	54.1	20.3	11.7	5.4	10.2	5.5	77.4
	4	308	1987/07/14	1970/01/04	17.52	F	158.9	44.0	80.0	33.4	23.9	54.5	20.8	13.7	10.8	11.4	7.9	78.9
	8	308	1989/07/11	1970/01/04	19.52	F	160.4	47.5	82.3	34.9	25.4	55.5	22.0	17.2	10.4	16.8	10.8	78.1
4	2	309	1986/07/31	1971/09/12	14.88	F	152.7	39.7	77.3	29.3	22.6	52.8	21.2	7.8	3.9	5.8	4.0	75.4
	4	309	1987/07/14	1971/09/12	15.84	F	157.3	43.3	81.9	31.8	23.6	53.4	22.8	11.8	4.7	8.0	4.1	75.4
	6	309	1988/07/11	1971/09/12	16.83	F	158.7	45.4	82.7	33.2	24.0	54.0	22.8	15.6	3.8	7.0	7.4	76.0
	8	309	1989/07/11	1971/09/12	17.83	F	159.5	47.0	81.0	34.1	24.8	53.9	23.9	14.4	6.2	6.4	4.2	78.5
4	2	310	1986/07/31	1972/11/11	13.72	F	151.1	34.3	73.7	33.4	21.6	52.1	19.3	8.0	4.9	6.4	4.4	77.4
	4	310	1987/07/14	1972/11/11	14.67	F	155.2	37.5	75.5	33.8	22.7	52.4	20.5	9.1	5.8	8.4	5.0	79.7
	6	310	1988/07/11	1972/11/11	15.66	F	160.4	41.6	77.7	34.0	23.9	52.3	22.2	8.4	4.8	7.8	8.2	82.7
	8	310	1989/07/11	1972/11/11	16.66	F	162.1	47.4	79.6	36.4	25.2	54.4	22.5	11.8	7.4	9.0	8.8	82.5
3	2	312	1986/07/31	1972/11/16	13.90	F	175.0	59.2	86.5	38.4	26.2	56.3	24.8	12.2	5.4	10.8	5.0	88.5
	4	312	1987/07/14	1972/09/04	14.86	F	176.1	63.6	86.2	37.7	27.1	55.0	24.6	18.0	13.1	15.1	11.7	89.9
	6	312	1988/07/11	1972/09/04	15.85	F	178.1	68.7	89.3	37.6	26.2	57.1	25.5	6.6	6.1	18.2	14.0	88.8
3	2	313	1986/07/31	1969/09/26	16.84	F	171.6	58.5	86.1	36.9	27.8	53.4	23.8	14.8	5.6	13.4	7.9	85.5
	4	313	1987/07/14	1969/09/26	17.80	F	174.6	60.3	85.9	36.3	28.0	53.5	26.0	19.0	11.4	10.2	11.6	88.7
	6	313	1988/07/11	1969/09/26	18.79	F	171.5	65.1	87.2	37.1	29.3	54.6	26.7	30.4	8.0	18.2	10.4	84.3

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
2	2	314	1986/07/31	1970/02/28	16.42	F	154.8	44.9	78.8	35.5	26.8	53.4	21.0	9.0	5.2	9.2	4.9	76.0
	4	314	1987/07/14	1970/02/28	17.37	F	155.3	49.3	80.1	35.8	26.0	53.9	23.2	17.3	7.7	14.4	12.0	75.2
3	2	315	1986/07/31	1966/04/06	20.32	F	162.1	52.2	82.6	34.0	26.3	54.3	24.8	12.0	4.4	11.2	5.9	79.5
	4	315	1987/07/14	1966/04/06	21.27	F	162.0	51.0	82.7	33.4	26.1	54.2	24.0	11.7	5.8	12.8	8.1	79.3
	6	315	1988/07/11	1966/04/06	22.26	F	162.1	50.8	84.2	34.7	26.4	54.3	25.2	16.4	4.8	12.0	9.6	77.9
3	2	316	1986/07/31	1970/01/05	16.57	F	152.2	49.4	77.7	35.2	24.2	53.5	25.4	9.4	3.8	8.3	6.6	74.5
	4	316	1987/07/14	1970/01/05	17.52	F	152.2	49.9	78.5	34.5	24.0	53.3	25.1	9.8	6.4	9.2	7.5	73.7
	6	316	1988/07/11	1970/01/05	18.51	F	152.7	51.7	80.3	35.4	23.7	53.3	26.3	10.0	4.0	10.6	10.6	72.4
4	2	317	1986/07/31	1970/06/20	16.11	F	151.2	36.5	79.4	33.2	22.1	50.4	22.0	9.4	4.8	8.0	6.7	71.8
	4	317	1987/07/14	1970/06/20	17.07	F	153.2	40.9	81.6	34.1	22.0	50.3	21.8	12.4	9.8	10.0	8.1	71.6
	6	317	1988/07/11	1970/06/20	18.06	F	154.9	45.7	82.9	35.1	23.3	50.9	24.0	20.6	8.2	17.1	10.2	72.0
	8	317	1989/07/11	1970/06/20	19.06	F	154.2	44.2	82.2	35.7	23.1	50.5	24.2	16.2	9.2	15.0	9.8	72.0
3	2	319	1986/07/31	1969/12/11	16.64	F	156.0	41.4	80.2	32.7	23.2	53.3	21.1	8.4	4.4	8.8	6.8	75.8
	4	319	1987/07/14	1969/12/11	17.59	F	157.4	42.6	82.3	34.3	23.4	53.6	20.9	8.2	6.8	10.4	7.8	75.1
	6	319	1988/07/11	1969/12/11	18.58	F	158.2	44.6	82.9	34.2	23.6	53.6	22.6	10.2	5.8	11.6	11.1	75.3
1	2	320	1986/07/31	1970/10/31	15.75	F	151.8	40.1	79.2	31.6	21.9	54.8	20.7	8.5	4.9	7.4	5.3	72.6
1	2	321	1986/07/31	1967/04/24	19.27	F	160.9	49.6	85.3	36.0	25.4	54.0	25.8	14.8	7.4	15.4	9.4	75.6
3	2	322	1986/07/31	1971/02/07	15.48	F	153.4	41.0	76.8	32.4	21.9	54.1	21.3	10.6	4.6	7.5	6.1	76.6

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	322	1987/07/14	1971/02/07	16.43	F	155.7	42.3	77.4	34.4	22.2	53.5	20.9	8.4	5.4	8.0	6.1	78.3
	6	322	1988/07/11	1971/02/07	17.42	F	156.7	45.9	79.5	33.9	23.2	53.5	21.4	14.2	5.2	11.0	11.0	77.2
3	2	323	1986/07/31	1971/04/24	15.27	F	154.9	41.2	77.8	34.8	22.5	52.1	21.0	7.2	3.6	6.0	4.2	77.1
	4	323	1987/07/14	1971/04/24	16.22	F	157.5	44.7	80.2	35.7	23.4	52.8	22.0	11.3	5.6	9.0	5.4	77.3
	6	323	1988/07/11	1971/04/24	17.21	F	158.7	48.3	81.7	34.3	23.6	53.5	24.2	12.8	4.3	11.0	7.6	77.0
3	2	324	1986/07/31	1970/04/14	16.30	F	154.4	51.9	79.1	34.4	24.4	52.4	25.0	21.0	9.6	13.3	9.3	75.3
	4	324	1987/07/14	1970/04/14	17.25	F	154.3	52.6	80.6	34.8	24.6	53.2	26.0	23.6	15.8	11.6	10.2	73.7
	6	324	1988/07/11	1970/04/14	18.24	F	155.5	53.8	81.5	35.1	25.1	53.0	24.0	18.2	9.4	13.6	16.5	74.0
3	6	325	1988/07/11	1979/05/13	9.16	F	155.6	52.0	82.8	35.6	26.0	55.5	25.8	27.8	8.2	4.0	8.4	72.8
	8	325	1989/07/11	1979/05/13	10.16	F	156.0	50.7	82.6	35.4	26.1	55.4	25.1	18.0	10.0	12.2	7.4	73.4
	4	325	1987/07/14	1972/01/01	15.53	F	154.3	49.8	80.8	35.0	25.8	54.9	24.4	16.5	9.0	9.6	7.0	73.5
1	4	326	1987/07/14	1969/04/07	18.27	F	156.4	59.1	86.6	33.3	26.6	55.3	25.5	17.8	7.2	13.4	12.8	69.8
1	2	327	1986/07/31	1970/10/10	15.81	F	144.4	41.1	77.2	33.0	22.9	52.8	24.3	15.0	5.3	9.3	8.0	67.2
3	2	328	1986/07/31	1969/01/03	17.57	F	164.7	60.2	84.6	36.4	27.4	54.2	24.9	20.6	7.6	16.4	10.6	80.1
	4	328	1987/07/14	1969/01/03	18.53	F	165.2	54.8	84.6	37.7	27.2	52.8	23.5	16.2	10.2	10.6	10.1	80.6
	6	328	1988/07/11	1969/01/03	19.52	F	165.0	62.8	85.9	39.1	27.8	53.0	27.0	23.8	7.3	18.6	19.0	79.1
2	2	329	1986/07/31	1970/07/07	16.07	F	162.2	47.5	79.9	34.4	25.8	51.8	22.0	10.8	4.0	7.4	5.2	82.3
	4	329	1987/07/14	1970/07/07	17.02	F	162.9	50.9	81.7	34.0	26.1	51.8	23.9	15.3	10.0	10.0	9.6	81.2

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
3	2	330	1986/07/31	1972/09/02	13.91	F	159.2	41.6	81.9	33.5	23.3	53.2	20.9	8.6	5.8	7.2	6.7	77.3
	4	330	1987/07/14	1972/09/02	14.86	F	160.2	44.4	81.8	33.6	24.0	53.8	21.7	9.8	8.6	9.0	9.8	78.4
	8	330	1989/07/11	1972/09/02	16.86	F	163.2	46.8	85.4	32.6	24.7	54.5	22.1	10.4	7.8	9.2	8.8	77.8
1	2	332	1986/07/31	1968/10/16	17.79	F	163.3	55.6	83.2	35.8	27.7	53.8	24.3	15.6	5.2	10.1	5.8	80.1
3	2	333	1986/07/31	1971/03/04	15.41	F	159.4	39.9	81.5	32.3	23.8	51.5	21.2	8.1	5.2	9.0	5.9	77.9
	4	333	1987/07/14	1971/03/04	16.36	F	161.3	41.3	81.2	33.2	24.5	51.7	21.7	10.6	4.3	9.4	7.4	80.1
	6	333	1988/07/11	1971/03/04	17.35	F	161.8	44.8	83.2	33.5	25.0	52.4	22.7	14.2	6.0	14.9	7.8	78.6
4	2	334	1986/07/31	1966/06/04	20.16	F	161.8	53.0	84.6	35.8	25.5	54.1	24.8	16.2	8.6	11.8	8.6	77.2
	4	334	1987/07/14	1966/06/04	21.11	F	161.5	54.6	86.4	35.8	25.2	54.0	25.6	17.9	12.4	13.6	9.5	75.1
	6	334	1988/07/11	1966/06/04	22.10	F	162.3	56.8	89.4	35.7	26.8	53.6	26.9	18.2	6.6	13.2	19.6	72.9
	8	334	1989/07/11	1966/06/04	23.10	F	162.0	59.7	89.4	36.4	27.1	54.7	26.8	18.2	11.0	19.8	13.0	72.6
2	2	335	1986/07/31	1972/01/25	14.51	F	147.9	34.9	72.8	33.8	23.3	50.0	19.2	8.8	5.2	10.8	6.4	75.1
	4	335	1987/07/14	1972/01/25	15.47	F	149.7	34.8	76.5	34.2	23.4	50.6	20.5	11.2	9.3	10.7	7.7	73.2
1	2	336	1986/07/31	1969/03/03	17.41	M	171.6	59.5	90.7	36.4	25.9	54.6	23.6	6.8	4.4	6.8	4.8	80.9
2	6	337	1988/07/11	1978/02/18	10.39	M	130.6	NIL	66.6	28.5	18.8	51.8	17.0	7.4	3.7	5.8	2.6	64.0
	4	337	1987/07/14	1976/01/13	11.50	M	127.3	24.0	64.0	28.0	18.6	52.3	16.6	6.8	3.1	4.5	2.5	63.3
1	2	342	1986/07/31	1973/11/22	12.69	F	148.6	28.7	73.6	29.6	21.0	52.2	16.9	6.4	5.4	6.2	4.0	75.0
4	2	343	1986/07/31	1979/04/12	7.30	F	132.9	30.6	70.0	28.9	20.4	51.3	19.7	11.0	7.5	7.8	8.7	62.9

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	343	1987/07/14	1979/04/12	8.26	F	136.8	32.3	72.0	29.9	20.2	51.0	19.6	11.8	4.8	8.9	9.4	64.8
	6	343	1988/07/12	1979/04/12	9.25	F	140.2	36.0	74.5	30.9	21.2	51.5	21.3	11.1	4.8	11.0	14.0	65.7
	8	343	1989/07/11	1979/04/12	10.25	F	146.2	40.3	77.2	32.1	22.2	51.8	22.8	10.8	10.6	14.8	13.8	69.0
2	4	346	1987/07/14	1979/11/26	7.63	F	116.7	19.5	62.7	25.0	17.1	52.1	15.9	5.2	2.6	4.4	3.0	54.0
	6	346	1988/07/11	1979/11/26	8.62	F	120.8	21.3	64.7	26.2	17.8	52.4	15.6	5.2	3.0	5.6	3.4	56.1
2	4	347	1987/07/14	1978/02/25	9.38	F	128.2	24.5	66.0	24.1	19.1	51.8	17.7	5.2	3.6	4.7	3.2	62.2
	6	347	1988/07/11	1978/02/25	10.37	F	134.0	28.4	69.0	26.3	20.6	52.2	19.8	9.7	3.0	8.4	4.5	65.0
2	4	348	1987/07/14	1980/04/29	7.21	F	116.6	20.3	62.6	24.6	17.4	50.9	17.5	7.8	5.4	5.2	3.0	54.0
	6	348	1988/07/11	1980/04/29	8.20	F	121.8	22.4	64.9	25.8	18.0	51.9	16.8	7.6	5.2	5.2	4.8	56.9
1	4	350	1987/07/14	1980/10/14	6.75	F	118.1	20.9	63.9	25.7	19.4	51.2	16.0	4.8	4.0	5.6	3.2	54.2
1	4	351	1987/07/14	1980/01/10	7.51	F	119.4	21.8	64.0	24.1	16.1	49.6	17.2	4.2	2.2	4.2	3.8	55.4
1	8	352	1989/07/11	1981/02/10	8.41	F	134.9	24.8	69.1	28.6	19.2	51.8	17.8	5.8	5.6	6.4	3.6	65.8
1	4	353	1987/07/14	1981/02/04	6.44	F	140.5	25.6	71.9	28.4	19.0	53.4	17.5	5.6	3.6	4.6	3.4	68.6
3	4	354	1987/07/14	1980/05/05	7.19	F	117.9	18.6	64.1	25.8	16.8	47.3	16.2	6.8	3.0	4.2	3.4	53.8
	6	354	1988/07/11	1980/05/05	8.18	F	123.4	23.1	65.3	25.2	17.4	49.0	16.5	6.2	4.0	4.4	2.8	58.1
	8	354	1989/07/11	1980/05/05	9.18	F	128.5	22.2	67.6	25.8	18.0	47.9	17.4	7.2	5.6	5.4	3.8	60.9
1	4	355	1987/07/14	1979/10/06	7.77	F	110.9	16.8	60.9	23.1	16.2	48.9	14.5	7.0	4.3	5.0	4.4	50.0
3	4	356	1987/07/14	1981/06/28	6.04	F	113.2	20.3	60.4	25.9	17.8	50.0	17.0	7.2	3.8	4.0	3.4	52.8

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	6	356	1988/07/12	1981/06/28	7.04	F	118.7	22.2	62.9	27.0	18.7	52.8	17.2	6.4	3.8	4.9	3.9	55.8
	8	356	1989/07/11	1981/06/28	8.04	F	125.5	24.6	65.8	28.8	19.4	50.8	17.5	8.0	6.4	5.0	4.2	59.7
3	4	357	1987/07/14	1980/07/15	7.00	F	120.9	21.5	63.0	25.2	18.5	51.6	17.8	8.2	3.6	4.6	3.8	57.9
	6	357	1988/07/11	1980/07/15	7.99	F	126.4	22.2	65.2	25.2	19.2	52.2	17.1	5.8	4.1	4.4	2.8	61.2
	8	357	1989/07/11	1980/07/15	8.99	F	130.3	24.2	67.3	26.5	20.1	52.3	18.0	7.0	3.6	4.8	3.2	63.0
3	4	359	1987/07/14	1976/09/20	10.81	F	121.3	22.4	65.4	26.0	17.9	53.5	17.4	7.4	4.0	4.6	4.6	55.9
	6	359	1988/07/11	1976/09/20	11.81	F	126.1	25.0	68.4	27.4	18.6	55.1	18.6	8.8	6.5	7.2	5.2	57.7
	8	359	1989/07/11	1976/09/20	12.81	F	132.0	28.6	71.3	29.0	19.5	55.0	18.7	7.2	6.4	6.8	5.2	60.7
2	4	360	1987/07/14	1980/03/21	7.32	F	135.2	27.7	68.9	30.1	19.0	49.9	17.8	8.8	4.0	5.0	5.2	66.3
	6	360	1988/07/11	1980/03/21	8.31	F	144.0	32.7	73.1	31.8	20.4	51.0	19.4	8.4	5.4	5.6	5.4	70.9
3	4	362	1987/07/14	1979/11/12	7.67	F	115.1	19.3	61.0	26.2	16.7	49.9	16.5	6.4	3.2	5.8	4.2	54.1
	6	362	1988/07/11	1979/11/12	8.66	F	120.3	21.4	64.1	26.1	17.3	50.5	17.2	7.0	3.2	2.0	3.4	56.2
	8	362	1989/07/11	1979/11/12	9.66	F	125.0	23.7	66.5	27.9	18.3	50.8	18.2	6.8	4.6	6.0	5.8	58.5
2	4	364	1987/07/14	1980/10/03	6.78	F	119.9	22.6	65.4	25.0	17.5	51.8	17.6	9.4	4.2	8.2	6.8	54.5
	6	364	1988/07/11	1980/10/03	7.77	F	130.4	27.0	69.1	28.0	19.5	51.0	17.6	NIL	NIL	NIL	NIL	61.3
2	4	365	1987/07/14	1980/11/17	6.66	F	106.2	14.5	59.2	22.6	15.3	50.4	14.0	6.4	4.8	4.0	3.5	47.0
	8	365	1989/07/11	1980/11/17	8.65	F	116.3	17.8	62.8	24.9	16.7	51.0	15.3	6.2	5.0	4.8	3.4	53.5
1	8	366	1989/07/11	1979/10/02	9.77	F	123.0	20.6	64.4	26.7	18.2	52.0	15.5	5.2	5.0	5.2	3.2	58.6

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2	4	368	1987/07/14	1980/10/18	6.74	M	118.2	17.8	61.3	24.7	16.4	51.1	15.0	3.4	2.5	3.7	2.8	56.9
	8	368	1989/07/11	1980/10/18	8.73	M	128.4	21.2	65.4	27.1	17.9	51.8	15.7	4.0	3.4	4.0	2.4	63.0
2	4	369	1987/07/14	1980/07/14	7.00	M	124.0	23.1	64.1	25.6	19.2	50.0	16.4	7.3	3.4	5.4	3.2	59.9
	8	369	1989/07/11	1980/07/14	8.99	M	135.5	28.2	68.1	28.1	20.8	51.3	17.0	7.6	4.0	5.2	2.8	67.4
2	4	370	1987/07/14	1981/04/26	6.22	M	118.9	19.5	61.6	23.7	16.6	52.0	15.7	7.2	3.1	5.0	3.0	57.3
	6	370	1988/07/11	1981/04/26	7.21	M	123.0	20.9	63.8	26.5	17.4	52.4	15.8	7.4	4.0	5.2	3.0	59.2
2	4	372	1987/07/14	1980/03/12	7.34	M	120.1	20.9	65.5	25.6	16.9	52.7	16.7	6.3	4.0	4.7	3.6	54.6
	8	372	1989/07/11	1980/03/12	9.33	M	128.9	24.7	68.4	27.5	18.8	52.5	17.1	6.4	3.0	4.3	2.8	60.5
2	4	373	1987/07/14	1980/09/24	6.80	M	114.0	21.4	64.4	23.2	17.3	51.1	16.9	9.7	5.7	8.4	5.0	49.6
	8	373	1989/07/11	1980/09/24	8.79	M	126.2	26.6	69.4	26.5	18.3	52.0	17.8	8.7	5.5	5.5	3.4	56.8
2	4	375	1987/07/14	1981/11/26	5.63	M	119.1	19.7	63.2	24.4	18.0	50.9	15.0	5.4	3.2	3.6	2.0	55.9
	8	375	1989/07/11	1981/11/26	7.62	M	131.2	24.9	68.0	26.7	18.3	51.7	16.6	6.0	4.5	4.3	2.6	63.2
1	4	376	1987/07/14	1980/10/17	6.74	M	129.2	22.8	66.2	28.6	18.8	54.0	16.3	4.2	2.8	3.8	2.6	63.0
1	4	377	1987/07/14	1981/01/28	6.46	M	114.6	20.0	62.0	26.0	17.6	52.1	15.7	5.4	3.3	5.4	3.8	52.6
1	6	378	1988/07/11	1978/02/10	10.41	M	123.1	21.8	65.3	26.6	17.1	52.5	16.6	6.3	3.6	3.8	2.9	57.8
1	4	379	1987/07/14	1980/10/23	6.72	M	116.9	19.1	62.7	25.0	17.0	52.1	16.5	6.4	4.6	4.0	2.9	54.2
3	4	381	1987/07/14	1981/03/11	6.34	M	110.8	17.2	60.7	22.7	15.6	51.8	14.0	8.0	3.4	5.6	4.4	50.1
	6	381	1988/07/11	1981/03/11	7.33	M	116.9	19.9	64.0	23.7	16.7	51.5	15.1	7.9	4.6	5.5	4.2	52.9

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	8	381	1989/07/11	1981/03/11	8.33	M	122.4	21.5	65.8	25.6	17.5	52.9	15.0	6.2	4.2	4.6	3.0	56.6
2	4	383	1987/07/14	1980/07/15	7.00	M	120.1	20.8	63.5	27.0	17.2	53.0	14.9	6.1	3.0	4.7	3.0	56.6
	6	383	1988/07/11	1980/07/15	7.99	M	126.4	22.4	65.9	27.5	18.6	53.6	15.2	6.3	3.4	5.2	3.0	60.5
2	4	384	1987/07/14	1979/11/28	7.63	M	108.7	16.8	59.3	22.9	16.6	51.6	14.2	8.6	4.5	5.1	3.5	49.4
	6	384	1988/07/11	1979/11/28	8.62	M	115.4	18.6	60.3	24.6	17.3	52.1	15.1	8.6	4.0	5.6	3.4	55.1
1	4	385	1987/07/14	1980/10/02	6.78	M	108.6	17.9	60.7	22.9	15.2	52.3	16.9	6.2	5.8	4.1	4.1	47.9
3	4	386	1987/07/14	1981/04/28	6.21	M	105.1	16.1	58.2	23.3	15.4	51.2	14.7	5.8	4.2	4.7	2.9	46.9
	6	386	1988/07/11	1981/04/28	7.20	M	110.0	17.1	60.0	24.2	15.9	50.7	15.0	6.2	4.3	5.7	2.7	50.0
	8	386	1989/07/11	1981/04/28	8.20	M	115.2	18.7	62.2	25.5	17.0	51.1	15.5	5.0	3.8	4.6	2.4	53.0
1	6	387	1988/07/11	1980/11/16	7.65	M	118.5	21.1	63.0	24.6	17.8	52.0	17.2	7.6	4.8	4.2	3.8	55.5
2	6	388	1988/07/12	1981/10/04	6.77	F	118.5	19.5	64.0	24.3	16.6	49.2	16.4	5.5	3.7	4.7	4.0	54.5
	8	388	1989/07/11	1981/10/04	7.77	F	124.3	22.2	62.3	25.4	17.4	49.9	17.0	6.8	6.0	4.8	3.8	62.0
2	4	389	1987/07/14	1980/09/10	6.84	M	112.3	18.2	62.1	23.8	17.0	50.0	16.8	5.9	3.7	4.5	3.2	50.2
	8	389	1989/07/11	1980/09/10	8.83	M	120.4	22.5	65.4	25.4	18.0	50.1	17.3	NIL	NIL	NIL	NIL	55.0
3	4	391	1987/07/14	1980/11/09	6.68	M	123.9	24.0	68.7	25.8	18.2	52.2	17.4	9.9	3.5	5.2	4.0	55.2
	6	391	1988/07/11	1980/11/09	7.67	M	129.3	26.6	70.6	27.4	18.5	53.1	16.7	9.4	4.3	4.7	4.3	58.7
	8	391	1989/07/11	1980/11/09	8.67	M	133.7	28.2	72.5	28.5	19.3	53.3	16.6	7.1	3.0	5.4	3.2	61.2
1	4	392	1987/07/14	1979/07/13	8.00	M	113.0	16.5	60.3	24.9	16.9	49.0	13.6	4.5	4.0	4.2	2.2	52.7

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1	8	393	1989/07/11	1980/10/30	8.70	M	126.3	23.0	67.1	28.6	17.8	52.3	17.4	4.7	2.8	4.7	2.5	59.2
4	2	394	1986/07/31	1979/09/12	6.88	M	118.7	19.2	64.7	24.2	17.6	50.8	15.4	5.1	4.4	3.3	2.6	54.0
	4	394	1987/07/14	1979/09/12	7.84	M	123.8	20.3	66.2	25.4	17.6	51.2	15.3	4.7	2.6	3.2	2.7	57.6
	6	394	1988/07/11	1979/09/12	8.83	M	127.9	22.9	67.8	26.3	19.1	51.3	16.6	7.2	4.2	4.6	2.9	60.1
	8	394	1989/07/11	1979/09/12	9.83	M	134.4	24.8	69.7	28.0	19.5	52.3	16.8	7.1	2.9	4.6	2.8	64.7
3	2	395	1986/07/31	1978/02/22	8.44	M	138.0	27.1	69.8	29.2	19.4	50.5	16.7	4.8	3.2	3.8	3.2	68.2
	4	395	1987/07/14	1978/02/22	9.39	M	142.3	29.9	71.0	30.4	19.9	50.8	18.1	4.9	3.2	4.3	3.4	71.3
	6	395	1988/07/11	1978/02/22	10.38	M	147.2	32.9	72.2	30.7	20.7	50.5	18.6	5.8	4.0	4.4	4.2	75.0
4	2	396	1986/07/31	1979/02/14	7.46	M	117.2	20.5	62.8	26.1	18.1	50.1	16.1	5.6	5.4	4.6	2.6	54.4
	4	396	1987/07/14	1979/02/14	8.41	M	122.9	22.2	64.5	26.6	18.5	50.2	16.8	5.4	2.8	5.6	3.2	58.4
	6	396	1988/07/12	1979/02/14	9.41	M	127.4	24.3	66.4	27.0	18.8	50.8	17.8	5.5	3.5	4.8	3.6	61.0
	8	396	1989/07/11	1979/02/14	10.40	M	133.9	25.7	68.5	28.4	19.2	50.7	17.3	3.6	3.3	4.1	2.9	65.4
4	2	398	1986/07/31	1970/09/06	15.90	M	158.9	49.9	78.7	32.3	23.8	55.8	20.0	5.9	4.1	6.2	4.4	80.2
	4	398	1987/07/14	1970/09/06	16.85	M	166.1	47.8	82.8	33.9	24.7	54.7	20.2	4.8	2.8	6.2	4.3	83.3
	6	398	1988/07/12	1970/09/06	17.85	M	171.8	4.7	87.3	35.6	26.2	55.4	22.5	6.7	3.7	7.3	5.5	84.5
	8	398	1989/07/11	1970/09/06	18.84	M	174.8	57.5	88.5	36.6	26.8	55.7	23.0	6.4	3.4	7.7	3.7	86.3
3	2	399	1986/07/31	1970/05/05	16.24	M	152.4	40.8	78.8	34.1	23.1	53.3	22.3	5.2	3.2	6.4	4.3	73.6
	4	399	1987/07/14	1970/05/05	17.19	M	156.9	NIL	80.7	35.5	23.6	52.0	22.1	5.8	3.5	6.5	4.5	76.2

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	6	399	1988/07/11	1970/05/05	18.18	M	159.4	46.3	84.3	34.7	24.0	51.0	23.0	8.8	4.2	7.6	4.6	75.1
3	4	403	1987/07/14	1976/02/12	11.42	M	134.2	28.3	70.1	29.0	21.0	52.9	18.1	7.8	3.3	5.1	3.3	64.1
	6	403	1988/07/12	1976/02/12	12.41	M	137.6	29.5	71.9	29.0	20.0	53.0	18.4	7.4	3.9	5.2	2.7	65.7
	8	403	1989/07/11	1976/02/12	13.41	M	140.9	30.3	72.2	30.6	21.4	53.0	18.0	6.4	3.4	5.8	2.8	68.7
4	2	404	1986/07/31	1979/10/12	6.80	M	126.5	25.1	66.0	25.4	18.8	52.4	18.0	7.3	4.8	5.4	4.2	60.5
	4	404	1987/07/14	1979/10/12	7.75	M	130.8	26.6	67.3	27.2	19.1	53.2	17.9	7.9	5.0	8.0	5.4	63.5
	6	404	1988/07/11	1979/10/12	8.75	M	135.3	28.3	69.9	27.4	19.8	52.8	18.0	12.8	4.6	7.0	5.3	65.4
	8	404	1989/07/11	1979/10/12	9.75	M	140.2	30.1	70.8	29.5	20.8	54.3	17.0	7.1	3.4	6.0	3.8	69.4
2	2	405	1986/07/31	1974/03/19	12.37	M	140.7	31.6	71.4	30.2	19.5	56.3	18.8	7.9	3.8	7.1	4.8	69.3
	4	405	1987/07/14	1974/03/19	13.32	M	146.0	33.5	74.3	31.1	19.6	56.4	18.8	7.3	5.0	6.0	2.8	71.7
1	4	406	1987/07/14	1978/02/11	8.42	M	131.5	27.0	69.6	26.2	18.2	49.1	18.4	4.2	3.7	4.2	2.9	61.9
3	2	408	1986/07/31	1976/10/11	9.80	M	129.2	25.0	68.2	26.9	19.8	53.9	15.8	5.8	3.4	5.2	3.5	61.0
	4	408	1987/07/14	1976/10/11	10.76	M	134.0	27.0	70.1	28.4	20.8	53.8	16.4	6.7	3.8	5.1	3.6	63.9
	8	408	1989/07/11	1976/10/11	12.75	M	144.4	32.6	74.0	30.5	21.9	54.3	18.0	9.6	5.0	5.4	4.0	70.4
2	6	409	1988/07/11	1979/11/19	8.64	M	114.7	19.4	62.1	23.1	16.7	49.2	16.0	5.6	3.2	5.4	5.5	52.6
	4	409	1987/07/14	1977/11/19	9.65	M	133.5	26.0	68.6	29.2	18.8	52.2	17.7	6.6	3.5	4.5	3.4	64.9
3	2	411	1986/07/31	1967/07/28	19.01	F	160.6	55.5	82.5	34.4	24.8	56.1	24.3	16.2	4.8	20.2	9.3	78.1
	4	411	1987/07/14	1967/07/28	19.96	F	161.5	61.2	81.1	33.9	25.0	56.1	25.3	23.0	6.8	20.2	14.4	80.4

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	6	411	1988/07/11	1967/07/28	20.95	F	160.9	60.6	82.0	34.0	25.6	57.0	25.5	23.2	7.2	20.0	19.2	78.9
2	2	412	1986/07/31	1967/02/15	19.46	F	164.6	57.1	80.6	32.8	25.7	56.7	24.2	20.0	4.7	10.0	7.9	84.0
	4	412	1987/07/14	1967/02/15	20.41	F	164.8	56.7	88.0	34.5	25.0	55.6	24.3	21.2	5.2	11.2	10.2	76.8
3	2	413	1986/07/31	1968/04/19	18.28	F	162.1	59.8	81.2	33.2	26.6	55.4	25.0	15.2	7.2	15.8	10.4	80.9
	4	413	1987/07/14	1968/04/19	19.24	F	163.1	59.8	84.9	35.2	25.7	54.0	24.8	19.4	6.2	16.0	13.6	78.2
	6	413	1988/07/11	1968/04/19	20.23	F	163.4	59.8	85.1	34.9	26.9	55.4	25.3	17.8	6.8	15.5	17.4	78.3
4	2	414	1986/07/31	1970/08/03	15.99	F	161.9	58.6	82.6	35.5	26.9	58.0	24.3	15.6	5.5	12.6	12.4	79.3
	4	414	1987/07/14	1970/08/03	16.95	F	162.7	60.8	85.3	35.8	26.6	56.9	25.6	20.0	5.8	15.0	17.7	77.4
	6	414	1988/07/11	1970/08/03	17.94	F	162.8	63.1	84.4	35.7	27.8	57.1	25.6	22.8	6.0	15.2	19.9	78.4
	8	414	1989/07/11	1970/08/03	18.94	F	163.7	62.5	88.2	36.4	27.7	57.9	25.3	20.4	7.4	13.6	13.2	75.5
4	2	415	1986/07/31	1971/01/02	15.58	F	154.3	44.0	78.0	30.9	24.1	53.4	20.9	10.9	7.1	8.4	6.4	76.3
	4	415	1987/07/14	1971/01/02	16.53	F	155.2	46.4	81.0	30.0	24.3	52.9	22.0	17.0	7.0	9.6	7.6	74.2
	6	415	1988/07/11	1971/01/02	17.52	F	155.7	47.6	79.8	31.0	24.2	53.0	22.6	9.2	7.0	14.7	10.4	75.9
	8	415	1989/07/11	1971/01/02	18.52	F	156.2	52.5	81.5	32.0	26.1	54.3	24.0	24.2	12.4	18.4	9.8	74.7
2	2	416	1986/07/31	1978/01/15	8.54	F	118.2	22.0	63.8	25.0	18.3	50.3	17.9	7.2	4.6	4.8	3.6	54.4
	4	416	1987/07/14	1978/01/15	9.49	F	121.6	21.9	65.7	25.9	18.1	50.4	16.7	6.6	4.2	4.0	4.4	55.9
3	2	417	1986/07/31	1979/10/11	6.80	F	117.4	19.0	63.4	23.5	16.3	51.1	14.7	7.0	6.5	4.4	5.4	54.0
	4	417	1987/07/14	1979/10/11	7.76	F	122.7	20.2	64.8	23.7	16.2	51.4	15.4	8.1	3.6	5.0	5.6	57.9

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	8	417	1989/07/11	1979/10/11	9.75	F	132.0	24.1	69.8	24.9	18.3	51.5	16.4	8.2	6.0	5.8	4.4	62.2
2	2	418	1986/07/31	1979/02/14	7.46	F	111.8	19.1	61.1	23.0	15.9	52.2	15.7	9.6	6.2	5.8	3.8	50.7
	4	418	1987/07/14	1979/02/14	8.41	F	117.1	20.4	63.0	23.6	16.7	52.2	16.5	9.0	4.0	5.0	4.8	54.1
2	2	419	1986/07/31	1980/10/04	5.82	F	113.3	18.4	60.2	23.4	18.1	49.9	15.7	8.0	7.4	4.1	3.6	53.1
	4	419	1987/07/14	1980/10/04	6.78	F	118.5	19.6	62.4	24.9	18.9	50.2	15.9	6.8	4.8	4.8	4.8	56.1
3	2	420	1986/07/31	1980/09/05	5.90	F	112.6	16.5	62.2	22.9	17.3	55.0	14.1	7.0	5.9	4.4	3.6	50.4
	4	420	1987/07/14	1980/09/05	6.86	F	118.3	17.9	63.9	24.3	17.3	50.6	14.2	4.6	4.2	4.0	4.2	54.4
	6	420	1988/07/11	1980/09/05	7.85	F	123.5	20.0	66.5	26.0	18.6	50.9	14.2	6.8	4.9	5.0	5.1	57.0
4	2	421	1986/07/31	1979/07/01	7.08	F	111.5	18.1	61.4	22.0	16.5	49.7	15.8	9.8	7.1	5.2	4.2	50.1
	4	421	1987/07/14	1979/07/01	8.04	F	117.9	18.8	63.6	26.2	17.2	49.7	15.7	8.6	4.2	5.0	5.0	54.3
	6	421	1988/07/11	1979/07/01	9.03	F	123.5	21.2	65.6	27.4	18.1	50.5	15.7	7.2	4.8	6.4	6.3	57.9
	8	421	1989/07/11	1979/07/01	10.03	F	129.1	23.8	67.5	28.0	18.1	50.5	18.0	7.0	5.4	5.6	5.2	61.6
1	6	422	1988/07/11	1979/02/12	9.41	F	125.7	23.3	65.7	27.0	17.9	55.0	17.3	9.4	4.6	6.0	5.3	60.0
1	6	424	1988/07/11	1974/06/22	14.05	F	152.0	36.8	79.4	31.6	22.4	53.8	20.2	9.2	4.0	6.8	6.8	72.6
2	4	427	1987/07/14	1978/02/03	9.44	M	115.7	18.7	60.7	24.5	19.0	51.8	14.8	6.8	5.0	6.2	3.4	55.0
	6	427	1988/07/12	1978/02/03	10.44	M	119.7	19.9	61.7	25.7	18.6	52.3	15.4	8.9	4.6	5.5	3.4	58.0
1	4	428	1987/07/14	1978/07/09	9.01	M	116.7	19.1	61.8	25.4	16.3	50.4	14.8	5.3	3.2	4.1	2.5	54.9
1	4	429	1987/07/14	1981/04/20	6.23	M	145.5	33.9	74.5	30.0	21.2	52.3	19.6	10.2	3.8	8.2	6.4	71.0

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
4	2	430	1986/07/31	1972/12/12	13.63	F	145.2	34.6	75.3	30.6	22.1	50.5	20.3	5.2	4.8	7.2	5.0	69.9
	8	430	1989/07/11	1972/12/12	12.58	F	157.0	51.2	81.7	32.0	24.8	52.2	24.0	11.2	7.6	11.6	9.6	75.3
	4	430	1987/07/14	1972/12/12	14.59	F	149.6	40.7	78.5	32.0	22.4	51.2	20.8	7.6	6.9	7.1	5.8	71.1
	6	430	1988/07/11	1972/12/12	15.58	F	153.7	46.6	81.0	32.9	24.5	52.1	22.1	10.2	5.6	11.4	9.0	72.7
1	4	432	1987/07/14	1979/11/26	7.63	F	112.4	18.2	61.2	24.3	14.8	48.6	16.5	7.6	6.7	5.4	3.8	51.2
1	6	435	1988/07/12	1980/04/05	8.27	M	117.6	21.3	65.1	23.6	16.0	53.0	17.1	9.6	4.6	6.4	4.3	52.5
2	2	439	1986/07/31	1972/09/28	13.84	M	150.7	36.7	76.8	32.0	21.0	55.0	19.0	5.8	3.0	4.8	4.2	73.9
	4	439	1987/07/14	1972/09/28	14.79	M	159.4	44.1	81.3	34.4	22.1	56.0	21.4	6.4	6.2	6.3	4.5	78.1
3	2	440	1986/07/31	1970/02/25	16.43	M	163.9	57.6	83.1	36.7	25.2	55.6	24.4	6.6	6.1	8.4	5.2	80.8
	4	440	1987/07/14	1970/02/25	17.38	M	169.5	61.6	84.8	38.4	23.8	55.6	25.3	7.3	5.0	7.6	6.7	84.7
	6	440	1988/07/11	1970/02/25	18.37	M	171.2	65.2	88.5	40.5	26.1	56.0	27.3	NIL	NIL	NIL	NIL	82.7
1	4	441	1987/07/14	1981/03/14	6.34	F	121.2	26.0	66.2	27.0	16.6	51.9	20.9	13.0	9.3	8.0	5.0	55.0
2	2	442	1986/07/31	1980/01/15	6.54	F	116.5	24.3	63.2	25.4	17.1	51.0	19.7	14.0	6.6	6.6	6.0	53.3
	4	442	1987/07/14	1980/01/15	7.49	F	124.0	21.1	66.0	24.5	17.6	49.2	16.4	5.3	4.9	5.7	3.2	58.0
4	2	443	1986/07/31	1978/06/07	8.15	F	122.5	22.7	65.9	24.7	17.9	51.2	16.6	9.8	6.8	6.1	4.5	56.6
	4	443	1987/07/14	1978/06/07	9.10	F	129.1	26.7	67.3	28.2	18.8	52.5	18.4	9.4	7.1	6.2	10.4	61.8
	6	443	1988/07/11	1978/06/07	10.09	F	133.2	29.5	70.1	30.0	19.4	52.1	19.6	8.9	5.2	8.9	9.4	63.1
	8	443	1989/07/11	1978/06/07	11.09	F	138.6	27.3	72.1	27.9	19.6	51.8	17.4	9.8	5.4	7.2	4.2	66.5

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
1	6	445	1988/07/11	1970/12/01	17.61	M	175.5	61.4	84.4	38.1	26.4	53.7	25.8	10.3	5.2	10.8	5.8	91.1
3	2	449	1986/07/31	1970/06/29	16.09	F	160.9	52.6	84.2	35.6	26.7	55.2	22.9	10.6	4.9	8.9	7.2	76.7
	4	449	1987/07/14	1970/06/29	17.04	F	161.0	53.5	85.0	36.6	27.0	55.6	23.8	15.4	6.0	14.8	9.4	76.0
	6	449	1988/07/11	1970/06/29	18.03	F	160.9	54.7	86.3	36.1	27.1	56.4	24.1	16.6	7.4	12.2	14.0	74.6
3	2	450	1986/07/31	1974/11/13	11.71	F	152.8	32.9	73.9	30.0	22.5	53.6	18.0	8.2	3.4	6.1	4.1	78.9
	4	450	1987/07/14	1974/11/13	12.67	F	158.0	36.2	77.1	30.5	23.4	53.9	18.6	8.0	7.6	6.8	6.4	80.9
	6	450	1988/07/11	1974/11/13	13.66	F	147.5	32.3	74.2	29.6	21.0	51.9	18.8	10.0	3.8	6.8	8.1	73.3
1	2	451	1986/07/31	1973/10/06	12.82	F	154.6	43.5	78.2	33.3	24.4	52.0	21.4	12.1	5.8	13.1	12.0	76.4
3	2	455	1986/07/31	1972/08/08	13.98	F	156.6	39.6	82.5	31.6	22.4	54.6	20.3	7.6	5.4	11.2	6.8	74.1
	4	455	1987/07/14	1972/08/08	14.93	F	159.7	42.3	82.8	33.1	23.2	52.8	21.3	8.8	7.7	10.8	8.0	76.9
	6	455	1988/07/11	1972/08/08	15.92	F	161.3	45.9	84.2	33.0	23.7	53.9	21.8	14.7	8.7	13.1	8.6	77.1
1	6	457	1988/07/11	1978/04/09	10.26	M	128.8	23.5	67.1	27.4	18.3	51.6	16.8	6.2	4.5	5.4	3.2	61.7
2	4	468	1987/07/14	1978/11/03	8.69	F	122.4	20.0	64.1	23.6	17.0	50.8	15.8	5.6	3.4	4.2	3.2	58.3
	6	468	1988/07/11	1978/11/03	9.69	F	131.0	25.9	68.4	26.3	19.8	51.9	18.0	8.6	5.6	6.8	7.6	62.6
1	6	473	1988/07/11	1973/12/25	14.54	M	151.9	42.4	75.0	32.3	21.3	56.0	21.3	9.5	3.8	6.6	4.5	76.9
1	6	474	1988/07/11	1970/06/26	18.04	M	167.5	52.4	90.5	35.7	25.4	55.3	23.5	6.8	3.4	8.8	5.0	77.0
1	8	475	1989/07/11	1974/12/25	14.54	M	143.2	31.6	73.1	29.6	20.7	52.5	18.6	8.2	4.9	6.6	5.0	70.1
2	6	476	1988/07/11	1976/08/01	11.94	M	132.8	27.8	67.4	27.5	19.2	52.0	18.7	8.2	5.0	5.2	3.9	65.4

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	8	476	1989/07/11	1976/08/01	12.94	M	137.6	31.4	69.1	28.8	20.4	52.1	19.4	9.0	4.8	6.8	3.6	68.5
1	8	477	1989/07/11	1974/12/04	14.60	M	139.6	31.7	74.6	28.2	21.0	52.1	19.7	10.6	5.2	7.4	4.2	65.0
1	8	478	1989/07/11	1974/08/12	14.91	M	157.3	36.3	76.2	30.0	21.0	50.1	19.2	6.0	2.7	6.8	3.7	81.1
1	8	481	1989/07/11	1978/07/21	10.97	M	142.5	30.8	75.6	30.8	21.4	53.3	17.8	8.1	4.1	5.4	4.2	66.9
2	6	482	1988/07/11	1977/01/13	11.49	M	123.4	22.7	63.8	25.6	17.6	52.0	16.8	8.3	5.2	8.4	4.4	59.6
	8	482	1989/07/11	1977/01/13	12.49	M	127.4	24.7	65.1	26.3	18.2	52.5	17.5	6.6	8.8	7.4	4.5	62.3
1	6	484	1988/07/11	1972/04/13	16.24	F	154.8	39.5	80.3	33.2	24.9	51.7	20.1	10.8	4.1	10.1	8.0	74.5
2	6	485	1988/07/11	1978/08/16	9.90	F	130.9	26.5	69.2	29.3	19.2	51.3	17.5	8.8	3.8	6.8	5.8	61.7
	8	485	1989/07/11	1978/08/16	10.90	F	139.3	31.3	73.3	32.3	20.4	51.3	18.9	8.6	5.4	7.0	4.8	66.0
2	6	486	1988/07/11	1978/03/02	10.36	F	134.0	23.6	67.2	29.7	18.2	49.4	17.2	7.4	3.8	5.9	6.0	66.8
	8	486	1989/07/11	1978/03/02	11.36	F	142.1	27.8	70.3	30.6	19.4	50.2	19.2	9.2	5.4	5.8	6.4	71.8
1	6	487	1988/07/11	1976/06/12	12.08	F	130.5	25.6	66.5	29.1	19.5	49.8	17.5	4.4	3.6	5.0	3.6	64.0
1	6	490	1988/07/11	1976/08/03	11.94	F	139.1	31.7	74.4	29.7	20.2	53.8	19.6	7.6	3.8	7.0	5.9	64.7
2	6	492	1988/07/11	1973/11/12	14.66	F	153.3	35.0	75.0	31.1	23.1	51.1	19.9	5.6	3.4	6.9	5.0	78.3
	8	492	1989/07/11	1973/11/12	15.66	F	158.6	41.4	79.3	31.9	23.5	51.8	19.9	6.0	4.4	8.0	5.2	79.3
2	6	494	1988/07/11	1974/01/01	14.52	F	141.1	29.7	71.3	30.6	21.1	51.9	19.1	6.2	3.4	6.2	5.0	69.8
	8	494	1989/07/11	1974/01/01	15.52	F	147.0	33.0	73.5	31.4	21.9	52.7	18.2	6.8	4.0	6.8	5.2	73.5
2	6	497	1988/07/11	1978/12/10	9.58	F	134.0	24.4	69.1	28.3	20.0	52.0	16.0	7.2	4.2	5.5	5.6	64.9

Vsts	Vno	StNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	8	497	1989/07/11	1978/12/10	10.58	F	140.3	29.1	71.3	20.0	20.9	52.4	17.6	5.6	5.4	5.8	5.0	69.0
1	6	498	1988/07/11	1980/02/13	8.41	F	131.4	24.7	65.3	27.0	19.5	50.4	17.5	6.0	3.8	5.4	5.6	66.1
2	6	499	1988/07/11	1976/05/11	12.17	F	126.1	22.7	67.2	28.7	19.4	50.5	17.5	7.0	3.9	5.0	4.8	58.9
	8	499	1989/07/11	1976/05/11	13.17	F	130.1	25.0	67.4	28.4	19.3	50.0	18.2	7.0	4.8	5.6	4.6	62.7
1	6	502	1988/07/11	1972/04/03	16.27	F	156.2	42.3	81.0	32.5	23.2	52.0	21.7	11.6	3.6	11.2	7.8	75.2
2	6	503	1988/07/11	1971/04/04	17.27	F	150.8	41.6	78.3	32.2	23.1	53.5	21.1	14.1	6.2	9.2	12.6	72.5
	8	503	1989/07/11	1971/04/04	18.27	F	152.1	48.2	79.5	32.1	23.6	54.7	23.8	14.8	10.8	13.6	11.8	72.6
2	6	504	1988/07/11	1976/09/20	11.81	F	149.4	31.3	74.8	32.1	21.6	50.1	16.9	4.4	4.4	3.6	3.4	74.6
	8	504	1989/07/11	1976/09/20	12.81	F	154.9	38.9	77.2	34.4	22.4	50.8	19.8	7.6	5.2	5.2	4.2	77.7
1	6	946	1988/07/12	1972/07/16	15.99	M	160.2	51.5	77.9	32.1	24.2	53.5	24.1	17.8	3.9	10.8	6.7	82.3
1	8	947	1989/07/11	1974/09/09	14.84	F	120.4	21.9	66.2	25.3	17.2	49.2	17.7	8.2	4.2	4.2	4.8	54.2
1	8	948	1989/07/11	1979/06/28	10.04	F	124.9	22.3	66.4	25.6	18.2	51.5	17.5	7.6	5.0	5.8	5.4	58.5

UBOMBO DATA

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
2	3	1	1987/09/02	1977/11/07	9.82	F	127.6	28.0	69.4	28.2	NIL	53.1	18.5	9.7	4.6	NIL	NIL	58.2
	5	1	1989/09/05	1977/11/07	11.83	F	142.6	39.2	78.0	32.0	21.8	53.7	22.0	11.8	6.2	10.3	8.0	64.6
4	2	3	1986/09/01	1978/05/25	8.27	F	128.9	25.0	67.7	28.8	20.8	51.3	17.5	10.2	5.0	4.2	6.0	61.2
	3	3	1987/09/01	1978/05/25	9.27	F	134.6	27.4	69.9	29.0	22.2	51.3	17.9	10.4	5.2	NIL	NIL	64.7
	4	3	1988/09/01	1978/05/25	10.27	F	141.2	31.0	72.9	29.9	23.2	51.4	18.4	10.5	5.2	5.2	5.0	68.3
	5	3	1989/09/04	1978/05/25	11.28	F	148.7	38.9	77.2	31.7	24.9	51.9	20.4	10.6	7.0	7.4	6.2	71.5
3	2	5	1986/09/01	1976/11/24	9.77	F	137.8	30.4	72.4	26.6	19.9	52.0	19.5	16.0	5.3	7.0	7.6	65.4
	3	5	1987/08/31	1976/11/24	10.77	F	143.2	33.3	73.0	27.4	NIL	52.0	19.2	13.6	6.4	NIL	NIL	70.2
	4	5	1988/09/01	1976/11/24	11.77	F	148.4	36.7	75.9	29.3	21.1	52.2	21.0	14.1	5.0	7.2	6.8	72.5
3	2	6	1986/09/01	1977/04/23	9.36	F	139.7	35.6	74.2	33.5	22.7	53.6	21.3	8.6	4.6	7.1	8.2	65.5
	3	6	1987/08/31	1977/04/23	10.36	F	147.6	43.5	77.8	31.2	NIL	54.2	23.2	8.8	5.4	NIL	NIL	69.8
	4	6	1988/09/01	1977/04/23	11.36	F	152.1	50.0	81.4	33.2	25.3	54.4	26.0	12.2	6.6	11.8	12.3	70.7
1	2	7	1986/09/01	1976/12/03	9.75	F	144.5	32.1	71.2	30.8	23.3	51.5	18.0	6.0	3.8	4.8	5.0	73.3
3	2	8	1986/09/01	1976/11/03	9.83	F	131.6	29.3	69.9	29.6	19.9	52.0	18.4	10.8	6.8	6.4	4.8	61.7
	3	8	1987/08/31	1976/11/03	10.83	F	139.1	35.1	72.1	31.2	21.4	51.9	21.2	10.8	6.4	6.4	5.6	67.0
	4	8	1988/09/01	1976/11/03	11.82	F	146.5	40.4	75.9	32.4	22.6	52.9	21.8	10.5	5.7	6.9	5.1	70.6
4	2	9	1986/09/01	1976/02/11	9.83	F	123.7	25.5	65.4	27.2	18.0	52.1	20.4	10.3	4.5	5.3	5.4	58.3
	3	9	1987/08/31	1976/02/11	10.83	F	129.1	28.3	67.3	27.7	NIL	52.2	20.7	9.4	5.2	NIL	NIL	61.8
	4	9	1988/09/01	1976/02/11	11.83	F	136.4	33.2	71.1	27.9	20.0	52.3	21.8	11.4	5.5	7.0	6.4	65.3
	5	9	1989/09/04	1976/02/11	12.84	F	143.0	39.9	75.0	30.7	21.4	52.7	23.0	11.0	6.2	7.2	6.8	68.0
1	2	10	1986/09/01	1977/01/04	9.66	F	127.8	26.7	68.3	27.4	19.0	51.4	17.1	11.0	7.2	8.4	6.0	59.5
4	2	12	1986/09/01	1976/06/22	10.20	F	132.9	27.5	66.8	29.0	19.9	49.6	18.5	10.2	5.0	8.8	4.2	66.1
	3	12	1987/02/09	1976/06/22	11.20	F	139.1	33.6	70.4	29.1	0.0	50.8	19.6	10.8	5.4	NIL	NIL	68.7
	4	12	1988/09/01	1976/06/22	12.20	F	145.0	36.6	72.2	31.0	20.0	50.1	20.8	12.2	6.4	11.8	6.4	72.8
	5	12	1989/09/04	1976/06/22	13.20	F	150.9	40.2	73.9	32.5	21.8	50.4	21.5	12.0	8.6	9.6	10.0	77.0
1	3	13	1987/09/02	1977/07/23	10.11	F	133.9	26.5	72.1	28.6	NIL	51.1	18.4	9.6	4.9	NIL	NIL	61.8
4	2	15	1986/09/01	1977/08/17	9.04	F	125.7	22.7	66.8	27.2	19.4	53.5	16.8	7.2	5.2	7.8	5.6	58.9
	3	15	1987/08/31	1977/08/17	10.04	F	132.0	26.2	69.4	28.7	NIL	54.1	17.8	6.8	5.3	NIL	NIL	62.6
	4	15	1988/09/01	1977/08/17	11.04	F	137.7	30.3	73.8	29.9	20.7	54.1	19.0	6.9	3.4	6.7	4.7	63.9
	5	15	1989/09/04	1977/08/17	12.05	F	142.3	34.2	76.2	30.8	20.9	54.6	19.6	7.4	5.5	8.4	6.3	66.1
2	3	16	1987/09/02	1977/04/26	10.35	F	137.5	32.8	68.0	29.4	NIL	50.9	18.6	6.6	3.3	NIL	NIL	69.5
	5	16	1989/09/05	1977/04/26	12.36	F	150.4	40.4	74.1	31.0	21.6	51.9	20.3	6.4	3.4	6.0	5.0	76.3
2	2	17	1986/09/01	1975/11/20	10.78	F	154.2	47.7	76.9	35.9	22.8	53.5	23.0	16.2	5.5	11.0	10.4	77.3

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	3	17	1987/08/31	1975/11/20	11.78	F	155.7	52.8	79.5	35.8	NIL	54.5	24.5	17.0	7.0	NIL	NIL	76.2
3	2	18	1986/09/01	1975/12/02	10.75	F	138.6	30.8	70.5	27.4	20.7	52.0	18.7	8.6	4.4	7.6	8.2	68.1
	3	18	1987/08/31	1975/12/02	11.75	F	144.1	34.6	70.8	30.1	NIL	53.0	19.1	9.6	6.3	NIL	NIL	73.2
	4	18	1988/09/01	1975/12/02	12.75	F	151.7	41.9	76.2	31.9	23.6	52.9	21.4	10.0	5.5	10.3	10.2	75.5
4	2	19	1986/09/01	1976/06/06	10.24	F	129.2	22.8	65.3	29.5	19.3	51.7	16.9	7.0	3.1	4.7	4.3	63.9
	3	19	1987/08/31	1976/06/06	11.24	F	133.6	26.2	67.7	29.3	NIL	51.0	18.1	9.6	4.2	NIL	NIL	65.9
	4	19	1988/09/01	1976/06/06	12.24	F	144.0	33.0	73.6	31.2	21.3	52.0	20.1	8.3	4.0	6.4	4.9	70.4
	5	19	1989/09/04	1976/06/06	13.25	F	149.9	38.5	76.5	0.0	0.0	53.6	21.1	8.2	7.2	7.2	5.0	73.4
4	2	20	1986/09/01	1975/11/20	10.78	F	147.7	42.1	74.9	34.2	22.6	54.2	22.0	12.8	4.4	6.0	8.6	72.8
	3	20	1987/08/31	1975/11/20	11.78	F	153.3	46.2	76.6	35.8	NIL	54.2	23.3	15.0	7.2	NIL	NIL	76.7
	4	20	1988/09/01	1975/11/20	12.78	F	160.3	53.9	82.2	36.2	24.7	54.7	26.1	15.9	5.4	9.2	9.2	78.1
	5	20	1989/09/04	1975/11/20	13.79	F	161.9	58.7	81.6	25.0	38.6	55.0	26.7	14.8	8.8	12.6	10.3	80.3
4	2	21	1986/09/01	1976/01/09	10.00	F	143.9	29.1	70.6	28.7	22.1	52.0	17.8	7.8	4.6	4.6	4.6	73.3
	3	21	1987/08/31	1976/01/09	11.00	F	149.9	32.9	72.7	31.2	NIL	52.5	18.4	8.2	6.0	NIL	NIL	77.2
	4	21	1988/09/01	1976/01/09	12.00	F	156.2	37.2	76.7	32.4	23.5	51.6	19.0	7.3	4.7	5.5	5.4	79.5
	5	21	1989/09/04	1976/01/09	13.01	F	162.9	42.7	78.7	NIL	NIL	52.5	19.9	7.4	5.0	6.8	5.6	84.2
2	3	22	1987/09/02	1976/03/11	11.48	F	138.2	34.6	71.8	29.0	NIL	50.3	22.5	13.8	5.9	NIL	NIL	66.4
	5	22	1989/09/04	1976/03/11	13.49	F	148.4	43.7	76.3	31.2	22.5	50.0	25.2	16.8	8.6	13.0	12.5	72.1
4	2	23	1986/09/01	1976/03/06	10.49	F	134.2	27.9	69.6	29.3	20.6	51.8	18.0	7.0	3.2	4.8	3.6	64.6
	3	23	1987/08/31	1976/03/06	11.48	F	138.6	29.4	70.4	29.6	20.9	51.9	20.1	7.5	4.0	6.3	3.7	68.2
	4	23	1988/09/01	1976/03/06	12.49	F	142.1	32.1	72.4	29.7	21.0	52.0	20.9	7.6	4.3	6.4	3.8	69.7
	5	23	1989/09/04	1976/03/06	13.50	F	146.8	36.6	74.3	29.8	22.0	52.9	21.0	8.0	7.0	7.6	5.0	72.5
4	2	25	1986/09/01	1975/09/04	10.99	F	129.1	27.3	65.9	27.8	20.5	50.5	19.9	15.2	5.8	7.2	5.2	63.1
	3	25	1987/08/31	1975/09/04	11.99	F	134.3	30.8	68.7	27.9	NIL	50.9	21.8	11.8	7.2	NIL	NIL	65.6
	4	25	1988/09/01	1975/09/04	12.99	F	140.1	34.7	72.9	29.5	20.5	50.9	25.0	9.4	5.1	6.0	4.7	67.2
1	5	26	1989/09/04	1969/09/02	20.01	F	161.4	48.7	80.2	NIL	NIL	50.9	22.3	10.0	9.0	10.0	5.4	81.2
4	2	27	1986/09/01	1977/05/09	8.99	F	136.9	29.1	71.2	30.4	20.3	55.1	18.7	10.2	4.4	9.0	3.2	65.7
	3	27	1987/08/31	1977/05/09	9.99	F	142.4	34.2	72.6	31.4	NIL	53.9	19.8	12.8	4.6	NIL	NIL	69.8
	4	27	1988/09/01	1977/05/09	10.99	F	151.2	39.4	78.0	32.7	21.8	55.1	20.1	10.5	3.4	8.6	4.0	73.2
	5	27	1989/09/04	1977/05/09	12.00	F	157.7	45.2	81.5	34.4	23.3	54.8	22.3	12.0	5.2	9.6	3.8	76.2
4	2	28	1986/09/01	1976/01/09	10.00	F	139.5	33.0	72.2	30.4	21.3	55.0	20.1	13.2	8.2	6.8	5.4	67.3
	3	28	1987/02/09	1976/01/09	11.00	F	146.2	37.6	77.6	31.4	NIL	53.3	20.5	9.4	4.6	NIL	NIL	68.6
	4	28	1988/09/01	1976/01/09	12.00	F	154.2	44.0	80.1	33.1	23.0	52.1	25.3	12.6	3.8	7.6	4.8	74.1
	5	28	1989/09/04	1976/01/09	13.00	F	160.2	51.1	85.4	34.8	24.1	54.5	24.5	14.2	4.8	6.8	5.6	74.8

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
4	2	29	1986/09/01	1977/04/26	9.35	F	131.9	28.1	68.7	30.1	21.0	54.4	18.1	12.4	7.0	10.0	5.6	63.2
	3	29	1987/08/31	1977/04/26	10.35	F	135.3	35.1	71.8	NIL	NIL	54.8	19.6	18.3	8.2	NIL	NIL	73.5
	4	29	1988/09/01	1977/04/26	11.35	F	145.3	36.9	76.0	32.8	22.6	54.9	20.6	20.0	10.0	6.5	5.3	69.3
	5	29	1989/09/04	1977/04/26	12.36	F	153.7	38.7	80.4	35.5	24.6	55.6	22.7	12.4	8.8	9.6	6.8	73.3
4	2	33	1986/09/01	1975/07/14	11.13	F	139.9	31.6	74.3	29.5	22.5	51.1	19.1	10.0	7.0	4.6	8.4	65.6
	3	33	1987/08/31	1975/07/14	12.13	F	145.2	36.9	77.0	30.0	23.0	51.5	20.1	10.8	7.2	5.0	8.5	68.2
	4	33	1988/09/01	1975/07/14	13.13	F	151.3	43.9	80.9	32.1	23.8	51.9	21.6	11.0	8.0	9.0	9.0	70.4
	5	33	1989/09/04	1975/07/14	14.14	F	154.7	48.9	82.5	33.4	24.5	52.0	22.2	11.4	8.4	10.0	9.2	72.2
4	2	34	1986/09/01	1973/12/12	12.72	F	145.2	36.1	73.6	31.7	23.2	51.0	20.5	10.8	7.0	10.2	5.8	71.6
	3	34	1987/08/31	1973/12/12	13.72	F	148.8	40.7	75.6	32.2	23.0	51.1	21.7	12.2	5.9	12.0	5.6	73.2
	4	34	1988/09/01	1973/12/12	14.72	F	151.6	46.9	78.7	32.5	23.9	51.5	25.0	18.5	5.9	12.5	6.1	72.9
	5	34	1989/09/04	1973/12/12	15.73	F	152.3	55.3	79.1	34.0	24.6	51.6	28.5	19.8	8.0	13.2	7.0	73.2
2	3	35	1987/08/31	1974/09/20	12.95	F	150.4	48.4	76.3	32.3	NIL	55.9	24.8	19.9	9.4	NIL	NIL	74.1
	4	35	1988/09/01	1974/09/20	13.95	F	151.1	54.3	79.6	33.8	24.0	56.4	28.1	23.5	6.0	17.0	11.4	71.4
4	2	36	1986/09/01	1974/11/06	11.85	F	135.9	33.7	69.7	30.5	22.0	50.0	19.5	8.7	3.8	5.6	7.2	66.2
	3	36	1987/08/31	1974/11/06	12.84	F	142.4	39.1	72.8	30.9	24.0	50.9	21.1	10.6	4.6	5.6	5.0	69.6
	4	36	1988/09/01	1974/11/06	13.85	F	147.6	45.2	77.3	32.5	25.0	51.7	22.5	10.7	5.0	6.8	5.4	70.3
	5	36	1989/09/04	1974/11/06	14.86	F	151.3	50.6	78.8	33.0	26.0	52.0	24.4	11.2	5.4	10.2	8.4	72.5
4	2	37	1986/09/01	1977/01/04	9.42	F	131.2	28.5	67.9	29.5	20.2	52.2	21.2	9.8	5.2	5.8	4.4	63.3
	3	37	1987/08/31	1977/01/04	10.42	F	136.1	32.7	69.4	29.2	21.0	52.5	20.5	8.0	5.0	5.9	5.0	66.7
	4	37	1988/09/01	1977/01/04	11.42	F	141.5	34.0	73.7	29.7	19.8	52.2	20.6	8.9	6.0	6.0	5.5	67.8
	5	37	1989/09/04	1977/01/04	12.43	F	146.7	39.6	74.6	32.4	21.1	53.2	22.0	9.0	6.1	6.0	6.0	72.1
4	2	39	1986/09/01	1975/01/09	11.00	F	137.6	34.1	71.7	29.2	21.6	53.4	22.6	9.2	6.2	6.2	6.2	65.9
	3	39	1987/08/31	1975/01/09	12.00	F	144.7	39.1	73.4	31.6	22.0	53.8	20.6	6.2	3.4	5.0	6.0	71.3
	4	39	1988/09/01	1975/01/09	13.00	F	151.5	46.9	77.6	32.3	23.2	53.9	23.1	5.9	4.3	8.8	5.1	73.9
	5	39	1989/09/04	1975/01/09	14.01	F	154.1	52.5	79.9	33.9	24.3	53.9	25.2	8.8	5.4	10.0	5.2	74.2
1	2	43	1986/09/01	1975/06/28	11.18	F	142.4	27.4	71.0	31.0	21.4	52.3	16.8	8.4	4.8	5.8	3.8	71.4
1	2	45	1986/09/01	1974/12/25	11.69	F	129.1	22.7	69.6	27.8	18.6	52.2	16.0	5.2	2.8	5.6	2.8	59.4
3	2	46	1986/09/01	1974/12/27	11.68	F	162.4	49.1	84.0	33.9	25.9	56.7	22.8	11.6	5.4	8.3	5.6	78.4
	3	46	1987/08/31	1974/12/27	12.68	F	165.3	58.1	86.1	36.3	NIL	56.8	24.3	20.6	9.3	NIL	NIL	79.2
	4	46	1988/09/01	1974/12/27	13.68	F	166.4	62.1	88.0	36.6	27.0	56.4	27.9	33.6	5.4	14.6	6.0	78.4
3	2	47	1986/09/01	1975/08/08	11.07	F	145.4	37.3	74.1	30.5	21.2	54.0	20.5	10.2	7.4	12.8	6.8	71.3
	3	47	1987/08/31	1975/08/08	12.06	F	153.1	43.6	76.5	32.3	NIL	54.7	22.7	14.7	7.0	NIL	NIL	76.5
	5	47	1989/09/04	1975/08/08	14.07	F	165.8	59.8	84.7	NIL	NIL	55.9	26.9	16.2	8.2	15.6	10.6	81.1

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
4	2	48	1986/09/01	1975/02/06	11.25	F	149.1	30.8	75.5	30.3	21.4	51.6	19.6	6.8	3.8	4.4	4.2	73.5
	3	48	1987/09/01	1975/02/06	12.25	F	149.1	34.1	78.1	31.1	22.0	51.9	19.2	10.0	4.8	5.0	5.2	71.0
	4	48	1988/09/01	1975/02/06	13.25	F	156.1	40.8	83.9	33.8	23.1	52.0	22.3	9.6	5.6	7.8	6.4	72.1
	5	48	1989/09/04	1975/02/06	14.26	F	159.2	46.3	85.1	34.0	24.0	52.1	23.0	16.8	8.6	14.2	7.2	74.1
1	2	50	1986/09/01	1975/01/01	11.67	F	131.3	28.3	67.7	29.1	20.5	50.5	18.7	8.0	4.0	7.2	3.2	63.6
4	2	51	1986/09/01	1974/02/23	12.52	F	150.8	41.9	77.3	33.0	23.6	53.4	20.5	13.4	4.8	7.4	7.8	73.5
	3	51	1987/09/01	1974/02/23	13.52	F	155.1	46.2	79.3	34.2	24.0	53.7	23.0	13.0	5.0	8.0	7.9	75.7
	4	51	1988/09/01	1974/02/23	14.52	F	156.2	51.8	82.8	35.3	24.9	53.3	25.1	14.2	7.1	9.7	9.3	73.4
	5	51	1989/09/04	1974/02/23	15.53	F	156.5	55.0	81.5	36.0	25.5	53.9	26.2	19.6	12.8	13.8	10.8	74.5
4	2	52	1986/09/01	1974/10/05	12.31	F	149.8	37.9	75.8	34.8	23.2	55.0	21.2	8.2	4.0	7.3	5.0	74.0
	3	52	1987/09/01	1974/10/05	13.31	F	157.7	45.5	80.4	33.6	24.0	55.8	21.6	8.6	4.6	8.0	6.0	77.3
	4	52	1988/09/01	1974/10/05	14.31	F	163.3	52.0	84.2	34.8	25.7	55.9	23.3	9.6	4.3	10.9	6.1	79.1
	5	52	1989/09/04	1974/10/05	15.32	F	164.2	54.8	86.1	35.0	26.0	55.9	24.2	9.8	7.6	13.8	8.8	78.1
4	2	53	1986/09/01	1976/06/03	10.49	F	142.4	36.0	76.2	30.9	20.8	53.1	21.5	9.3	4.2	7.3	9.0	66.2
	3	53	1987/09/01	1976/06/03	11.49	F	147.4	43.1	76.5	30.7	21.0	53.5	23.7	9.5	5.4	8.0	9.5	70.9
	4	53	1988/09/01	1976/06/03	12.49	F	153.9	45.2	80.4	31.5	22.0	53.2	23.6	10.0	6.1	8.5	10.0	73.5
	5	53	1989/09/04	1976/06/03	13.50	F	158.1	49.1	81.4	33.6	23.2	53.7	24.0	10.4	6.8	9.5	8.8	76.6
4	2	54	1986/09/01	1975/12/03	11.47	F	140.8	29.5	72.1	29.4	20.1	52.5	18.6	10.2	4.8	10.0	9.0	68.7
	3	54	1987/09/01	1975/12/03	12.47	F	145.9	33.8	74.4	30.5	21.0	52.7	20.1	9.3	5.4	10.5	9.5	71.5
	4	54	1988/09/01	1975/12/03	13.47	F	151.9	37.3	77.1	31.1	21.8	52.8	20.6	10.0	5.6	10.7	10.0	74.8
	5	54	1989/09/04	1975/12/03	14.48	F	157.2	41.8	78.7	31.5	22.3	52.9	21.5	10.4	7.0	10.8	10.1	78.5
1	2	57	1986/09/01	1974/06/27	12.18	F	149.7	53.0	78.3	32.0	25.9	54.3	27.7	22.2	9.6	16.2	24.8	71.4
1	3	59	1987/09/02	1973/11/19	13.79	F	151.5	47.0	79.1	33.6	NIL	51.8	22.8	9.6	3.9	NIL	NIL	72.4
4	2	62	1986/09/01	1974/12/05	12.31	M	138.9	32.7	72.7	29.9	21.8	54.4	19.1	8.2	4.2	4.4	3.5	66.2
	3	62	1987/09/01	1974/12/05	13.31	M	143.1	36.1	74.5	30.8	22.3	54.7	19.6	9.6	6.5	4.0	4.0	68.6
	4	62	1988/09/01	1974/12/05	14.31	M	148.5	39.9	75.9	30.8	23.1	55.8	20.4	9.7	7.0	5.4	4.2	72.6
	5	62	1989/09/04	1974/12/05	15.32	M	155.4	44.5	79.6	33.6	24.2	55.9	21.0	9.8	7.5	5.4	4.5	75.8
1	2	63	1986/09/01	1974/08/05	12.07	F	157.3	39.3	76.2	35.8	23.8	55.9	19.9	10.3	2.9	7.2	3.8	81.1
3	2	64	1986/09/01	1974/07/02	12.17	F	156.2	42.6	80.1	33.0	23.9	56.1	28.0	7.8	9.2	14.8	8.2	76.1
	3	64	1987/09/01	1974/07/02	13.17	F	156.4	47.1	82.0	33.7	NIL	54.8	22.8	11.2	6.0	NIL	NIL	74.4
	4	64	1988/09/01	1974/07/02	14.17	F	156.6	47.6	83.1	33.5	24.8	53.9	22.9	11.4	6.5	10.7	5.3	73.5
4	2	68	1986/09/01	1975/10/12	10.73	F	139.7	30.4	69.0	29.0	20.5	51.8	21.0	14.2	7.6	6.6	8.8	70.7
	3	68	1987/09/01	1975/10/12	11.73	F	144.6	34.0	70.8	29.8	21.0	52.8	21.1	14.5	8.0	7.0	9.0	73.8
	4	68	1988/09/01	1975/10/12	12.73	F	150.4	38.0	74.0	29.9	21.8	52.9	21.1	15.0	8.5	7.5	10.0	76.4
	5	68	1989/09/04	1975/10/12	13.73	F	156.6	43.5	75.9	30.3	22.0	53.0	23.4	15.2	9.0	8.6	10.5	80.7

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
3	2	71	1986/09/01	1973/09/08	12.98	F	136.7	32.2	70.0	30.1	21.5	51.5	19.2	8.6	4.4	6.7	7.6	66.7
	3	71	1987/09/01	1973/09/08	13.98	F	144.4	36.8	74.0	31.0	NIL	52.4	20.7	9.5	4.4	NIL	NIL	70.4
	5	71	1989/09/04	1973/09/08	15.99	F	152.2	54.6	79.7	NIL	NIL	52.8	26.7	17.2	11.0	15.4	15.2	72.5
1	3	73	1987/09/02	1974/04/18	13.38	F	160.7	43.9	83.1	35.2	NIL	52.8	21.0	7.4	3.4	NIL	NIL	77.6
2	2	76	1986/09/01	1973/03/24	13.44	F	140.4	32.7	72.8	31.0	22.2	49.9	1938.0	5.8	2.6	5.2	4.0	67.6
	3	76	1987/09/01	1973/03/24	14.44	F	145.6	39.5	75.9	33.4	NIL	50.1	20.4	8.2	6.4	NIL	NIL	69.7
1	2	77	1986/09/01	1972/09/03	14.00	F	156.5	43.1	79.5	32.1	23.9	53.4	20.5	9.8	5.4	9.0	5.2	77.0
4	2	78	1986/09/01	1972/08/27	14.01	F	149.7	42.8	76.4	31.0	23.8	52.3	20.3	9.0	6.4	7.2	6.2	73.3
	3	78	1987/08/31	1972/08/27	15.01	F	156.2	51.3	81.1	33.6	25.6	53.6	23.4	9.8	6.5	9.2	8.0	75.1
	4	78	1988/09/01	1972/08/27	16.01	F	158.8	57.7	83.4	33.7	27.0	54.7	25.2	12.2	6.7	11.3	8.5	75.4
	5	78	1989/09/04	1972/08/27	17.02	F	160.5	68.3	85.0	34.5	27.5	54.8	29.4	16.2	9.8	15.6	9.0	75.5
2	2	79	1986/09/01	1973/08/21	13.03	F	150.4	36.6	75.9	31.6	22.4	52.9	20.9	7.2	3.6	5.4	4.6	74.5
	3	79	1987/09/02	1973/08/21	14.03	F	153.3	43.3	78.5	32.8	NIL	51.9	22.1	8.8	4.6	NIL	NIL	74.8
4	2	80	1986/09/01	1974/10/09	11.98	F	141.7	35.4	69.4	31.9	23.8	53.9	20.7	13.2	7.8	10.2	10.0	72.3
	3	80	1987/09/01	1974/10/09	12.98	F	148.2	41.3	71.8	32.6	24.0	54.1	20.7	15.3	8.0	10.5	10.5	76.4
	4	80	1988/09/01	1974/10/09	13.98	F	150.7	46.5	73.3	32.7	24.8	54.2	23.6	18.6	8.8	15.4	12.4	77.4
	5	80	1989/09/04	1974/10/09	14.98	F	152.3	53.6	75.1	35.6	27.2	54.3	23.8	18.7	9.0	18.2	13.0	77.2
2	2	81	1986/09/01	1973/05/31	13.41	F	150.3	44.2	79.4	35.0	23.8	54.8	24.1	12.4	13.4	9.4	8.0	70.9
	3	81	1987/08/31	1973/04/04	14.41	F	153.8	50.6	80.1	NIL	NIL	55.5	26.6	22.0	8.6	NIL	NIL	73.7
4	2	82	1986/09/01	1972/09/27	13.93	F	160.6	52.1	83.7	35.4	26.8	52.2	23.1	10.2	8.4	11.2	9.6	76.9
	3	82	1987/08/31	1972/09/27	14.93	F	162.8	57.5	85.4	36.0	27.0	52.2	25.3	15.0	8.6	11.5	10.0	77.4
	4	82	1988/09/01	1972/09/27	15.93	F	163.1	65.5	87.2	34.8	29.3	52.6	28.6	20.0	16.6	25.0	18.6	74.8
	5	82	1989/09/04	1972/09/27	16.94	F	163.5	67.9	87.5	35.0	30.0	53.2	29.0	23.2	17.0	26.8	19.0	75.5
4	2	83	1986/09/01	1972/12/15	13.71	F	158.6	48.5	80.3	34.6	24.7	53.7	23.8	15.4	6.2	10.8	7.2	78.3
	3	83	1987/09/01	1972/12/15	14.71	F	160.2	53.3	82.5	36.0	25.0	55.2	26.1	18.8	6.5	11.0	7.5	77.7
	4	83	1988/09/01	1972/12/15	15.71	F	160.2	54.3	83.4	36.3	25.6	55.3	26.9	20.0	7.0	13.6	8.0	76.8
	5	83	1989/09/04	1972/12/15	16.72	F	164.1	57.2	83.4	36.5	26.0	55.3	28.2	20.6	12.4	13.8	8.6	81.6
2	3	85	1987/09/02	1972/12/08	14.73	F	158.2	46.8	82.0	30.6	NIL	54.6	20.9	11.1	5.3	NIL	NIL	76.2
	4	85	1988/09/01	1972/12/08	15.73	F	159.7	51.6	83.7	30.0	25.0	54.2	23.8	11.6	19.4	11.6	11.6	76.0
3	2	86	1986/09/01	1972/10/04	13.91	F	151.3	39.0	76.3	33.0	23.5	51.0	18.9	6.3	3.6	8.3	6.5	75.0
	3	86	1987/09/01	1972/10/04	14.91	F	154.9	42.7	76.3	33.3	NIL	50.5	20.1	9.1	5.4	NIL	NIL	78.6
	4	86	1988/09/01	1972/10/04	15.91	F	156.1	44.2	79.6	34.0	24.3	50.2	21.1	8.0	4.3	8.2	6.7	76.5
4	2	87	1986/09/01	1973/03/02	13.58	F	162.2	51.8	83.8	36.1	26.2	56.0	20.9	7.5	3.6	10.8	7.3	78.4
	3	87	1987/09/01	1973/03/02	14.58	F	165.5	56.0	84.6	38.6	26.5	56.0	23.5	11.4	4.5	11.0	7.5	80.9
	4	87	1988/09/01	1973/03/02	15.58	F	165.7	63.5	88.0	36.7	27.6	56.0	25.2	15.0	5.4	17.8	10.6	77.7

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	5	87	1989/09/04	1973/03/02	16.58	F	166.4	67.3	86.4	37.0	28.0	56.0	26.2	19.2	9.9	21.6	16.2	80.0
3	2	88	1986/09/01	1972/11/02	13.83	F	153.1	41.8	78.9	32.6	23.5	50.0	21.2	8.5	3.9	7.3	5.3	74.1
	3	88	1987/09/02	1972/11/02	14.83	F	154.3	46.8	80.2	34.0	NIL	51.2	22.3	11.2	5.4	NIL	NIL	74.1
	4	88	1988/09/01	1972/11/02	15.83	F	155.1	48.0	82.7	33.8	24.8	50.2	22.5	12.6	4.5	8.4	7.4	72.4
4	2	89	1986/09/01	1972/11/11	13.81	F	145.3	37.7	70.4	33.0	23.0	51.9	22.0	13.2	6.0	6.8	5.0	74.9
	3	89	1987/09/01	1972/11/11	14.81	F	149.5	43.1	74.7	34.3	23.5	52.7	23.3	13.6	6.0	6.8	5.0	74.9
	4	89	1988/09/01	1972/11/11	15.81	F	151.3	48.1	78.1	34.9	24.2	52.3	25.2	14.8	6.4	7.5	7.3	73.2
	5	89	1989/09/04	1972/11/11	16.81	F	151.5	54.7	77.3	35.0	24.5	52.8	26.7	17.2	11.0	14.4	16.8	73.7
3	2	90	1986/09/01	1972/12/11	13.72	F	154.4	40.7	78.4	32.0	23.0	54.0	20.9	6.2	3.6	8.0	4.1	76.0
	3	90	1987/09/01	1972/12/11	14.72	F	158.6	47.2	80.9	32.7	22.4	54.6	10.5	6.2	NIL	NIL	NIL	77.7
	4	90	1988/09/01	1972/12/11	15.72	F	160.7	53.0	83.3	32.1	24.8	55.1	24.1	11.4	5.8	14.4	7.2	77.4
3	2	91	1986/09/01	1973/08/12	13.06	F	145.9	36.6	74.3	31.6	21.0	53.2	21.0	7.9	4.5	6.4	5.9	71.6
	3	91	1987/09/01	1973/08/12	14.06	F	152.8	43.5	77.7	32.9	NIL	53.4	21.7	12.5	6.4	NIL	NIL	75.1
	5	91	1989/09/04	1973/08/12	16.06	F	161.3	60.5	84.1	NIL	NIL	54.1	26.2	17.4	11.8	16.8	14.2	77.2
2	2	92	1986/09/01	1972/12/01	13.75	F	155.4	48.2	81.2	34.0	24.9	56.5	23.0	6.3	4.8	12.3	7.4	74.2
	3	92	1987/09/01	1972/12/01	14.75	F	158.3	55.2	83.0	35.7	NIL	57.7	23.7	11.2	5.3	NIL	NIL	75.3
3	2	93	1986/09/01	1973/07/03	13.17	F	144.2	38.4	72.2	30.4	20.1	50.8	22.1	14.4	6.0	11.4	6.2	72.0
	3	93	1987/09/01	1973/07/03	14.17	F	150.5	44.8	76.3	32.1	NIL	52.1	24.1	14.0	7.1	NIL	NIL	74.2
3	2	94	1986/09/01	1973/01/02	13.66	F	169.7	60.3	84.7	36.0	25.5	55.0	26.0	12.4	9.8	17.2	10.0	85.0
	3	94	1987/09/01	1973/01/02	14.66	F	174.1	70.3	86.2	38.0	NIL	56.7	27.7	14.0	8.4	NIL	NIL	87.8
	4	94	1988/09/01	1973/01/02	15.66	F	177.2	82.7	91.1	39.5	28.0	56.6	32.7	23.7	13.0	29.4	15.2	86.1
1	2	95	1986/09/01	1972/09/12	13.97	F	151.3	41.1	77.9	34.0	24.7	53.5	22.0	7.2	4.5	7.2	5.8	73.4
4	2	96	1986/09/01	1973/02/08	13.08	F	141.2	35.8	73.0	30.9	22.5	54.0	19.8	9.8	8.2	8.0	6.0	68.2
	3	96	1987/09/01	1973/02/08	14.08	F	148.1	41.8	75.6	31.6	23.0	55.0	22.6	13.2	9.0	8.5	6.5	72.4
	4	96	1988/09/01	1973/02/08	15.08	F	155.3	51.9	80.6	33.8	25.8	55.0	24.7	19.8	9.5	11.8	9.6	74.7
	5	96	1989/09/04	1973/02/08	16.09	F	159.1	57.2	82.3	34.3	26.9	56.0	25.3	20.2	10.0	14.0	9.8	76.8
1	2	97	1986/09/01	1972/07/14	14.13	F	160.2	49.6	80.3	34.6	24.6	58.1	22.1	11.6	7.8	7.8	6.4	79.9
4	2	99	1986/09/01	1972/03/06	14.25	F	154.7	46.7	79.8	32.7	23.8	55.0	24.5	9.6	4.4	9.4	7.4	74.8
	3	99	1987/08/31	1972/03/06	15.24	F	155.2	50.5	80.1	33.0	24.0	53.0	25.9	24.0	6.7	10.0	8.0	75.1
	4	99	1988/09/01	1972/03/06	16.25	F	155.2	50.9	81.4	33.5	24.5	53.0	26.2	24.0	6.8	15.2	9.2	75.8
	5	99	1989/09/04	1972/03/06	17.26	F	155.4	51.0	82.2	34.0	25.0	53.8	26.5	25.0	6.8	16.8	9.8	76.0
4	2	101	1986/09/01	1971/09/17	14.96	F	149.4	41.9	76.2	32.6	23.7	55.0	21.8	10.0	9.2	8.2	6.6	73.2
	3	101	1987/08/31	1971/09/17	15.95	F	154.7	45.2	77.4	33.0	24.0	55.0	22.8	13.3	10.0	8.5	7.0	77.3
	4	101	1988/09/01	1971/09/17	16.96	F	155.1	46.0	77.5	34.0	24.5	55.0	23.0	13.5	10.5	9.0	7.5	78.0
	5	101	1989/09/04	1971/09/17	17.96	F	157.5	46.5	80.8	34.8	25.0	55.0	23.5	14.0	11.0	9.5	8.0	78.5

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
4	2	107	1986/09/01	1976/05/03	10.49	F	130.9	26.1	69.1	29.4	19.5	52.4	17.5	8.6	4.0	4.6	3.2	61.8
	3	107	1987/09/01	1976/05/03	11.49	F	135.9	30.2	71.9	30.0	20.0	52.5	19.6	13.0	4.0	5.0	3.5	64.0
	4	107	1988/09/01	1976/05/03	12.49	F	142.1	34.0	74.4	30.9	21.0	52.9	20.7	13.6	4.3	5.5	3.8	67.7
	5	107	1989/09/04	1976/05/03	13.50	F	150.5	44.0	79.2	33.4	22.7	52.9	23.1	13.8	5.8	7.8	5.8	71.3
4	2	108	1986/09/01	1971/12/29	14.67	F	149.5	41.4	76.1	32.2	23.8	53.0	21.0	11.4	4.3	7.8	7.2	73.4
	3	108	1987/09/01	1971/12/29	15.67	F	152.5	43.4	77.2	32.8	24.0	53.0	21.5	11.5	4.3	8.0	7.5	75.3
	4	108	1988/02/09	1971/12/29	16.68	F	152.8	49.4	79.1	32.6	23.4	53.1	24.1	19.4	6.8	11.8	9.6	73.7
	5	108	1989/09/04	1971/12/29	17.68	F	155.5	51.3	80.6	33.0	24.0	53.2	24.5	20.6	10.8	13.2	9.8	74.9
2	3	109	1987/09/02	1972/10/20	14.87	F	148.1	36.1	75.4	30.2	NIL	49.1	20.1	8.8	3.0	NIL	NIL	72.8
	5	109	1989/09/05	1971/11/26	17.78	F	155.4	42.4	79.3	30.2	22.4	48.9	21.3	9.0	5.0	5.8	3.8	76.1
4	2	110	1986/09/01	1972/02/04	14.42	F	153.7	48.4	77.5	33.9	23.0	54.6	25.7	15.0	7.8	10.4	11.2	76.2
	3	110	1987/09/01	1972/02/04	15.42	F	152.5	53.2	80.8	34.1	23.5	54.6	26.5	12.3	5.9	10.5	11.5	71.7
	4	110	1988/09/01	1972/02/04	16.42	F	159.6	56.8	83.6	34.0	23.9	54.5	28.3	16.8	6.7	10.6	11.6	76.0
	5	110	1989/09/04	1972/02/04	17.43	F	160.1	63.2	84.3	34.4	24.0	55.2	28.5	23.1	7.0	12.2	12.0	75.7
3	2	118	1986/09/01	1972/04/11	14.39	F	155.5	46.5	77.4	35.5	22.8	52.6	23.2	14.4	7.2	9.0	6.4	78.1
	3	118	1987/09/01	1972/04/11	15.39	F	158.2	49.0	80.3	36.6	NIL	54.6	24.1	9.7	5.5	NIL	NIL	77.9
	4	118	1988/09/01	1972/04/11	16.39	F	158.2	51.7	81.9	35.6	23.9	54.2	29.9	13.6	12.0	10.6	9.2	76.3
3	2	124	1986/09/01	1972/06/14	14.22	F	165.6	62.5	84.1	36.2	27.8	55.6	27.5	17.0	6.3	16.7	12.2	81.5
	3	124	1987/09/01	1972/06/14	15.22	F	166.1	69.2	84.1	37.9	NIL	55.7	28.7	25.5	10.5	NIL	NIL	82.0
	4	124	1988/09/01	1972/06/14	16.22	F	165.2	72.1	87.8	38.0	28.7	54.0	30.3	22.0	10.8	21.5	13.2	77.4
2	2	125	1986/09/01	1971/10/05	14.91	F	158.7	56.7	84.1	36.3	28.3	54.7	26.4	15.4	8.0	22.1	7.3	74.6
	3	125	1987/09/01	1971/10/05	15.91	F	158.9	59.2	83.5	37.5	NIL	54.4	27.1	18.2	6.4	NIL	NIL	75.4
1	2	126	1986/09/01	1972/06/05	14.24	F	152.1	43.6	77.0	31.2	23.4	51.0	23.9	14.4	5.0	14.4	8.2	75.0
2	3	127	1987/09/02	1972/01/12	15.64	F	161.2	53.6	83.3	34.9	NIL	54.1	24.6	10.2	4.4	NIL	NIL	77.9
	5	127	1989/09/04	1972/01/12	17.64	F	164.1	55.8	85.5	NIL	NIL	53.7	25.2	11.2	6.2	10.6	5.8	78.5
1	3	128	1987/09/02	1972/07/05	15.16	F	154.9	51.8	79.6	32.8	NIL	52.4	25.7	14.2	5.9	NIL	NIL	75.3
4	2	129	1986/09/01	1971/11/02	14.83	F	159.1	48.1	79.2	34.5	25.0	55.9	23.1	12.3	7.4	17.3	12.9	79.9
	3	129	1987/09/01	1971/11/02	15.83	F	162.5	53.8	82.3	36.2	26.0	56.1	24.8	15.1	10.0	17.5	13.0	80.2
	4	129	1988/09/01	1971/11/02	16.83	F	163.9	58.6	83.7	36.3	26.8	56.1	26.7	16.4	11.2	22.6	14.0	80.2
	5	129	1989/09/04	1971/11/02	17.84	F	164.4	61.8	85.3	36.4	26.6	56.8	26.8	16.6	11.6	22.7	14.5	79.1
4	2	132	1986/09/01	1972/02/05	14.57	F	150.6	37.9	75.2	29.5	22.7	52.8	19.5	16.0	6.2	15.4	11.2	75.4
	3	132	1987/09/01	1972/02/05	15.57	F	156.8	45.4	78.1	32.0	23.0	53.8	20.9	16.5	6.8	16.0	11.5	78.7
	4	132	1988/09/01	1972/02/05	16.57	F	159.3	49.7	79.0	33.0	24.2	54.1	23.9	16.5	9.0	16.0	11.5	80.3
	5	132	1989/09/04	1972/02/05	17.58	F	160.4	54.6	80.5	33.5	24.5	54.5	24.7	17.0	9.5	16.2	11.8	79.9
2	2	136	1986/09/01	1972/08/04	14.08	F	158.5	47.3	81.3	34.3	23.3	55.0	23.0	8.6	4.6	8.2	10.0	77.2

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	3	136	1987/09/01	1972/08/04	15.08	F	154.8	48.6	84.2	35.2	NIL	54.5	24.2	10.5	4.2	NIL	NIL	70.6
2	2	137	1986/09/01	1971/11/01	14.83	F	156.1	52.9	82.1	31.9	24.8	54.8	24.7	20.0	8.0	16.0	11.2	73.9
	3	137	1987/09/01	1971/11/01	15.83	F	157.7	61.8	83.3	33.6	NIL	54.9	28.2	19.1	9.2	NIL	NIL	74.4
4	2	141	1986/09/01	1971/01/08	15.65	F	167.3	68.0	83.8	38.6	27.7	56.1	27.6	23.5	10.4	23.3	16.8	83.5
	3	141	1987/08/31	1971/01/08	16.64	F	169.4	69.4	85.6	38.7	28.0	56.2	29.0	29.4	11.2	23.5	17.0	83.8
	4	141	1988/09/01	1971/01/08	17.65	F	169.6	83.6	85.8	39.8	29.1	56.8	31.2	36.0	20.4	25.0	20.0	83.8
	5	141	1989/09/04	1971/01/08	18.66	F	169.6	91.3	87.0	40.0	30.1	56.9	32.9	36.5	25.0	30.0	27.2	83.9
1	3	143	1987/09/01	1971/04/29	16.34	F	161.4	54.7	83.8	NIL	NIL	52.5	25.6	NIL	NIL	NIL	NIL	77.6
1	3	145	1987/09/01	1970/10/10	16.89	F	164.9	66.6	86.3	NIL	NIL	56.1	26.0	NIL	NIL	NIL	NIL	78.6
1	2	147	1986/09/01	1970/11/27	15.76	F	158.1	67.5	83.1	35.1	26.3	55.6	29.0	18.4	13.2	23.5	24.4	74.9
3	2	149	1986/09/01	1971/08/07	15.07	F	152.5	48.0	79.5	32.5	24.7	54.0	23.4	13.8	6.0	13.5	9.0	73.0
	3	149	1987/08/31	1971/08/07	16.07	F	154.8	54.4	82.4	NIL	NIL	53.5	25.3	22.0	8.6	NIL	NIL	72.4
	5	149	1989/09/04	1971/08/07	18.08	F	154.9	50.3	83.7	30.4	26.1	53.8	23.6	14.8	7.8	13.8	11.8	71.2
1	3	150	1987/09/02	1971/07/14	16.14	F	154.9	48.4	80.0	32.3	NIL	55.6	22.9	11.4	5.2	NIL	NIL	74.9
4	2	155	1986/09/01	1971/07/01	15.17	F	166.1	52.9	81.8	36.5	25.3	57.8	22.5	13.0	6.1	12.4	8.0	84.3
	3	155	1987/09/01	1971/07/01	16.17	F	167.7	58.4	84.6	36.8	26.0	57.8	24.6	18.4	8.0	12.5	8.5	83.1
	4	155	1988/09/01	1971/07/01	17.17	F	168.6	63.6	85.8	39.8	29.1	57.8	31.2	20.0	9.0	16.8	12.2	81.9
	5	155	1989/09/04	1971/07/01	18.18	F	168.6	64.8	86.7	40.0	29.5	57.8	27.2	20.5	9.2	18.6	12.6	82.0
1	2	156	1986/09/01	1970/12/06	15.74	F	161.6	52.3	82.1	34.8	26.8	52.8	25.1	15.4	6.8	15.4	9.4	79.5
3	2	158	1986/09/01	1971/07/26	15.10	F	163.5	50.5	82.3	33.2	25.1	53.9	21.7	9.1	3.4	7.6	4.6	81.2
	3	158	1987/09/01	1971/07/26	16.10	F	167.1	59.0	85.7	35.9	NIL	55.3	24.4	13.8	5.6	NIL	NIL	81.3
	4	158	1988/09/01	1971/07/26	17.10	F	169.4	59.9	86.4	36.1	28.5	55.3	24.2	12.7	4.3	13.4	5.6	83.0
3	2	165	1986/09/01	1970/03/03	16.50	F	152.6	49.0	78.6	33.2	24.8	56.2	23.7	11.8	6.1	14.5	11.6	74.0
	3	165	1987/08/31	1970/03/03	17.50	F	152.9	50.1	78.1	NIL	NIL	55.0	24.7	17.4	8.2	NIL	NIL	74.8
	5	165	1989/09/04	1970/03/03	19.51	F	152.1	52.5	78.7	NIL	NIL	54.5	25.8	13.0	7.2	12.0	9.0	73.4
1	2	166	1986/09/01	1969/12/29	16.67	F	156.3	66.8	82.3	35.0	27.9	56.8	26.7	19.1	11.9	17.5	14.5	74.0
1	2	169	1986/09/01	1970/02/26	16.51	F	162.1	64.0	82.0	34.6	25.7	59.2	27.1	16.6	9.6	9.4	8.8	80.0
3	2	171	1986/09/01	1970/03/10	16.48	F	171.7	64.3	87.9	37.8	25.4	57.8	26.5	12.8	5.3	12.6	7.4	83.8
	3	171	1987/08/31	1970/03/10	17.48	F	172.8	68.1	91.1	NIL	NIL	57.4	27.9	26.2	5.8	NIL	NIL	81.7
	4	171	1988/09/01	1970/03/10	18.48	F	173.1	65.0	91.0	35.8	27.3	57.5	25.9	17.3	5.4	13.6	5.3	82.1
1	2	173	1986/09/01	1969/10/28	16.84	F	161.8	58.5	85.5	34.9	25.7	55.5	25.6	11.4	7.8	10.1	8.0	76.3
3	2	174	1986/09/01	1969/11/16	16.79	F	165.6	62.4	85.4	37.2	28.0	55.5	26.4	13.4	9.0	14.8	8.2	80.2
	3	174	1987/08/31	1969/11/16	17.79	F	165.8	65.3	86.7	NIL	NIL	54.3	28.0	19.5	10.5	NIL	NIL	79.1
	5	174	1989/09/04	1969/11/16	19.80	F	162.7	53.9	84.4	36.1	27.4	52.8	23.9	9.4	4.4	8.6	6.4	78.3
3	2	175	1986/09/01	1970/06/16	16.21	F	159.1	63.3	85.8	34.4	24.4	55.9	28.3	19.6	6.2	17.8	19.0	73.2

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	3	175	1987/08/31	1970/06/16	17.21	F	160.2	58.6	87.0	NIL	NIL	55.5	28.8	26.5	8.0	NIL	NIL	73.2
	5	175	1989/09/04	1970/06/16	19.22	F	160.4	62.0	85.8	34.9	24.8	55.0	29.0	19.4	7.2	12.4	10.7	74.6
1	2	176	1986/09/01	1970/05/27	16.27	F	149.3	52.3	79.2	35.2	25.9	55.4	27.5	11.6	6.6	12.0	9.8	70.1
3	2	180	1986/09/01	1970/08/31	16.00	F	154.7	48.4	78.3	35.0	26.1	53.7	26.4	10.7	5.8	10.9	5.7	76.4
	3	180	1987/08/31	1970/08/31	17.00	F	156.6	54.6	83.0	NIL	NIL	53.6	27.1	20.4	9.0	NIL	NIL	73.6
	5	180	1989/09/05	1970/08/31	19.01	F	163.9	60.7	86.0	35.9	26.5	54.7	27.0	14.1	7.9	NIL	NIL	77.9
1	2	182	1986/09/01	1969/12/25	16.69	F	155.1	49.9	82.3	34.0	23.0	53.7	21.6	14.2	5.5	11.2	6.0	72.7
1	2	183	1986/09/01	1970/06/14	16.22	F	154.1	44.0	78.5	35.2	25.1	55.2	23.6	12.8	8.2	10.0	6.8	75.6
3	2	185	1986/09/01	1969/11/16	16.79	F	162.6	61.0	84.3	35.4	26.0	58.9	24.4	20.7	8.4	18.0	16.8	78.3
	3	185	1987/09/01	1969/11/16	17.79	F	163.2	58.0	83.8	35.6	NIL	56.9	24.2	18.0	7.4	NIL	NIL	79.4
	4	185	1988/09/01	1969/11/16	18.79	F	163.7	60.8	85.3	36.4	25.2	56.5	25.3	25.4	10.2	16.8	10.0	78.4
1	2	187	1986/09/01	1970/05/22	16.28	F	156.1	54.8	82.1	34.7	24.1	56.5	20.5	14.3	8.8	26.4	20.0	74.0
2	2	194	1986/09/01	1969/04/20	17.37	F	166.8	59.4	83.3	36.3	25.7	55.8	24.5	7.4	6.4	10.1	7.0	83.5
	3	194	1987/08/31	1969/04/20	18.36	F	168.9	61.1	85.7	NIL	NIL	55.7	25.5	13.8	6.0	NIL	NIL	83.2
2	2	200	1986/09/01	1968/12/14	17.72	F	154.2	57.7	82.4	33.7	25.5	56.4	27.6	16.5	7.8	12.8	12.2	71.8
	3	200	1987/08/31	1968/12/14	18.71	F	155.4	60.6	81.9	NIL	NIL	54.7	27.3	20.4	6.7	NIL	NIL	73.5
3	3	204	1987/09/02	1969/03/28	18.43	F	157.1	47.7	81.3	36.2	NIL	52.1	23.1	15.1	4.5	NIL	NIL	75.7
	4	204	1988/09/01	1969/03/28	19.43	F	158.1	47.0	82.2	36.2	25.8	50.3	23.0	12.7	5.5	9.2	5.3	75.9
	5	204	1989/09/04	1969/03/28	20.44	F	158.1	46.7	81.2	NIL	NIL	51.4	23.2	12.0	8.2	10.8	6.8	76.8
1	2	205	1986/09/01	1969/03/10	17.48	F	148.5	62.2	78.6	34.4	28.0	57.0	27.7	26.5	14.5	30.0	32.0	69.9
3	2	206	1986/09/01	1970/09/02	16.00	F	161.1	45.0	77.8	30.4	25.4	51.2	20.2	7.4	3.8	7.5	7.4	83.3
	3	206	1987/09/02	1970/09/02	17.00	F	162.3	47.7	79.2	33.6	NIL	51.1	21.3	7.3	5.2	NIL	NIL	83.1
	5	206	1989/09/07	1970/09/02	19.01	F	162.3	48.1	80.0	34.2	25.8	50.4	22.3	10.6	5.6	9.8	5.6	82.3
1	2	207	1986/09/01	1969/08/10	17.06	F	166.2	61.8	83.6	38.2	26.7	52.3	26.0	23.1	6.0	19.3	22.8	82.6
1	3	209	1987/09/01	1968/07/06	19.16	F	162.3	58.5	82.5	NIL	NIL	53.4	27.1	NIL	NIL	NIL	NIL	79.8
1	3	211	1987/09/01	1967/11/08	19.81	F	162.7	65.8	84.0	NIL	NIL	53.9	28.4	NIL	NIL	NIL	NIL	78.7
3	2	214	1986/09/01	1968/05/22	18.28	F	160.1	58.0	84.2	34.7	28.8	57.9	26.0	19.4	12.8	22.2	21.0	75.8
	3	214	1987/09/01	1968/05/22	19.28	F	160.1	56.5	85.3	34.6	NIL	55.6	24.3	18.3	6.1	NIL	NIL	74.7
	4	214	1988/09/01	1968/05/22	20.28	F	160.1	55.2	86.8	33.2	26.4	54.2	24.5	13.7	5.0	12.1	7.3	73.3
2	2	215	1986/09/01	1968/07/08	18.15	F	154.9	53.4	79.6	35.7	25.1	53.6	28.0	20.0	13.2	24.0	22.0	75.3
	3	215	1987/08/31	1968/07/08	19.15	F	155.7	59.8	79.7	NIL	NIL	53.8	29.3	29.2	7.4	NIL	NIL	76.0
3	2	231	1986/09/01	1966/07/13	20.14	F	152.6	65.5	79.8	37.0	26.2	57.0	30.5	17.0	14.6	23.6	10.0	72.8
	3	231	1987/08/31	1966/07/13	21.13	F	153.4	68.3	80.6	NIL	NIL	55.4	32.3	29.4	13.2	NIL	NIL	72.8
	5	231	1989/09/04	1966/07/13	23.15	F	154.1	74.1	81.6	36.2	26.3	54.5	31.5	20.8	19.4	18.6	11.8	72.5
1	2	232	1986/09/01	1966/04/20	20.37	F	171.1	63.4	85.1	37.4	28.8	56.0	24.8	13.6	7.8	11.0	10.0	85.9

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
1	2	233	1986/09/01	1966/05/07	20.32	F	154.7	50.0	81.0	34.8	24.2	55.5	23.2	10.6	4.1	9.2	12.2	73.7
2	2	235	1986/09/01	1977/08/23	9.03	F	122.4	24.0	65.7	25.6	19.9	52.0	17.7	7.4	3.8	5.8	4.4	56.7
	3	235	1987/08/31	1977/08/23	10.02	F	128.5	27.7	67.9	28.4	21.0	51.0	16.8	7.7	3.8	5.6	4.9	60.6
3	2	238	1986/09/01	1976/02/11	10.55	M	138.8	29.8	72.0	28.4	20.7	54.5	17.5	7.3	3.4	3.8	3.5	66.8
	3	238	1987/09/01	1976/02/11	11.55	M	143.6	31.5	74.0	29.7	21.2	54.2	18.2	6.8	3.7	NIL	NIL	69.6
	4	238	1988/09/01	1976/02/11	12.55	M	147.2	34.5	76.2	30.8	21.8	54.4	18.8	6.6	3.5	4.7	2.6	71.0
4	2	239	1986/09/01	1977/01/03	9.66	M	132.4	31.3	69.9	29.8	20.1	54.1	20.2	12.2	6.8	8.2	6.0	62.5
	3	239	1987/09/01	1977/01/03	10.66	M	136.3	33.8	71.8	30.2	21.0	54.1	21.1	13.3	6.8	8.5	6.5	64.5
	4	239	1988/09/01	1977/01/03	11.66	M	139.6	35.3	73.7	30.8	21.1	54.1	21.2	13.5	7.3	9.0	7.0	65.9
	5	239	1989/09/04	1977/01/03	12.67	M	144.1	39.0	76.1	31.7	21.9	54.6	22.3	14.0	8.4	9.4	7.1	68.0
1	2	240	1986/09/01	1976/11/02	9.83	M	142.9	31.4	73.0	30.1	20.4	50.0	18.0	4.4	3.8	4.6	3.4	69.9
3	3	243	1987/08/31	1976/06/25	11.18	M	142.1	31.5	74.0	30.8	19.6	52.7	18.5	7.6	4.4	5.4	3.0	68.1
	4	243	1988/09/01	1976/06/25	12.19	M	146.7	34.2	75.0	31.8	20.1	52.3	19.6	7.9	5.3	4.6	3.5	71.7
	5	243	1989/09/04	1976/06/25	13.20	M	150.3	37.6	76.6	33.0	20.6	52.3	20.6	10.0	6.0	6.0	3.8	73.7
1	2	244	1986/09/01	1976/03/03	10.50	M	131.5	27.6	71.0	28.2	20.8	53.0	19.8	6.2	3.0	4.3	2.8	60.5
3	2	248	1986/09/01	1975/09/02	11.00	M	143.1	32.9	74.6	30.9	19.8	55.3	18.4	6.5	3.0	4.8	3.0	68.5
	3	248	1987/09/02	1975/09/02	12.00	M	148.5	35.6	77.5	33.7	20.9	55.9	19.5	7.0	3.2	6.3	3.1	71.0
	4	248	1988/09/01	1975/09/02	13.00	M	154.3	39.8	79.7	33.8	21.5	56.4	20.8	6.0	3.4	4.4	3.2	74.6
4	2	249	1986/09/01	1975/08/02	11.08	M	132.7	28.8	60.1	29.4	21.2	55.3	18.2	7.0	3.8	5.6	3.2	72.6
	3	249	1987/09/02	1975/08/02	12.08	M	136.7	31.8	72.4	30.4	20.6	55.1	19.2	8.2	4.2	6.7	4.4	64.3
	4	249	1988/09/01	1975/08/02	13.08	M	141.3	33.5	73.0	30.5	21.5	55.9	20.2	8.4	4.7	8.7	6.3	68.3
	5	249	1989/09/04	1975/08/02	14.09	M	145.4	39.1	75.2	30.6	21.8	56.0	21.9	12.0	6.3	9.4	6.4	70.2
4	2	251	1986/09/01	1975/02/02	11.58	M	151.5	39.9	77.5	32.0	23.0	52.9	20.2	5.6	5.0	4.8	3.8	74.0
	3	251	1987/09/02	1975/02/02	12.58	M	161.9	46.0	82.1	33.6	24.0	54.2	20.3	7.6	5.1	5.7	4.0	79.8
	4	251	1988/09/01	1975/02/02	13.58	M	169.1	53.7	86.2	34.1	25.8	54.2	21.8	8.0	6.0	5.8	4.0	82.8
	5	251	1989/09/04	1975/02/02	14.59	M	175.1	62.8	89.9	36.2	26.0	55.4	24.5	8.8	6.5	7.5	4.8	85.2
4	2	255	1986/09/01	1974/09/16	11.96	M	148.5	33.6	75.6	30.4	21.0	53.9	19.2	7.0	3.6	5.0	2.8	72.9
	3	255	1987/09/02	1974/09/16	12.96	M	152.5	35.0	77.9	33.0	21.1	54.0	19.3	7.5	4.0	5.3	2.9	74.6
	4	255	1988/09/01	1974/09/16	13.96	M	156.2	37.6	79.0	32.2	22.1	54.4	19.5	8.8	4.1	5.3	3.2	77.2
	5	255	1989/09/04	1974/09/16	14.97	M	159.6	38.9	80.5	32.4	22.4	54.3	19.6	8.9	4.2	5.5	3.5	79.1
3	2	256	1986/09/01	1974/05/02	12.33	M	135.8	30.6	69.6	29.8	20.4	55.0	18.7	6.2	3.0	5.8	4.2	66.2
	3	256	1987/09/02	1974/05/02	13.34	M	140.6	34.0	72.0	32.0	21.2	54.1	19.3	6.6	3.6	6.4	3.6	68.6
	4	256	1988/09/01	1974/05/02	14.33	M	145.1	35.9	73.5	32.1	21.6	54.4	20.1	6.3	3.6	6.0	3.6	71.5
4	2	257	1986/09/01	1974/06/15	12.21	M	148.9	34.7	72.4	32.8	22.6	51.4	20.7	6.8	4.1	4.3	2.6	76.5
	3	257	1987/09/02	1974/06/15	13.22	M	154.1	38.5	77.1	33.2	22.7	52.5	20.8	6.9	4.2	6.0	3.1	76.9

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	257	1988/09/01	1974/06/15	14.21	M	157.1	40.4	80.0	33.3	22.8	52.7	22.6	7.0	4.5	6.0	3.5	77.1
	5	257	1989/09/04	1974/06/15	15.22	M	162.1	44.0	81.1	34.3	23.2	53.5	23.0	7.7	5.1	6.1	3.6	81.0
3	2	258	1986/09/01	1973/10/02	12.92	M	163.7	44.2	80.4	37.5	25.1	57.0	20.4	5.2	3.0	6.2	4.2	83.3
	3	258	1987/09/02	1973/10/02	13.92	M	169.3	53.5	84.6	39.5	26.2	58.2	21.4	5.8	3.5	7.0	3.6	84.7
	5	258	1989/09/04	1973/10/02	15.92	M	175.3	63.2	88.1	39.5	25.5	58.6	25.0	8.8	4.5	8.3	4.1	87.2
4	2	261	1986/09/01	1974/08/04	12.08	M	151.6	39.8	78.2	32.9	22.0	54.8	21.2	4.9	2.7	5.4	4.1	73.4
	3	261	1987/08/31	1974/08/04	13.07	M	160.4	48.1	84.3	34.3	23.4	55.5	22.9	6.8	3.6	7.6	6.3	76.1
	4	261	1988/09/01	1974/08/04	14.08	M	164.7	55.3	85.2	36.1	24.1	56.9	25.2	7.2	4.0	8.6	6.0	79.5
	5	261	1989/09/04	1974/08/04	15.09	M	166.2	55.5	86.5	37.7	24.5	57.0	25.5	7.5	4.2	10.0	6.2	79.7
4	2	262	1986/09/01	1974/01/01	12.67	M	138.3	30.7	71.7	31.0	20.6	52.0	17.0	6.3	3.6	3.8	3.4	66.6
	3	262	1987/09/02	1974/01/01	13.67	M	142.7	34.9	73.6	33.0	20.8	52.4	17.6	6.4	3.9	5.4	3.5	69.1
	4	262	1988/09/01	1974/01/01	14.67	M	149.1	39.1	76.3	33.3	21.2	52.5	18.8	6.7	4.3	5.8	3.6	72.7
	5	262	1989/09/04	1974/01/01	15.67	M	156.8	43.6	80.3	34.8	21.2	52.6	19.5	6.8	4.5	6.0	3.7	76.5
2	2	264	1986/09/01	1974/05/06	12.32	M	136.6	29.8	69.1	30.2	20.2	51.7	18.8	6.5	3.2	5.2	3.1	67.5
	3	264	1987/08/31	1974/05/06	13.32	M	140.6	32.3	70.9	30.9	20.0	53.0	19.2	7.8	4.2	6.7	3.3	69.7
4	2	268	1986/09/01	1974/05/01	12.34	M	140.1	33.6	73.9	29.7	21.0	54.4	20.4	5.9	3.3	5.7	3.8	66.1
	3	268	1987/09/02	1974/05/01	13.34	M	143.6	37.1	75.8	31.4	21.1	54.8	20.5	6.2	3.5	5.7	3.8	67.8
	4	268	1988/09/01	1974/05/01	14.34	M	147.7	40.0	78.0	32.3	22.2	54.9	21.0	7.1	3.6	5.8	5.1	69.7
	5	268	1989/09/04	1974/05/01	15.35	M	155.3	46.9	81.6	34.2	23.7	55.0	22.6	7.9	4.0	6.8	5.5	73.7
2	2	269	1986/09/01	1974/02/22	12.52	M	149.9	37.6	75.9	31.6	22.7	54.5	19.7	8.0	5.2	7.2	5.6	74.0
	3	269	1987/09/02	1974/02/22	13.53	M	156.9	41.2	78.5	33.5	23.8	54.3	18.5	5.6	4.0	6.0	4.1	78.4
2	2	270	1986/09/01	1973/09/08	12.98	M	143.4	33.2	71.0	30.4	21.0	53.2	17.9	8.6	3.8	5.8	6.2	72.4
	3	270	1987/09/02	1973/09/08	13.98	M	151.3	38.1	74.9	30.5	21.7	53.2	19.1	9.2	3.9	5.8	4.2	76.4
4	2	271	1986/09/01	1975/02/28	11.51	F	137.1	33.7	70.7	29.6	20.0	52.8	20.3	13.6	8.0	8.4	6.0	66.3
	3	271	1987/08/31	1975/02/28	12.50	F	143.7	36.9	73.7	31.2	20.8	53.8	22.4	12.6	5.4	8.0	4.0	70.0
	4	271	1988/09/01	1975/02/28	13.51	F	150.8	43.6	78.0	34.0	22.4	53.9	24.6	12.7	5.7	10.1	5.7	72.8
	5	271	1989/09/04	1975/02/28	14.52	F	152.7	48.7	79.2	34.8	23.2	54.2	25.5	15.3	7.2	10.3	6.2	73.5
4	2	272	1986/09/01	1972/11/17	13.79	M	153.1	41.5	78.3	32.4	22.7	56.5	22.4	6.8	3.6	5.8	4.6	74.7
	3	272	1987/09/02	1972/11/17	14.97	M	156.6	43.2	80.1	33.7	23.2	56.5	23.0	6.8	4.0	6.2	5.0	76.5
	4	272	1988/09/01	1972/11/17	15.80	M	162.9	45.9	83.0	34.6	24.1	56.5	23.4	6.9	6.2	6.5	5.0	79.9
	5	272	1989/09/04	1972/11/17	16.80	M	168.4	56.3	85.4	35.9	25.2	57.2	25.7	7.0	6.5	7.6	5.5	83.0
1	2	273	1986/09/01	1973/07/18	13.12	M	156.7	38.3	77.5	36.1	22.9	52.0	19.2	7.8	3.0	5.4	5.6	79.2
3	2	274	1986/09/01	1973/07/18	13.12	M	147.1	34.9	74.2	32.6	21.2	54.0	18.9	6.4	3.4	4.6	6.2	72.8
	3	274	1987/09/02	1973/07/18	14.13	M	152.2	39.3	77.9	34.0	21.6	54.3	19.9	6.6	3.3	5.2	4.2	74.3
	4	274	1988/09/01	1973/07/18	15.12	M	161.3	46.5	81.1	34.9	22.7	54.1	22.2	5.8	4.1	5.5	5.7	80.2

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
4	2	275	1986/09/01	1973/02/13	13.55	M	147.9	34.0	75.8	31.6	22.6	53.8	18.1	4.8	3.6	4.0	3.8	72.1
	3	275	1987/09/02	1973/02/13	14.55	M	151.7	36.6	77.4	33.3	23.0	53.9	19.5	5.9	3.8	4.4	3.9	74.3
	4	275	1988/09/01	1973/02/13	15.55	M	156.9	41.5	79.8	33.6	23.7	55.1	21.4	5.9	3.9	4.8	3.9	77.1
	5	275	1989/09/04	1973/02/13	16.56	M	164.5	46.4	83.1	34.4	25.1	55.6	21.4	5.9	3.9	4.9	4.6	81.4
2	3	281	1987/09/02	1972/05/03	15.33	M	165.7	53.8	84.4	36.0	24.3	53.4	25.3	7.0	4.0	6.6	5.4	81.3
	5	281	1989/09/04	1972/05/03	17.34	M	169.3	59.5	87.9	37.5	23.7	54.5	27.1	9.2	4.3	9.5	5.6	81.4
4	2	284	1986/09/01	1976/01/02	10.66	F	150.1	32.5	75.6	30.0	22.1	50.0	16.5	8.2	4.2	6.8	8.6	74.5
	3	284	1987/08/31	1976/01/02	11.66	F	157.1	37.6	78.3	30.2	23.3	51.4	19.0	8.8	4.2	7.0	8.7	78.7
	4	284	1988/09/01	1976/01/02	12.66	F	164.2	38.0	82.7	34.4	23.7	51.5	19.7	8.9	7.1	7.3	8.8	81.5
	5	284	1989/09/04	1976/01/02	13.67	F	168.2	49.3	84.9	35.9	25.2	51.6	21.3	8.9	7.5	8.0	9.8	83.3
1	3	285	1987/09/02	1973/04/14	14.39	M	142.6	37.5	74.4	30.6	21.6	54.7	21.0	7.9	5.5	7.0	4.6	68.2
4	2	290	1986/09/01	1972/08/03	14.08	M	154.2	43.8	76.7	36.8	23.1	53.8	21.9	8.2	3.4	3.8	5.4	77.5
	3	290	1987/09/02	1972/08/03	15.08	M	159.9	49.4	79.8	38.2	24.8	53.8	21.9	8.6	3.5	5.3	5.5	80.1
	4	290	1988/09/01	1972/08/03	16.08	M	168.6	58.9	84.5	39.4	25.6	54.4	23.8	8.9	3.9	6.6	5.7	84.1
	5	290	1989/09/04	1972/08/03	17.09	M	176.1	66.4	88.4	41.5	26.2	57.2	24.5	8.9	4.5	6.9	6.0	87.7
4	2	291	1986/09/01	1973/02/15	13.54	M	149.2	37.6	75.9	32.4	21.4	51.0	20.0	4.6	3.0	5.4	5.2	73.3
	3	291	1987/09/02	1973/02/15	14.55	M	153.3	40.2	78.1	32.7	22.0	52.3	19.2	4.7	3.1	6.0	5.5	75.2
	4	291	1988/09/01	1973/02/15	15.54	M	158.1	43.1	79.5	33.0	22.5	52.4	19.4	4.8	3.2	6.4	5.6	78.5
	5	291	1989/09/04	1973/02/15	16.55	M	162.2	45.9	80.8	33.4	23.1	53.1	20.2	4.9	4.4	6.6	5.7	81.4
3	2	292	1986/09/01	1972/05/03	14.33	M	152.7	42.3	80.8	33.4	21.6	52.1	21.0	6.8	3.7	6.4	5.4	71.9
	3	292	1987/09/02	1972/05/03	15.33	M	156.9	45.6	83.3	35.8	22.6	52.5	21.9	6.2	3.9	7.5	5.2	73.6
	4	292	1988/09/01	1972/05/03	16.33	M	157.3	46.2	84.4	35.9	23.1	52.7	23.3	6.2	5.1	6.0	4.7	72.9
4	2	294	1986/09/01	1972/07/22	14.11	M	150.5	41.0	76.0	33.2	22.4	56.0	21.0	8.4	5.0	5.4	4.0	74.5
	3	294	1987/09/02	1972/07/22	15.12	M	156.4	45.8	79.4	35.5	23.0	56.7	21.4	8.5	5.5	6.0	4.0	77.0
	4	294	1988/09/01	1972/07/22	16.11	M	163.4	53.4	82.0	35.8	24.0	57.7	22.6	8.6	5.6	6.3	4.0	81.4
	5	294	1989/09/04	1972/07/22	17.12	M	171.1	64.0	86.5	38.0	25.1	57.7	25.5	8.7	6.0	8.3	5.1	84.5
1	3	295	1987/09/02	1972/08/14	15.05	M	155.2	40.2	80.0	32.2	21.5	55.2	21.1	3.6	3.0	4.8	3.8	75.2
2	2	296	1986/09/01	1972/04/05	14.41	M	154.2	38.3	77.5	33.9	21.9	50.5	20.0	6.1	3.6	5.6	4.2	76.7
4	2	297	1986/09/01	1972/02/08	14.56	M	149.2	37.6	72.0	33.1	23.9	53.0	18.4	5.8	3.4	5.3	3.0	77.2
	3	297	1987/09/02	1972/02/08	15.56	M	165.8	49.0	82.5	34.5	24.2	54.2	22.3	5.9	3.4	6.4	4.4	83.3
	4	297	1988/09/02	1972/02/08	16.56	M	171.4	53.4	84.3	34.6	25.0	54.7	24.6	6.0	5.0	7.7	5.5	87.1
	5	297	1989/09/04	1972/02/08	17.57	M	171.5	59.2	84.5	38.8	27.4	54.7	24.7	8.0	5.2	9.4	5.5	87.2
1	3	299	1987/09/02	1972/05/05	15.33	M	153.3	43.0	79.4	33.2	23.3	52.6	21.0	6.0	3.4	6.0	4.0	73.9
2	3	300	1987/09/02	1971/11/22	15.78	M	152.3	43.3	78.1	31.0	21.6	54.0	22.7	6.2	3.6	5.4	4.5	74.2
	5	300	1989/09/04	1971/11/22	17.78	M	162.8	51.7	84.7	34.0	23.6	54.4	23.8	5.7	3.8	5.6	4.0	78.1

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
2	2	301	1986/09/01	1972/05/03	14.33	M	157.1	40.2	77.4	33.8	23.3	55.2	18.7	5.8	3.6	6.6	3.3	79.6
	3	301	1987/09/02	1972/05/03	15.33	M	163.2	45.7	82.0	37.6	23.9	54.9	19.1	6.0	3.2	6.0	3.2	81.2
2	3	302	1987/09/02	1972/05/08	15.32	M	168.8	54.0	86.5	34.7	26.2	57.5	22.1	9.2	5.0	7.2	6.2	82.3
	5	302	1989/09/04	1972/05/08	17.33	M	176.5	62.8	91.5	38.3	26.9	58.1	24.9	13.3	5.0	9.4	6.4	85.0
3	2	307	1986/09/01	1971/04/07	15.40	M	162.8	51.1	82.8	37.8	23.7	54.8	23.8	7.0	4.2	8.2	5.4	80.0
	3	307	1987/09/02	1971/04/07	16.41	M	163.7	54.0	84.0	39.3	24.1	54.2	24.4	7.0	3.8	8.2	4.3	79.7
	4	307	1988/09/01	1971/04/07	17.40	M	164.9	56.2	85.3	38.8	24.3	54.5	25.9	7.0	4.3	801.0	4.6	79.6
4	2	308	1986/09/01	1970/10/30	15.84	M	154.1	40.1	76.3	34.4	24.0	53.4	21.8	4.8	3.0	4.8	3.4	77.7
	3	308	1987/09/02	1970/10/30	16.84	M	158.1	46.5	80.1	34.6	24.5	53.5	22.2	6.0	3.4	5.8	3.5	78.0
	4	308	1988/09/01	1970/10/30	17.84	M	163.9	48.0	82.8	35.2	25.0	53.8	22.8	6.5	3.5	5.8	3.6	81.1
	5	308	1989/09/04	1970/10/30	18.85	M	170.2	55.6	84.5	37.1	26.8	54.1	24.2	6.7	5.0	5.9	3.7	85.7
2	2	309	1986/09/01	1971/05/14	15.30	M	153.8	36.9	74.8	32.4	22.8	52.0	18.0	4.3	2.3	4.3	2.6	79.0
3	2	310	1986/09/01	1970/10/14	15.88	M	157.5	51.3	81.0	36.6	24.2	55.0	23.6	6.0	4.6	6.4	4.7	46.5
	3	310	1987/08/31	1970/10/14	16.88	M	164.1	57.0	84.1	36.6	25.3	56.5	24.5	67.8	3.8	7.2	4.2	80.0
	4	310	1988/09/01	1970/10/14	17.88	M	166.9	64.1	87.3	37.9	26.2	57.6	25.2	8.4	4.0	7.4	6.0	79.6
3	3	312	1987/09/02	1971/05/26	16.27	M	162.9	49.2	85.3	35.0	25.5	54.4	22.2	6.5	4.1	7.2	5.0	77.6
	4	312	1988/09/01	1971/05/26	17.27	M	167.8	55.2	87.6	36.6	26.0	55.5	21.7	6.9	3.8	6.5	5.5	80.2
	5	312	1989/09/04	1971/05/26	18.28	M	169.6	57.7	90.9	37.8	26.9	55.1	24.1	6.1	4.0	8.0	4.0	78.7
2	3	313	1987/09/02	1970/09/23	16.94	M	161.6	51.0	81.0	34.8	23.8	55.4	24.6	7.8	4.2	7.8	5.0	80.6
	5	313	1989/09/04	1970/09/23	18.95	M	164.4	56.9	84.3	35.7	24.3	55.7	25.1	9.8	5.0	1.0	5.1	80.1
2	3	315	1987/09/02	1971/01/07	16.65	M	175.2	62.6	89.4	37.5	26.6	56.1	24.4	7.1	4.4	8.7	5.7	85.8
	5	315	1989/09/04	1971/01/07	18.66	M	178.1	65.2	92.2	39.2	27.1	57.3	24.8	6.1	4.1	8.1	4.2	85.8
2	2	316	1986/09/01	1970/09/26	15.93	M	161.1	44.5	79.9	30.8	22.7	53.4	22.1	6.8	3.2	5.5	4.1	81.2
	3	316	1987/09/02	1970/09/26	16.93	M	169.2	54.2	84.6	35.0	24.5	52.8	23.3	7.6	3.6	6.6	4.8	84.6
4	2	317	1986/09/01	1970/12/14	15.72	M	161.2	42.6	80.1	33.5	21.7	55.4	20.1	9.0	5.7	6.4	5.6	81.1
	3	317	1987/09/02	1970/12/14	16.72	M	168.2	47.6	83.2	36.3	23.0	55.9	20.4	9.5	5.8	8.4	5.7	85.0
	4	317	1988/09/01	1970/12/14	17.72	M	175.5	54.5	86.9	36.6	24.2	56.2	21.7	10.0	7.1	8.6	5.8	88.6
	5	317	1989/09/04	1970/12/14	18.72	M	180.9	56.9	90.3	38.3	25.0	56.5	21.8	10.0	7.5	8.7	5.9	90.6
4	2	318	1986/09/01	1970/09/03	16.00	M	156.6	41.9	79.9	34.8	24.0	52.3	21.0	5.0	2.8	5.4	5.0	76.7
	3	318	1987/09/02	1970/09/03	17.00	M	163.4	48.2	85.0	36.0	25.4	53.0	22.3	5.3	3.2	6.6	5.5	78.4
	4	318	1988/09/01	1970/09/03	18.00	M	166.1	52.6	87.6	36.5	25.7	53.5	24.0	5.5	3.5	7.0	5.6	78.5
	5	318	1989/09/04	1970/09/03	19.00	M	168.1	55.8	88.2	36.5	26.4	54.0	24.5	5.8	3.8	8.0	5.7	79.9
3	2	319	1986/09/01	1971/04/15	15.38	M	172.1	66.3	84.9	38.0	26.4	58.0	25.5	8.3	4.3	8.4	5.4	87.2
	3	319	1987/09/02	1971/04/15	16.38	M	177.1	78.2	94.9	42.1	28.6	58.3	28.1	11.8	5.8	11.0	4.8	82.1
	5	319	1989/09/04	1971/04/15	18.39	M	178.8	79.4	93.0	43.0	28.7	58.2	28.2	10.2	6.3	1.1	5.2	85.8

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
4	2	322	1986/09/01	1970/07/21	16.12	M	169.8	50.7	86.3	38.8	26.4	53.5	21.6	6.0	3.6	8.3	3.9	83.5
	3	322	1987/08/31	1970/07/21	17.12	M	171.3	54.8	86.8	38.8	26.7	53.8	23.3	6.6	3.8	8.8	7.8	84.5
	4	322	1988/09/01	1970/07/21	18.12	M	171.4	54.2	88.2	38.9	26.8	53.8	23.5	7.7	3.8	9.0	8.2	85.0
	5	322	1989/09/04	1970/07/21	19.13	M	171.8	55.5	88.3	39.6	27.0	53.9	23.6	7.8	3.9	10.6	8.5	82.7
3	2	323	1986/09/01	1970/07/05	16.16	M	156.5	44.6	77.5	34.0	23.2	53.8	21.4	7.6	5.4	5.8	4.2	79.0
	3	323	1987/08/31	1970/07/05	17.16	M	164.3	52.1	81.9	35.6	24.3	53.5	23.5	9.5	4.6	8.4	5.2	82.4
	4	323	1988/09/01	1970/07/05	18.16	M	168.1	59.8	85.7	37.1	25.5	55.3	25.0	14.0	5.9	11.3	9.8	82.4
4	2	324	1986/09/01	1972/08/15	14.05	M	147.5	37.8	74.4	31.0	22.3	54.5	21.0	8.2	5.4	6.2	4.6	73.1
	3	324	1987/09/02	1972/08/15	15.05	M	151.5	43.5	78.4	34.0	23.0	54.9	22.3	10.2	5.5	8.4	5.2	82.4
	4	324	1988/09/01	1972/08/15	16.05	M	157.9	48.8	81.6	34.3	24.0	55.0	22.8	10.5	5.6	8.5	5.5	76.3
	5	324	1989/09/04	1972/08/15	17.06	M	165.7	58.1	85.5	34.5	25.7	55.0	25.6	10.5	5.6	9.0	7.0	80.2
2	2	327	1986/09/01	1969/12/14	16.72	M	163.8	59.6	83.6	38.3	25.7	58.3	27.5	7.6	4.4	11.1	5.9	80.2
	3	327	1987/09/02	1969/12/14	17.72	M	164.4	62.9	84.9	39.3	24.3	57.7	27.5	7.0	4.0	8.4	5.5	79.5
3	2	328	1986/09/01	1970/08/03	16.08	M	156.7	47.3	80.1	37.0	21.0	54.0	22.8	7.0	4.4	7.6	5.2	76.6
	3	328	1987/08/31	1970/08/03	17.08	M	157.8	49.8	82.1	36.9	22.4	53.4	23.7	8.0	4.6	8.6	6.3	75.7
	4	328	1988/09/01	1970/08/03	18.08	M	158.3	50.7	83.1	37.2	23.0	52.8	25.0	7.9	4.4	9.8	5.4	75.2
4	2	329	1986/09/01	1969/09/24	16.94	M	170.7	67.7	88.4	40.1	27.0	58.5	26.0	9.6	5.5	10.0	4.6	82.3
	3	329	1987/08/31	1969/09/24	17.93	M	174.4	72.2	90.4	40.6	27.5	55.8	27.9	11.5	4.8	2.2	7.2	84.0
	4	329	1988/09/01	1969/09/24	18.94	M	173.6	69.4	90.4	40.6	27.9	59.1	25.5	11.4	3.7	8.8	5.2	83.2
	5	329	1989/09/04	1969/09/24	19.95	M	173.5	73.0	90.6	40.8	27.5	57.7	27.7	13.7	5.4	14.2	6.8	82.9
3	2	330	1986/09/01	1969/09/07	16.98	M	168.3	53.4	83.2	37.3	25.1	57.4	22.2	5.4	4.8	8.8	4.6	85.1
	3	330	1987/08/31	1969/09/07	17.98	M	172.8	60.4	89.8	37.6	25.9	57.7	25.1	6.4	4.9	9.0	5.9	83.0
	5	330	1989/09/04	1969/09/07	19.99	M	175.5	63.4	90.9	39.1	26.4	57.5	25.5	6.1	4.2	10.9	4.0	84.6
3	2	331	1986/09/01	1970/02/06	16.57	M	162.4	50.1	85.7	35.9	23.4	55.0	22.7	5.4	3.8	6.6	4.8	76.7
	3	331	1987/08/31	1970/02/06	17.56	M	162.7	54.6	86.0	36.0	23.6	54.2	24.5	6.5	4.3	7.6	7.0	76.7
	4	331	1988/09/01	1970/02/06	18.57	M	164.3	58.3	87.9	36.7	24.3	55.6	24.5	7.8	5.4	1.1	7.4	76.4
3	3	337	1987/09/02	1969/09/11	17.98	M	171.8	63.8	87.5	36.0	27.0	56.8	26.7	6.9	4.1	7.8	4.3	84.3
	4	337	1988/09/01	1969/09/11	18.97	M	173.3	66.1	91.3	36.0	27.5	57.9	26.5	7.6	4.6	8.0	5.2	82.0
	5	337	1989/09/04	1969/09/11	19.98	M	170.7	68.9	90.2	38.1	27.5	57.4	28.5	7.2	4.4	9.9	5.9	80.5
3	2	338	1986/09/01	1970/02/09	16.56	M	171.2	66.1	92.2	38.4	26.8	59.5	26.1	7.6	3.8	7.2	5.7	79.0
	3	338	1987/09/02	1970/02/09	17.56	M	173.3	67.5	93.5	40.6	27.0	56.4	25.6	6.7	3.5	8.0	6.0	79.8
	5	338	1989/09/04	1970/02/09	19.57	M	174.2	70.2	94.5	41.2	27.3	57.3	27.6	7.7	4.2	9.4	4.5	79.7
4	2	341	1986/09/01	1969/09/14	16.97	M	157.7	47.6	80.9	35.4	23.4	53.3	21.4	7.4	3.8	5.4	4.0	76.8
	3	341	1987/09/02	1969/09/14	17.97	M	161.5	51.5	84.4	36.3	23.3	52.8	22.5	9.7	4.4	6.4	4.1	77.1
	4	341	1988/09/01	1969/09/14	18.97	M	164.1	55.7	85.2	36.2	24.0	54.9	24.7	10.2	4.7	5.9	4.5	78.9

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	5	341	1989/09/04	1969/09/14	19.97	M	166.3	56.5	86.4	37.4	24.3	53.3	24.5	8.8	4.8	5.8	4.6	79.9
2	2	343	1986/09/01	1970/08/17	16.04	M	170.8	55.7	82.7	37.2	26.8	59.0	22.5	7.1	4.0	7.0	4.2	88.1
	3	343	1987/09/02	1970/08/17	17.04	M	175.7	63.6	86.6	40.4	28.0	57.9	24.2	8.0	4.4	NIL	NIL	89.1
4	2	344	1986/09/01	1970/07/20	16.12	M	165.8	48.5	82.6	33.3	24.5	53.6	21.6	6.7	3.6	7.4	4.1	83.2
	3	344	1987/09/02	1970/07/20	17.12	M	169.5	54.1	85.4	35.0	25.6	53.5	22.5	6.8	3.5	7.2	4.2	84.1
	4	344	1988/09/01	1970/07/20	18.12	M	170.5	57.8	88.6	35.8	26.1	55.4	23.4	0.9	0.4	1.0	0.9	81.9
	5	344	1989/09/04	1970/07/20	19.13	M	173.7	60.1	88.7	35.8	26.3	55.0	25.0	8.4	4.2	12.1	5.8	85.0
1	2	345	1986/09/01	1970/08/03	16.08	M	150.5	41.7	75.9	33.8	20.6	54.4	22.7	6.7	4.2	5.0	4.4	74.6
2	2	347	1986/09/01	1969/01/16	17.63	M	172.6	62.6	86.5	42.1	25.7	59.4	28.2	7.2	4.2	8.8	3.9	86.1
	3	347	1987/08/31	1969/01/16	18.62	M	173.5	63.5	87.1	41.8	25.6	58.9	28.6	6.7	3.9	7.1	5.6	86.4
1	2	351	1986/09/01	1969/06/09	17.23	M	160.1	55.5	81.1	31.7	22.6	56.4	24.0	10.0	3.6	10.0	7.4	79.0
1	2	352	1986/09/01	1969/06/04	17.24	M	174.6	64.9	88.7	40.0	25.0	53.3	27.5	8.0	4.2	10.8	6.0	85.9
1	3	353	1987/09/02	1968/11/13	18.80	M	168.4	62.9	88.7	38.8	25.2	56.3	27.0	6.8	3.8	9.2	5.4	79.7
3	2	356	1986/09/01	1969/07/13	17.14	M	166.2	64.0	83.7	38.3	26.6	56.9	25.4	7.1	4.0	7.2	4.6	82.5
	3	356	1987/08/31	1969/07/13	18.13	M	167.6	63.5	85.3	37.8	26.8	57.0	25.8	8.0	4.4	9.2	5.6	82.3
	4	356	1988/09/01	1969/07/13	19.14	M	166.6	64.8	85.8	37.2	26.5	56.6	26.3	7.4	4.3	8.7	6.4	80.8
3	2	359	1986/09/01	1968/10/08	17.90	M	170.5	63.5	87.6	38.5	24.7	57.9	26.5	7.6	5.1	9.7	4.8	82.9
	3	359	1987/08/31	1968/10/08	18.90	M	172.1	68.2	89.7	38.0	25.8	57.3	27.5	9.2	5.4	11.0	5.8	82.4
	4	359	1988/09/01	1968/10/08	19.90	M	171.5	68.3	88.6	39.8	24.8	58.7	28.0	10.6	5.2	11.4	9.6	82.9
1	3	361	1987/09/02	1969/04/08	18.40	M	164.4	59.3	85.6	37.8	24.4	55.8	27.3	10.3	4.8	8.8	6.3	78.8
2	3	364	1987/09/02	1969/01/21	18.61	M	178.6	71.9	91.6	40.9	27.6	57.1	25.5	5.4	3.8	6.4	5.0	87.0
	4	364	1988/09/01	1969/01/21	19.61	M	179.8	70.4	94.3	40.6	27.4	57.6	24.2	4.8	3.2	6.0	4.4	85.5
2	2	365	1986/09/01	1968/10/10	17.89	M	169.1	54.9	85.9	37.4	26.5	57.0	22.4	5.8	2.9	4.2	5.7	83.1
4	2	366	1986/09/01	1969/01/06	17.65	M	163.8	59.1	81.6	36.6	27.0	56.2	25.4	9.9	4.8	10.4	4.6	82.2
	3	366	1987/09/02	1969/01/06	18.65	M	164.8	63.0	83.5	37.6	27.0	55.8	26.0	10.0	5.2	10.7	5.5	81.3
	4	366	1988/09/01	1969/01/06	19.65	M	164.9	66.4	82.8	37.7	27.4	55.9	26.2	10.6	4.0	15.8	7.5	82.1
	5	366	1989/09/04	1969/01/06	20.66	M	164.3	65.4	83.4	37.9	27.1	55.4	27.0	8.8	5.3	13.8	5.8	80.9
4	2	367	1986/09/01	1969/02/28	17.51	M	173.4	58.9	85.8	36.8	24.4	55.5	22.9	6.0	3.5	7.2	4.6	87.6
	3	367	1987/09/02	1969/02/28	18.51	M	174.1	60.7	89.5	39.7	24.6	54.9	23.0	6.5	3.7	7.5	4.5	84.6
	4	367	1988/09/01	1969/02/28	19.51	M	173.6	63.2	90.4	37.5	25.2	54.8	24.3	6.4	3.8	9.8	4.8	83.2
	5	367	1989/09/04	1969/02/28	20.52	M	174.6	63.1	89.3	39.5	24.9	56.6	24.0	6.8	4.1	8.2	5.3	85.3
1	2	378	1986/09/01	1968/08/09	18.06	M	171.8	62.8	87.0	39.4	27.4	58.0	24.8	4.7	4.3	8.1	5.4	84.8
1	3	382	1987/09/02	1967/10/08	19.90	M	174.3	66.0	86.0	38.9	25.7	56.1	25.5	5.8	3.6	7.8	4.4	88.3
3	2	386	1986/09/01	1968/04/04	18.41	M	159.1	52.5	80.7	37.0	24.9	53.0	23.9	7.0	4.0	6.2	5.4	78.3
	4	386	1988/09/01	1968/04/04	20.41	M	160.5	54.9	84.7	36.4	25.4	54.4	25.6	6.0	3.8	8.2	3.8	75.8

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	5	386	1989/09/04	1968/04/04	21.42	M	160.1	53.1	84.4	35.6	25.4	54.9	25.3	8.1	4.6	8.0	3.4	75.6
4	2	387	1986/09/01	1968/07/01	18.17	M	163.2	51.6	81.9	35.8	23.3	55.4	23.3	7.0	3.7	6.4	4.7	81.3
	3	387	1987/09/02	1968/07/01	19.17	M	165.8	56.6	84.4	39.1	24.0	55.8	24.3	7.5	3.8	6.9	4.1	81.4
	4	387	1988/09/01	1968/07/01	20.17	M	167.2	59.5	85.1	38.8	25.2	55.8	26.7	8.9	4.9	7.6	4.9	82.1
	5	387	1989/09/04	1968/07/01	21.18	M	168.2	63.5	85.6	38.9	24.4	56.1	26.0	10.2	5.0	9.4	7.1	82.6
1	2	389	1986/09/01	1966/09/09	19.98	M	179.1	65.7	91.0	39.6	27.8	57.4	26.3	4.0	4.0	6.6	5.2	88.1
4	2	390	1986/09/01	1966/09/26	19.93	M	168.2	52.7	84.4	38.6	25.9	58.4	25.9	7.1	4.5	10.4	4.1	83.8
	3	390	1987/08/31	1966/09/26	20.93	M	169.1	64.1	85.1	36.6	26.2	57.7	26.3	6.2	4.4	9.0	5.0	84.0
	4	390	1988/09/01	1966/09/26	21.93	M	168.9	64.6	85.5	36.3	25.6	58.0	26.6	6.5	4.9	8.5	4.8	83.4
	5	390	1989/09/04	1966/09/26	22.94	M	169.1	62.4	85.4	36.6	26.1	57.5	26.3	5.2	3.9	9.8	5.3	83.6
3	2	392	1986/09/01	1967/03/03	19.50	M	174.1	67.1	87.2	40.0	26.3	58.1	26.5	7.6	5.4	8.7	5.0	86.8
	3	392	1987/08/31	1967/03/03	20.50	M	175.4	67.8	89.2	39.6	27.6	57.2	26.8	8.3	4.3	9.4	6.2	86.2
	5	392	1989/09/04	1967/03/03	22.51	M	175.8	66.8	90.0	39.8	27.0	57.1	27.3	7.2	4.1	9.9	5.1	85.8
3	2	402	1986/09/01	1966/09/22	19.94	M	174.9	66.0	87.0	41.7	25.5	58.2	27.5	6.0	4.8	7.4	4.9	87.9
	3	402	1987/08/31	1966/09/22	20.94	M	176.6	64.8	90.2	41.1	26.4	56.8	26.5	6.6	3.6	8.0	7.2	86.4
	5	402	1989/09/04	1966/09/22	22.95	M	176.1	67.5	92.0	41.9	26.4	57.1	28.2	7.6	4.0	11.5	9.9	84.1
3	3	407	1987/09/02	1967/02/22	20.53	M	178.8	62.4	88.3	38.6	26.9	60.9	23.1	6.2	4.1	8.0	5.0	90.5
	4	407	1988/09/01	1967/02/22	21.52	M	179.5	63.4	89.4	39.8	27.2	61.8	22.6	6.5	3.8	6.8	3.8	90.1
	5	407	1989/09/04	1967/02/22	22.53	M	179.6	65.4	89.3	39.2	27.3	60.9	24.8	7.5	4.6	9.8	4.1	90.3
1	4	412	1988/09/01	1966/01/01	22.67	M	170.7	59.0	88.6	36.5	25.6	56.7	24.0	7.9	3.9	9.0	5.0	82.1
3	2	415	1986/09/01	1966/06/05	20.24	M	160.6	51.3	84.0	38.8	24.4	55.3	24.3	5.6	3.5	8.4	3.7	76.6
	3	415	1987/08/31	1966/06/05	21.24	M	161.7	52.7	86.6	36.6	25.0	53.6	24.3	5.6	3.3	8.6	5.2	75.1
	4	415	1988/09/01	1966/06/05	22.24	M	161.8	51.9	85.4	37.8	24.8	53.9	23.4	6.3	2.7	6.2	3.6	76.4
1	2	418	1986/09/01	1966/05/05	20.33	M	166.5	53.2	84.5	32.2	25.4	55.5	25.7	5.9	3.5	7.8	4.3	82.0
3	2	425	1986/09/01	1972/09/26	13.93	F	143.8	38.1	74.0	30.6	22.0	52.9	21.7	10.2	4.5	12.9	5.5	69.8
	3	425	1987/09/02	1972/09/26	14.93	F	149.1	46.1	77.9	33.0	NIL	54.2	22.9	12.4	5.2	NIL	NIL	71.2
	5	425	1989/09/04	1972/09/26	16.94	F	153.1	52.8	77.9	NIL	NIL	54.3	26.9	20.6	10.1	20.0	10.8	75.1
3	2	426	1986/09/01	1967/05/22	19.28	M	165.2	49.6	79.3	35.7	24.8	56.5	21.8	5.4	3.2	6.9	4.8	85.9
	4	426	1988/09/01	1967/05/22	21.28	M	167.1	48.3	81.4	35.2	24.7	55.5	20.7	5.2	3.0	6.6	5.2	85.6
	5	426	1989/09/04	1967/05/22	22.29	M	167.9	48.8	83.3	25.8	24.6	54.9	22.3	5.8	3.2	8.0	5.4	84.6
3	2	427	1986/09/01	1980/04/09	6.40	F	114.7	17.9	60.5	25.0	16.5	48.0	14.2	5.2	4.0	3.4	3.8	54.2
	3	427	1987/08/31	1980/04/09	7.40	F	121.3	20.0	63.8	27.2	17.9	48.5	15.3	5.0	3.2	5.0	3.2	57.5
	5	427	1989/09/04	1980/04/09	9.41	F	133.1	24.6	69.0	29.3	18.9	48.9	16.5	6.4	5.1	5.2	3.2	64.0
2	2	429	1986/09/01	1970/06/24	16.19	M	148.5	46.3	78.1	32.3	23.0	53.9	22.4	15.4	8.0	13.4	7.4	70.4
	3	429	1987/08/31	1970/06/24	17.19	M	152.5	49.5	80.9	32.6	23.4	53.1	22.7	16.0	6.2	13.2	6.8	71.6

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
1	2	430	1986/09/01	1967/04/03	19.41	M	174.1	78.0	93.0	41.0	27.4	59.8	30.4	8.6	5.2	7.6	4.2	81.1
4	2	431	1986/09/01	1977/04/18	9.37	F	131.6	25.1	69.4	26.6	19.0	50.6	15.8	5.6	3.4	4.6	3.4	62.2
	3	431	1987/08/31	1977/04/18	10.37	F	135.9	26.9	69.6	27.4	19.5	51.0	17.5	7.0	3.8	5.8	3.6	66.3
	4	431	1988/09/01	1977/04/18	11.37	F	139.8	29.0	71.7	27.0	20.5	53.6	17.8	5.8	3.2	5.6	4.4	68.1
	5	431	1989/09/04	1977/04/18	12.38	F	146.2	33.5	73.9	29.9	21.4	50.7	19.0	6.4	5.6	5.6	3.2	72.3
1	2	432	1986/09/01	1980/03/28	6.43	F	120.2	23.0	62.6	25.6	17.1	48.3	15.3	6.2	3.0	4.8	4.6	57.6
1	2	433	1986/09/01	1978/08/02	8.08	M	130.2	24.4	68.2	27.6	19.4	52.4	17.1	6.4	4.6	5.8	3.0	62.0
2	2	434	1986/09/01	1972/02/20	14.53	M	150.9	39.6	72.4	33.4	23.8	55.2	19.7	5.8	3.0	5.2	3.2	78.5
	3	434	1987/09/02	1972/02/20	15.53	M	154.7	46.7	76.4	35.0	NIL	54.5	22.1	6.5	3.4	6.8	4.2	78.3
1	2	435	1986/09/01	1968/09/20	17.95	F	150.8	64.2	77.1	32.6	27.3	53.6	27.8	26.2	11.2	29.0	26.2	73.7
1	2	436	1986/09/01	1970/09/09	15.98	M	159.9	52.9	83.9	35.2	22.8	55.3	25.4	8.0	4.8	8.8	4.7	76.0
2	2	437	1986/09/01	1976/08/06	10.07	M	124.7	23.6	66.3	25.8	18.1	49.4	17.1	5.8	4.0	4.8	3.2	58.4
	3	437	1987/08/31	1976/08/06	11.07	M	130.2	25.4	68.7	26.1	18.5	49.4	16.8	4.8	3.8	4.0	3.0	61.5
4	2	438	1986/09/01	1972/01/07	14.65	M	165.9	45.1	80.2	36.0	25.6	53.2	20.2	6.0	3.4	6.5	4.6	85.7
	3	438	1987/09/02	1972/01/07	15.65	M	171.7	50.8	84.0	36.4	NIL	53.9	21.1	5.6	3.8	6.5	5.3	87.7
	4	438	1988/09/01	1972/01/07	16.65	M	175.3	55.0	86.8	38.8	37.3	52.6	22.8	6.3	3.9	6.5	4.2	88.5
	5	438	1989/09/04	1972/01/07	17.66	M	176.2	56.3	89.2	39.5	27.7	53.8	22.5	6.8	3.8	7.5	4.3	87.0
2	2	439	1986/09/01	1974/09/22	11.94	F	133.2	27.8	69.4	27.9	19.0	51.0	17.4	17.0	13.8	16.6	7.8	63.8
	5	439	1989/09/04	1974/09/22	14.95	F	150.1	42.0	78.6	NIL	NIL	53.9	21.3	9.8	6.4	10.4	7.6	71.5
1	2	440	1986/09/01	1972/11/28	13.76	M	139.7	33.8	72.2	30.8	21.6	54.1	20.0	9.4	5.2	5.8	3.8	67.5
3	2	441	1986/09/01	1967/03/04	19.50	M	158.9	43.3	79.9	31.8	24.2	55.0	20.0	5.9	3.1	4.4	3.3	79.0
	3	441	1987/09/02	1967/03/04	20.50	M	165.3	50.7	83.0	33.4	NIL	54.2	22.7	5.9	3.1	5.2	3.8	82.3
	5	441	1989/09/04	1967/03/04	22.50	M	175.7	67.1	90.4	36.9	27.1	54.7	24.7	6.8	5.0	7.8	4.5	85.3
4	2	442	1986/09/01	1977/12/08	8.73	M	135.1	28.0	70.0	30.1	19.7	53.4	17.5	5.8	3.3	4.4	2.4	65.1
	3	442	1987/09/02	1977/12/08	9.73	M	140.6	31.2	71.0	30.3	NIL	54.0	18.6	5.7	3.8	5.6	5.5	69.6
	4	442	1988/09/01	1977/12/08	10.73	M	144.6	32.9	74.4	30.8	20.3	54.1	19.3	6.9	4.0	5.0	3.1	70.2
	5	442	1989/09/04	1977/12/08	11.74	M	149.1	36.0	73.8	30.5	21.0	53.7	19.8	7.2	6.0	6.1	3.3	75.2
1	2	443	1986/09/01	1971/04/24	15.35	M	154.1	42.5	78.2	32.7	22.3	54.0	21.5	7.4	5.2	7.4	5.8	75.8
2	2	444	1986/09/01	1974/02/04	12.57	F	146.9	39.2	76.0	33.2	22.0	54.8	20.9	9.4	4.4	11.4	4.8	70.9
	3	444	1987/09/01	1974/02/04	13.57	F	149.3	44.6	77.8	35.2	NIL	55.8	22.0	10.6	5.2	NIL	NIL	71.5
3	2	445	1986/09/01	1980/11/20	5.78	M	110.3	17.9	60.4	24.9	16.0	52.3	16.2	3.8	3.0	2.6	2.8	49.9
	3	445	1987/08/31	1980/11/20	6.78	M	117.1	21.0	65.4	26.4	16.8	51.5	15.7	4.4	3.2	4.0	3.0	51.7
	4	445	1988/09/01	1980/11/20	7.78	M	122.6	23.4	66.7	27.7	17.5	52.7	17.2	5.1	3.0	4.5	2.8	55.9
1	2	446	1986/09/01	1978/06/21	8.20	M	115.4	19.3	64.5	25.3	17.4	53.2	15.5	8.4	4.0	4.2	2.8	50.9
1	2	447	1986/09/01	1974/09/30	11.92	M	130.7	36.0	69.2	26.2	18.8	52.4	19.0	8.8	4.4	5.4	4.2	61.5

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
1	2	448	1986/09/01	1977/02/17	9.54	M	137.3	31.6	70.0	31.6	20.2	51.3	17.4	10.0	5.7	5.6	3.8	67.3
1	2	449	1986/09/01	1980/03/13	6.47	M	114.5	18.4	64.7	24.9	17.3	53.2	14.9	4.4	4.0	4.4	4.4	49.8
1	2	450	1986/09/01	1970/10/09	15.90	M	175.1	65.7	87.3	38.4	27.0	56.4	26.2	4.4	4.2	6.4	5.0	87.7
4	2	451	1986/09/01	1975/11/02	10.83	M	148.6	34.1	73.6	30.2	22.7	56.6	19.4	8.8	5.0	7.8	5.0	75.0
	3	451	1987/08/31	1975/11/02	11.83	M	154.1	38.7	77.2	31.5	23.8	55.0	20.0	8.0	3.7	8.1	6.2	76.9
	4	451	1988/09/01	1975/11/02	12.83	M	164.1	46.2	81.9	30.4	25.3	56.4	20.8	5.6	3.0	6.2	4.5	82.2
	5	451	1989/09/04	1975/11/02	13.84	M	172.6	52.7	86.7	35.4	26.4	57.1	22.2	6.2	4.6	9.4	6.3	85.9
1	2	452	1986/09/01	1976/01/02	10.66	M	118.9	20.5	63.2	25.6	16.4	52.3	15.0	4.4	3.7	5.2	3.4	55.7
4	2	453	1986/09/01	1975/07/20	11.12	M	133.7	29.6	70.6	31.2	20.5	53.2	19.0	7.0	4.4	4.4	3.2	63.1
	3	453	1987/08/31	1975/07/20	12.12	M	138.1	35.5	73.4	31.0	21.6	54.9	20.3	10.0	4.0	7.6	4.6	64.6
	4	453	1988/09/01	1975/07/20	13.11	M	143.5	36.4	73.5	31.2	22.0	54.6	19.9	8.1	3.2	5.2	3.6	70.0
	5	453	1989/09/04	1975/07/20	14.13	M	149.2	45.0	77.3	31.3	23.5	54.9	24.0	15.4	9.0	9.2	8.8	71.9
1	2	454	1986/09/01	1971/05/26	15.27	M	152.1	35.5	75.2	33.2	22.5	53.5	19.2	6.6	3.5	5.0	3.7	76.8
4	2	456	1986/09/01	1979/08/28	7.01	F	117.2	20.5	61.0	26.5	18.7	51.3	16.7	7.8	3.6	4.8	3.6	56.2
	3	456	1987/08/31	1979/08/28	8.01	F	123.5	22.5	64.4	27.0	19.4	51.4	16.8	7.7	3.8	5.0	3.2	59.1
	4	456	1988/09/01	1979/08/28	9.01	F	128.1	25.7	66.2	26.4	19.6	51.8	17.6	7.6	3.3	4.9	3.5	61.8
	5	456	1989/09/04	1979/08/28	10.02	F	134.1	28.7	68.5	28.8	20.8	51.9	19.8	8.8	4.9	7.8	4.1	65.5
1	2	458	1986/09/01	1971/11/10	14.81	M	162.2	47.6	82.5	34.3	24.6	53.7	22.0	6.5	4.4	6.0	3.9	79.7
2	2	459	1986/09/01	1977/11/22	8.78	M	130.9	27.0	39.7	29.5	19.5	53.9	17.1	4.0	8.3	3.0	4.4	61.2
	3	459	1987/09/02	1977/11/22	9.78	M	135.3	30.1	72.5	38.0	19.0	53.1	18.3	4.8	2.9	5.0	3.0	62.8
2	2	460	1986/09/01	1976/11/07	9.82	F	127.1	24.7	67.9	25.6	19.5	48.4	16.4	6.2	5.4	5.4	4.8	59.1
	3	460	1987/08/31	1976/11/07	10.81	F	130.4	26.5	68.1	25.7	19.2	49.6	18.8	7.1	4.1	7.8	4.5	62.3
4	2	461	1986/09/01	1977/06/18	9.21	M	147.1	33.6	73.5	33.4	21.2	52.3	19.0	5.5	3.0	4.2	2.9	73.6
	3	461	1987/08/31	1977/06/18	10.20	M	153.9	39.2	76.7	34.3	22.5	52.8	20.9	4.6	3.8	5.2	3.6	77.2
	4	461	1988/09/01	1977/06/18	11.21	M	160.5	42.9	81.5	36.2	22.9	53.3	22.0	4.2	3.2	5.4	4.0	79.0
	5	461	1989/09/04	1977/06/18	12.21	M	165.1	47.2	83.8	37.9	23.8	53.8	23.8	4.6	3.3	5.7	3.6	81.2
1	2	462	1986/09/01	1977/01/24	9.60	F	126.2	27.1	67.5	28.1	19.8	51.5	17.7	8.0	4.6	5.8	3.8	58.7
3	2	463	1986/09/01	1974/12/31	11.67	F	146.7	34.4	75.1	30.6	21.0	48.4	19.4	6.5	2.9	8.2	3.8	71.6
	3	463	1987/08/31	1974/12/31	12.67	F	151.3	41.5	77.9	31.9	22.0	48.8	22.5	6.2	3.4	NIL	NIL	73.4
	4	463	1988/09/01	1974/12/31	13.67	F	155.4	46.7	80.7	32.2	23.6	50.4	23.2	8.9	3.6	9.5	7.2	74.7
4	2	465	1986/09/01	1976/06/02	10.25	F	128.8	40.4	67.2	28.1	18.8	49.7	17.3	6.6	5.6	4.2	3.4	61.6
	3	465	1987/08/31	1976/06/02	11.25	F	134.3	46.0	68.6	30.4	20.2	49.5	18.5	6.8	4.2	4.5	3.5	65.7
	4	465	1988/09/01	1976/06/02	12.25	F	139.1	29.2	71.2	31.1	20.5	50.2	18.2	6.5	3.9	4.6	3.3	67.8
	5	465	1989/09/04	1976/06/02	13.26	F	145.9	32.9	74.4	32.8	21.7	51.5	20.1	7.4	5.8	4.8	3.8	71.5
1	2	466	1986/09/01	1978/03/06	8.49	M	122.6	20.6	66.5	25.8	18.2	51.4	15.2	6.8	3.2	4.0	2.8	56.1

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
1	2	467	1986/09/01	1976/09/03	10.00	M	148.9	33.7	75.0	30.2	22.5	51.2	18.4	5.4	2.8	5.0	3.7	73.9
1	2	468	1986/09/01	1978/06/04	8.24	M	128.4	26.0	69.2	28.2	19.2	54.2	17.4	4.8	4.0	4.6	2.6	59.2
2	2	469	1986/09/01	1973/03/02	13.50	M	145.4	41.1	73.0	34.0	23.3	54.8	20.9	10.8	5.1	6.9	8.2	72.4
	3	469	1987/09/02	1973/03/02	14.50	M	151.1	43.9	74.4	36.2	24.0	54.4	21.1	8.4	3.7	5.6	3.6	76.6
1	2	471	1986/09/01	1971/09/07	14.98	M	153.3	41.0	76.6	33.5	23.2	54.3	20.5	5.8	4.8	5.2	4.6	76.7
2	2	472	1986/09/01	1973/08/06	13.07	F	141.7	42.7	72.7	30.4	23.1	54.6	25.3	26.8	10.8	14.4	10.6	69.0
	3	472	1987/09/02	1973/08/06	14.07	F	145.7	47.1	76.4	31.7	NIL	54.3	26.0	22.0	11.2	NIL	NIL	69.3
2	2	473	1986/09/01	1977/01/31	9.58	F	125.4	24.0	66.8	27.6	19.1	52.9	16.0	9.8	6.2	7.4	5.4	58.6
	3	473	1987/09/02	1977/01/31	10.59	F	129.5	28.7	68.6	29.8	NIL	52.8	18.3	10.4	6.2	NIL	NIL	60.9
1	2	474	1986/09/01	1970/09/23	15.94	F	165.7	64.1	86.1	37.0	26.1	59.0	27.2	20.2	19.2	15.2	9.4	79.6
1	2	475	1986/09/01	1971/12/10	14.73	F	159.8	48.9	80.5	36.0	24.5	55.1	22.2	9.0	5.6	8.8	7.0	79.3
3	2	476	1986/09/01	1971/08/04	15.08	F	162.7	53.9	80.5	33.6	25.0	54.5	24.2	13.0	8.2	10.0	8.6	82.2
	4	476	1988/09/01	1971/08/04	17.08	F	165.1	65.0	83.3	33.2	24.8	54.6	26.5	23.4	6.2	20.6	13.2	81.7
	5	476	1989/09/04	1971/08/04	18.09	F	165.6	63.9	NIL	NIL	NIL	54.1	28.1	17.6	9.6	17.2	13.2	NIL
1	2	477	1986/09/01	1975/03/26	11.44	F	141.7	32.5	73.8	30.1	20.7	52.1	20.0	11.4	6.7	8.5	7.4	67.9
4	2	478	1986/09/01	1970/04/12	16.39	M	162.4	52.0	84.6	35.8	26.4	53.9	22.5	7.5	4.0	6.4	6.5	77.8
	3	478	1987/09/02	1970/04/12	17.39	M	164.9	56.2	86.2	35.8	26.7	53.9	23.5	7.7	5.2	6.9	5.8	78.7
	4	478	1988/09/01	1970/04/12	18.39	M	166.4	59.1	89.0	36.1	27.0	54.5	23.5	8.3	4.6	7.4	5.5	77.4
	5	478	1989/09/04	1970/04/12	19.40	M	166.1	60.1	88.3	36.6	27.0	53.9	23.9	10.0	4.8	7.8	5.5	77.8
4	2	479	1986/09/01	1976/08/24	10.02	F	129.4	24.6	67.4	28.0	19.6	53.0	16.0	7.4	4.7	4.8	5.9	62.0
	3	479	1987/09/02	1976/08/24	11.02	F	134.3	30.8	69.6	30.8	NIL	53.8	18.2	9.0	5.0	NIL	NIL	64.7
	4	479	1988/09/01	1976/08/24	12.02	F	141.5	34.1	74.0	31.7	21.7	54.1	19.4	8.1	4.5	7.6	6.3	67.5
	5	479	1989/09/04	1976/08/24	13.03	F	146.9	41.5	75.1	NIL	NIL	55.2	21.5	11.2	8.1	12.9	7.4	71.8
2	2	480	1986/09/01	1974/10/10	11.89	M	143.5	30.8	71.1	30.8	21.0	51.9	16.3	6.6	3.9	4.7	3.5	72.4
	4	480	1988/09/01	1974/10/10	13.89	M	152.4	38.9	73.8	30.5	21.9	53.8	19.4	7.8	4.1	6.5	4.0	78.6
2	2	481	1986/09/01	1967/05/12	19.31	M	136.1	25.4	70.3	28.6	20.2	51.8	16.2	5.2	3.2	4.0	4.0	65.7
	3	481	1987/08/31	1967/05/12	20.30	M	140.1	27.6	71.3	28.2	20.8	52.2	15.3	4.9	2.6	3.9	2.4	68.7
1	2	482	1986/09/01	1974/12/20	11.70	M	134.6	30.9	70.5	30.4	20.6	55.5	19.8	9.0	4.8	5.9	4.6	64.1
2	2	483	1986/09/01	1973/11/08	12.81	M	144.7	35.2	76.0	31.3	21.3	54.0	20.0	8.8	5.0	7.4	3.8	68.7
	3	483	1987/08/31	1973/11/08	13.81	M	152.5	39.7	78.1	32.9	22.0	52.9	20.7	8.2	4.1	6.1	3.9	74.4
4	2	484	1986/09/01	1978/02/12	8.55	F	131.1	26.2	68.0	25.8	18.7	52.3	16.5	8.6	4.4	4.8	4.0	63.0
	3	484	1987/08/31	1978/02/12	9.55	F	135.8	28.8	70.6	28.2	19.6	51.2	17.2	7.8	3.8	4.8	3.8	65.2
	4	484	1988/09/01	1978/02/12	10.55	F	141.5	31.3	74.0	28.2	20.2	52.3	17.5	6.9	3.4	4.7	3.2	67.5
	5	484	1989/09/04	1978/02/12	11.56	F	148.2	35.0	75.7	29.7	21.2	52.2	18.7	5.8	3.8	4.6	3.4	72.5
1	2	485	1986/09/01	1970/09/22	15.94	F	160.8	60.6	80.6	32.8	35.4	55.0	25.0	9.6	9.2	20.2	19.8	80.2

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
3	2	487	1986/09/01	1976/04/03	10.41	F	148.9	36.9	76.9	33.6	21.9	53.1	21.1	9.6	5.4	8.2	4.8	72.0
	3	487	1987/09/02	1976/04/03	11.42	F	156.1	46.0	80.1	34.4	NIL	54.0	23.3	11.2	6.0	NIL	NIL	75.9
	4	487	1988/09/01	1976/04/03	12.41	F	158.5	55.8	83.9	35.6	25.8	54.3	26.1	19.2	7.4	14.2	9.7	74.6
4	2	488	1986/09/01	1978/08/25	8.02	M	107.1	16.7	57.3	23.2	16.4	51.2	15.5	6.0	4.8	4.2	3.2	49.7
	3	488	1987/08/31	1978/08/25	9.02	M	113.1	18.1	62.4	24.4	17.2	50.3	14.9	5.2	3.2	2.4	3.0	50.6
	4	488	1988/09/01	1978/08/25	10.02	M	199.2	20.8	65.2	25.8	18.0	51.5	15.2	6.0	3.6	4.6	3.0	134.0
	5	488	1989/09/04	1978/08/25	11.03	M	125.3	23.0	65.9	26.2	18.7	51.5	16.6	5.7	3.2	4.5	3.1	59.4
3	2	489	1986/09/01	1974/06/07	12.24	M	148.3	33.8	71.4	31.0	22.4	50.6	17.8	6.0	3.3	4.8	3.2	76.9
	3	489	1987/08/31	1974/06/07	13.23	M	152.1	37.4	74.9	30.4	23.2	51.4	17.8	6.0	3.0	4.8	3.0	77.1
	4	489	1988/09/01	1974/06/07	14.24	M	157.1	39.9	77.2	32.8	23.9	52.2	18.2	4.9	3.4	4.7	3.0	79.8
1	2	490	1986/09/01	1980/07/06	6.16	M	110.2	19.0	61.3	24.2	17.3	51.6	16.2	7.8	4.4	5.0	2.2	48.9
3	2	491	1986/09/01	1971/01/16	15.63	M	164.9	51.1	85.8	36.6	24.2	55.3	24.8	4.6	2.4	5.6	5.0	79.1
	3	491	1987/09/02	1971/01/16	16.63	M	167.5	53.2	87.6	36.8	24.4	55.1	24.6	4.4	3.5	5.5	3.6	79.9
	4	491	1988/09/01	1971/01/16	17.63	M	167.9	54.2	87.0	37.3	24.4	55.1	25.4	4.0	2.6	6.7	4.1	80.9
4	2	492	1986/09/01	1977/10/07	8.90	M	124.1	22.6	65.7	25.6	16.8	52.4	16.7	8.4	4.4	4.2	3.2	58.3
	3	492	1987/08/31	1977/10/07	9.90	M	130.1	25.5	68.9	26.4	17.3	52.6	17.3	8.6	4.1	5.6	3.4	61.1
	4	492	1988/09/01	1977/10/07	10.90	M	134.7	27.7	70.3	27.5	18.1	53.3	18.0	8.0	3.8	5.0	3.6	64.4
	5	492	1989/09/04	1977/10/07	11.91	M	140.1	30.2	72.3	28.1	18.2	53.5	18.9	10.2	6.4	5.1	3.2	67.7
1	2	493	1986/09/01	1979/12/13	6.72	M	106.7	17.6	59.1	23.0	16.0	50.5	15.1	7.2	6.2	5.0	4.0	47.6
2	2	494	1986/09/01	1977/10/06	8.90	M	127.8	24.4	67.5	28.0	18.2	53.0	16.5	6.6	4.0	5.0	4.4	60.3
	3	494	1987/08/31	1977/10/06	9.90	M	133.3	26.6	69.6	28.8	18.7	52.3	16.5	6.2	3.5	4.6	3.5	63.7
2	2	495	1986/09/01	1967/06/26	19.18	M	179.7	67.1	86.1	40.4	26.3	56.5	26.1	5.4	4.1	8.5	4.7	93.6
	4	495	1988/09/01	1967/06/26	21.18	M	181.4	69.9	93.0	40.2	27.2	56.0	26.7	7.3	4.1	9.3	6.1	88.4
3	2	496	1986/09/01	1970/02/06	16.57	F	159.5	50.9	79.4	34.2	24.3	52.4	22.9	12.2	6.2	12.4	11.2	80.1
	3	496	1987/09/01	1970/02/06	17.57	F	162.8	57.0	81.7	34.6	NIL	54.8	24.8	18.7	7.7	NIL	NIL	81.1
	4	496	1988/09/01	1970/02/06	18.57	F	162.9	58.0	82.4	35.7	24.7	53.1	26.1	38.6	6.4	15.6	8.8	80.5
2	2	497	1986/09/01	1974/06/26	12.18	F	148.1	41.7	75.9	32.7	24.0	53.0	21.9	14.4	6.1	8.6	8.3	72.1
	3	497	1987/09/02	1974/06/26	13.19	F	156.5	51.9	80.1	34.5	NIL	53.6	24.2	15.4	7.2	NIL	NIL	76.4
2	2	498	1986/09/01	1970/05/01	16.34	M	164.4	47.0	79.3	36.8	25.2	52.7	21.6	5.0	3.4	6.4	3.3	85.1
	3	498	1987/09/02	1970/05/01	17.34	M	168.3	54.5	83.0	39.0	26.5	53.9	23.8	5.5	3.7	6.2	4.8	85.3
2	2	499	1986/09/01	1973/09/16	12.96	F	160.7	49.4	82.3	33.1	25.4	53.5	22.2	8.0	4.2	10.2	6.8	78.4
	3	499	1987/09/02	1973/09/16	13.96	F	166.1	56.2	86.6	34.7	NIL	54.2	22.3	8.4	4.2	NIL	NIL	79.4
4	2	500	1986/09/01	1979/06/11	7.23	F	105.8	16.3	57.0	23.8	16.8	50.0	15.0	7.2	3.6	4.2	2.4	48.8
	3	500	1987/08/31	1979/06/11	8.22	F	111.2	17.6	60.7	24.8	17.6	50.2	15.9	7.3	3.5	4.4	3.0	50.5
	4	500	1988/09/01	1979/06/11	9.23	F	116.4	20.5	63.2	26.4	18.5	50.4	16.6	7.3	3.3	6.7	4.0	53.2

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	5	500	1989/09/04	1979/06/11	10.23	F	122.8	23.0	65.8	26.8	19.4	50.6	18.9	11.2	4.6	6.8	2.8	57.0
4	2	501	1986/09/01	1966/02/06	20.57	M	167.1	61.4	86.6	38.7	26.0	57.5	29.0	9.6	5.0	12.6	9.4	80.5
	3	501	1987/09/02	1966/02/06	21.57	M	169.5	61.3	89.9	37.1	26.0	57.3	27.7	7.9	4.7	10.9	6.0	79.6
	4	501	1988/09/01	1966/02/06	22.57	M	169.1	60.1	88.5	37.9	25.9	56.6	26.9	6.4	4.3	12.3	6.6	80.6
	5	501	1989/09/04	1966/02/06	23.58	M	169.4	63.8	89.6	37.4	25.8	57.1	27.1	8.3	4.6	11.1	4.7	79.8
1	2	502	1986/09/01	1968/10/26	17.85	M	168.1	58.2	88.3	37.9	24.3	54.0	24.5	8.0	4.4	8.8	5.8	79.7
1	2	503	1986/09/01	1972/04/27	14.35	M	149.3	37.2	74.3	33.3	21.8	55.1	19.1	5.9	3.6	4.8	4.0	75.0
1	2	504	1986/09/01	1967/08/14	19.05	M	176.1	64.2	88.7	41.8	25.6	57.2	26.0	13.5	15.9	18.2	13.9	87.3
1	2	505	1986/09/01	1967/04/10	19.40	F	146.1	50.3	76.3	35.4	24.9	53.2	25.0	14.2	7.6	12.8	8.6	69.7
1	2	506	1986/09/01	1971/06/16	15.21	M	159.6	44.7	81.1	34.7	23.1	55.2	19.7	6.7	4.0	6.4	4.6	78.5
3	2	507	1986/09/01	1973/01/06	13.65	M	165.8	53.6	85.1	38.1	24.4	52.3	22.5	7.8	5.4	7.0	4.2	80.7
	3	507	1987/08/31	1973/01/06	14.65	M	169.9	59.8	88.0	38.8	26.1	54.2	24.9	9.0	4.1	9.1	5.8	81.9
	4	507	1988/09/01	1973/01/06	15.65	M	173.2	65.5	89.6	39.4	26.0	54.7	27.9	8.4	5.2	10.2	5.6	83.6
2	2	508	1986/09/01	1975/07/21	11.12	M	132.1	29.0	70.1	27.9	19.5	54.0	19.2	7.0	3.5	4.8	3.0	62.0
	3	508	1987/09/02	1975/07/21	12.12	M	135.4	31.3	72.0	28.6	19.7	53.6	19.5	7.0	3.5	5.9	2.6	63.4
1	2	509	1986/09/01	1969/04/28	17.35	M	165.1	52.2	82.5	37.2	24.3	55.7	23.7	5.0	4.2	5.8	3.4	82.5
2	2	510	1986/09/01	1980/02/19	6.53	F	114.8	19.2	60.8	23.4	16.6	50.0	16.5	6.2	3.4	3.8	3.2	54.0
	3	510	1987/08/31	1980/02/19	7.53	F	120.1	20.9	63.4	24.8	17.8	50.3	16.9	5.1	3.2	3.8	2.9	56.6
1	2	511	1986/09/01	1972/02/04	14.57	M	159.9	40.8	76.8	36.2	23.7	53.9	19.5	5.2	2.6	5.3	3.0	83.1
4	2	512	1986/09/01	1979/03/05	7.49	F	123.4	29.0	63.9	26.1	18.0	49.1	17.1	5.8	4.2	4.2	4.6	59.5
	3	512	1987/08/31	1979/03/05	8.49	F	130.2	25.8	66.9	28.4	19.4	49.5	18.2	6.2	3.8	4.3	3.5	63.3
	4	512	1988/09/01	1979/03/05	9.49	F	134.9	27.9	70.5	29.4	19.9	49.5	18.4	6.2	4.3	7.2	4.1	64.4
	5	512	1989/09/04	1979/03/05	10.50	F	141.3	30.4	71.8	29.9	20.6	51.0	18.0	5.2	3.0	4.4	2.4	69.5
1	2	513	1986/09/01	1971/11/16	14.79	F	161.3	61.4	83.1	36.6	27.2	56.2	25.9	17.4	9.2	11.6	15.2	78.2
4	2	514	1986/09/01	1975/07/22	11.11	F	146.8	39.2	76.2	30.2	23.2	56.0	23.9	13.2	9.8	11.2	7.8	70.6
	3	514	1987/09/02	1975/07/22	12.12	F	155.3	46.5	80.8	30.7	NIL	55.0	24.9	12.6	7.4	NIL	NIL	74.5
	4	514	1988/09/01	1975/07/22	13.11	F	160.8	50.8	83.4	32.1	25.3	55.3	24.7	9.8	6.7	10.8	5.5	77.4
	5	514	1989/09/04	1975/07/22	14.12	F	163.1	56.5	85.7	32.8	26.0	55.7	26.5	17.4	11.2	16.4	12.0	77.4
4	2	515	1986/09/01	1977/01/01	9.67	F	125.2	24.5	64.9	28.2	19.3	53.3	17.2	7.8	3.2	6.8	4.2	60.3
	3	515	1987/08/31	1977/01/01	10.66	F	131.3	28.9	68.4	29.5	20.1	53.3	19.2	8.4	4.1	7.3	4.8	62.9
	4	515	1988/09/01	1977/01/01	11.67	F	139.2	32.2	73.9	28.7	20.6	53.5	20.3	9.3	3.5	6.5	4.2	65.3
	5	515	1989/09/04	1977/01/01	12.67	F	159.2	47.9	82.1	NIL	NIL	NIL	23.9	9.8	6.4	9.8	8.6	77.1
1	2	516	1986/09/01	1977/02/26	9.51	F	151.8	44.5	79.1	34.8	24.6	52.1	22.3	13.8	9.2	16.0	12.0	72.7
1	2	517	1986/09/01	1977/06/23	9.20	M	131.6	25.5	67.4	27.8	19.0	54.3	16.3	7.6	4.0	5.4	3.6	64.2
4	2	518	1986/09/01	1978/08/17	8.04	M	111.7	18.1	61.4	24.4	15.5	50.1	16.0	10.2	5.0	6.0	4.6	50.3

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	3	518	1987/08/31	1978/08/17	9.04	M	116.5	19.3	63.0	25.6	15.8	49.4	15.7	9.3	5.7	6.4	3.6	53.5
	4	518	1988/09/01	1978/08/17	10.04	M	121.4	21.7	64.7	26.9	17.1	50.6	16.1	7.0	4.1	4.7	2.9	56.7
	5	518	1989/09/04	1978/08/17	11.05	M	126.1	23.8	66.8	26.8	16.9	50.4	16.5	7.3	4.7	5.9	3.1	59.3
2	2	519	1986/09/01	1978/10/16	7.88	F	125.3	22.0	67.1	24.6	17.6	50.4	16.0	8.2	3.6	4.2	3.2	58.2
	3	519	1987/08/31	1978/10/16	8.87	F	132.9	24.3	67.8	28.6	18.5	50.9	16.6	7.0	3.5	5.1	3.1	65.1
1	2	520	1986/09/01	1969/12/20	16.70	F	152.2	49.3	79.4	34.4	25.3	55.5	23.7	10.6	5.0	9.7	6.4	72.8
1	2	521	1986/09/01	1970/03/25	16.44	F	164.8	57.7	82.1	36.3	24.6	55.5	25.8	16.4	6.5	10.4	13.8	82.7
1	2	522	1986/09/01	1969/06/14	17.22	F	159.8	54.5	82.8	31.4	24.8	54.3	24.8	11.2	5.2	12.8	10.0	77.0
1	2	523	1986/09/01	1972/12/29	13.67	F	149.9	36.8	74.4	30.4	23.8	52.8	20.0	10.5	6.0	7.7	4.3	75.5
1	2	524	1986/09/01	1973/01/19	13.62	F	147.6	40.4	73.4	32.5	23.4	54.1	21.1	14.4	6.2	10.4	4.8	74.2
2	2	525	1986/09/01	1969/08/13	17.05	F	145.8	43.1	79.9	32.2	23.6	52.8	22.3	14.6	11.0	13.8	8.8	65.9
	3	525	1987/09/02	1969/08/13	18.05	F	146.1	48.4	80.2	32.4	NIL	51.3	23.3	14.2	8.2	NIL	NIL	65.9
4	2	526	1986/09/01	1974/09/27	11.93	F	144.9	35.8	75.8	32.0	22.1	53.8	20.2	11.8	7.8	7.2	4.8	69.1
	3	526	1987/09/02	1974/09/27	12.93	F	151.6	43.3	79.3	31.9	NIL	53.8	22.3	9.0	6.6	NIL	NIL	72.3
	4	526	1988/09/01	1974/09/27	13.93	F	155.1	45.8	82.4	34.2	23.4	53.9	23.5	10.4	6.9	7.7	6.8	72.7
	5	526	1989/09/04	1974/09/27	14.94	F	155.7	47.4	82.4	33.9	24.0	53.5	25.0	12.0	7.2	10.2	5.4	73.3
3	2	528	1986/09/01	1968/05/04	18.33	F	171.5	91.5	87.8	41.1	59.6	59.0	32.0	15.6	9.3	27.6	24.8	83.7
	4	528	1988/09/01	1968/05/04	20.33	F	171.6	93.2	91.5	37.2	28.0	56.3	31.8	24.3	14.1	27.9	23.6	80.1
	5	528	1989/09/04	1968/05/04	21.34	F	171.8	98.8	90.6	39.5	31.9	56.9	34.2	27.2	16.6	31.4	28.9	81.2
3	2	529	1986/09/01	1980/06/11	6.23	F	113.6	22.2	61.1	26.1	18.2	53.8	17.6	10.2	6.4	7.2	5.2	52.5
	3	529	1987/08/31	1980/06/11	7.22	F	118.1	24.2	63.9	21.6	18.4	52.3	17.9	9.6	4.9	6.7	4.9	54.2
	5	529	1989/09/04	1980/06/11	9.23	F	128.6	29.4	69.8	28.0	20.0	53.5	20.4	11.0	5.6	7.6	4.4	58.8
1	2	531	1986/09/01	1970/07/16	16.13	M	171.1	57.1	88.9	37.8	25.5	54.5	24.9	9.0	7.6	7.0	5.2	82.1
1	2	532	1986/09/01	1975/04/15	11.38	F	136.1	29.7	69.9	29.8	20.5	51.9	18.0	8.8	6.0	6.4	5.2	66.1
4	2	533	1986/09/01	1975/09/01	11.00	F	153.5	32.4	78.3	33.3	22.2	52.5	17.5	6.0	3.8	5.2	4.4	75.2
	3	533	1987/08/31	1975/09/01	12.00	F	147.9	37.9	75.3	32.3	23.2	50.2	21.5	11.4	4.4	8.4	5.0	72.6
	4	533	1988/09/01	1975/09/01	13.00	F	165.7	44.5	85.1	35.7	24.2	53.3	20.6	6.4	4.0	6.8	4.1	80.6
	5	533	1989/09/04	1975/09/01	14.01	F	168.8	53.1	85.2	NIL	NIL	55.2	23.4	19.8	6.2	12.4	10.2	83.6
1	2	534	1986/09/01	1980/02/11	6.55	M	115.9	20.2	63.0	23.0	16.9	53.0	17.2	8.0	3.4	6.0	3.4	52.9
2	2	536	1986/09/01	1969/05/15	17.30	F	154.2	56.1	82.9	36.4	26.3	53.5	24.2	15.3	9.3	18.6	13.9	71.3
	5	536	1989/09/05	1969/05/15	20.31	F	159.1	46.9	82.6	34.0	25.6	53.3	20.8	10.6	5.2	7.2	6.0	76.4
1	2	537	1986/09/01	1979/04/21	7.37	F	121.8	19.3	63.8	24.1	19.0	48.4	15.3	4.4	3.2	4.4	3.0	58.0
1	2	539	1986/09/01	1978/12/17	7.71	F	122.4	22.1	63.9	25.3	18.2	50.5	14.7	6.0	5.2	4.2	3.6	58.5
4	2	540	1986/09/01	1972/04/02	14.42	F	135.6	29.8	69.2	28.3	19.6	50.3	19.4	7.0	5.4	7.8	5.2	66.4
	3	540	1987/08/31	1972/04/02	15.41	F	140.4	34.6	71.5	30.6	20.8	50.8	21.0	7.8	4.8	7.0	5.2	68.9

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	540	1988/09/01	1972/04/02	16.42	F	145.2	36.9	74.2	29.5	21.7	51.5	20.0	7.0	3.4	7.1	4.6	71.0
	5	540	1989/09/04	1972/04/02	17.43	F	151.9	46.0	77.6	32.3	23.2	51.3	23.2	8.2	5.8	8.4	5.2	74.3
1	2	541	1986/09/01	1970/01/03	16.66	M	159.6	48.5	80.1	36.0	23.8	55.5	21.0	5.4	3.6	5.7	3.8	79.5
1	2	542	1986/09/01	1980/07/03	6.16	M	106.5	16.3	60.1	22.2	14.9	49.8	15.7	8.8	5.2	4.2	3.6	46.4
1	2	543	1986/09/01	1967/04/26	19.35	M	172.2	59.5	85.8	36.8	27.3	55.2	24.1	7.3	3.2	7.4	3.7	86.4
1	2	544	1986/09/01	1971/06/08	15.23	F	168.4	54.7	86.1	37.4	25.5	57.4	22.1	9.2	6.6	11.6	4.9	82.3
3	2	545	1986/09/01	1978/08/03	8.08	M	118.6	22.0	66.4	26.8	17.2	51.8	16.8	5.0	3.0	4.8	2.6	52.2
	3	545	1987/08/31	1978/08/03	9.08	M	123.4	23.5	67.3	27.5	18.0	51.1	16.9	6.0	4.2	5.0	3.0	56.1
	4	545	1988/09/01	1978/08/03	10.08	M	128.5	26.4	70.2	27.8	18.6	52.0	17.1	5.2	2.7	4.2	2.6	58.3
3	2	546	1986/09/01	1973/11/07	12.82	F	156.1	42.0	80.2	32.1	21.2	58.7	18.7	7.0	3.4	7.1	5.2	75.8
	3	546	1987/08/31	1973/11/07	13.81	F	160.6	51.3	81.9	33.0	24.4	52.9	22.5	12.8	4.3	NIL	NIL	78.7
	4	546	1988/09/01	1973/11/07	14.82	F	162.6	54.8	84.4	30.5	25.4	53.4	23.1	13.3	4.5	9.9	6.1	78.2
3	2	547	1986/09/01	1971/07/24	15.11	F	164.6	47.8	85.9	36.6	26.4	53.0	20.4	7.4	4.0	7.7	8.4	78.7
	3	547	1987/09/02	1971/07/24	16.11	F	166.6	52.7	88.4	37.4	NIL	53.2	21.4	9.2	5.2	NIL	NIL	78.2
	4	547	1988/09/01	1971/07/24	17.11	F	168.1	53.1	87.7	37.0	26.1	53.4	22.3	11.2	7.8	9.6	5.6	80.4
1	2	548	1986/09/01	1980/02/19	6.53	M	120.5	24.0	65.6	24.2	17.1	51.0	17.4	5.4	3.4	5.0	3.8	54.9
1	2	549	1986/09/01	1970/03/26	16.44	M	161.6	50.0	82.3	35.8	25.0	53.1	24.2	7.2	4.3	8.9	4.5	79.3
1	2	550	1986/09/01	1972/09/12	13.97	M	137.7	34.7	71.9	31.4	20.8	54.6	19.3	8.8	5.8	6.2	5.4	65.8
1	2	551	1986/09/01	1969/04/10	17.40	M	173.1	56.5	88.3	38.8	26.4	58.8	23.0	5.0	3.3	6.5	3.2	84.7
3	2	552	1986/09/01	1975/09/20	10.95	M	131.8	28.8	66.0	29.8	20.2	52.1	18.8	6.0	3.8	5.6	3.4	65.8
	3	552	1987/08/31	1975/09/20	11.95	M	135.4	31.6	69.7	29.2	21.0	51.8	19.5	7.2	4.0	6.8	4.2	65.7
	5	552	1989/09/04	1975/09/20	13.96	M	147.5	37.9	72.8	30.2	21.9	52.4	21.6	6.8	9.4	8.4	3.8	74.7
2	2	553	1986/09/01	1971/07/08	15.15	F	163.9	62.0	81.7	36.0	24.2	60.5	25.7	14.4	10.0	13.6	12.2	82.2
	4	553	1988/09/01	1971/07/08	17.15	F	164.8	72.2	83.8	33.2	25.9	60.6	26.9	22.7	9.0	18.7	13.0	81.0
3	2	554	1986/09/01	1968/01/09	18.64	M	158.1	45.1	78.2	35.2	23.0	55.0	22.3	4.0	2.6	4.8	3.6	79.9
	3	554	1987/09/02	1968/01/09	19.65	M	164.1	49.1	81.3	35.2	23.4	54.8	22.7	4.7	2.8	5.2	4.2	82.8
	4	554	1988/09/01	1968/01/09	20.64	M	167.7	55.7	85.6	37.0	24.3	55.4	24.3	5.4	3.4	5.0	3.3	82.1
1	2	555	1986/09/01	1968/01/04	18.66	M	160.9	61.8	84.2	38.2	24.7	55.6	27.0	6.7	4.0	8.4	3.0	76.7
4	2	556	1986/09/01	1973/04/03	13.41	M	130.4	26.7	67.7	30.2	20.2	50.5	19.0	6.5	2.7	4.5	3.0	62.7
	3	556	1987/09/02	1973/04/03	14.42	M	134.2	29.6	71.1	30.8	19.2	51.1	20.3	5.9	3.5	5.2	3.6	63.1
	4	556	1988/09/01	1973/04/03	15.41	M	140.1	34.0	72.8	32.5	20.1	51.7	21.0	6.8	3.9	5.7	3.6	67.3
	5	556	1989/09/04	1973/04/03	16.42	M	149.5	40.7	76.8	34.8	21.6	52.0	22.9	6.5	3.5	6.2	4.1	72.7
1	2	557	1986/09/01	1968/05/13	18.30	M	163.5	60.7	84.1	41.4	24.3	56.2	26.2	5.8	3.6	7.0	4.4	79.4
3	2	558	1986/09/01	1972/07/26	14.10	F	150.9	42.7	76.9	31.3	22.3	53.9	20.7	9.0	5.8	7.2	6.8	74.0
	4	558	1988/09/01	1972/07/26	16.10	F	156.2	51.0	79.7	33.0	23.8	55.0	21.7	12.4	6.5	7.3	8.0	76.5

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	5	558	1989/09/04	1972/07/26	17.11	F	156.7	53.2	80.4	NIL	NIL	53.9	23.7	16.4	8.0	12.4	8.4	76.3
4	2	559	1986/09/01	1973/02/28	13.51	F	134.9	20.0	71.9	29.2	19.2	49.9	17.5	6.6	4.0	4.8	3.4	63.0
	3	559	1987/08/31	1973/02/28	14.50	F	137.3	32.8	71.6	30.8	20.2	51.5	19.4	6.8	3.4	5.6	3.4	65.7
	4	559	1988/09/01	1973/02/28	15.51	F	141.8	36.8	73.8	32.2	21.0	52.0	21.0	7.8	3.2	6.7	3.6	68.0
	5	559	1989/09/04	1973/02/28	16.52	F	145.2	41.9	76.9	32.6	22.0	52.4	22.0	8.6	4.0	6.4	4.3	68.3
2	2	560	1986/09/01	1972/02/03	14.58	F	150.1	41.1	77.0	32.1	21.6	52.0	21.3	13.8	8.6	9.0	8.4	73.1
	3	560	1987/09/02	1972/02/03	15.58	F	154.7	48.0	80.0	34.1	NIL	51.9	24.0	15.4	10.6	NIL	NIL	74.7
1	2	561	1986/09/01	1969/12/01	16.75	F	163.1	64.0	81.6	34.5	25.6	53.8	28.2	20.2	8.4	22.3	18.6	81.4
4	2	562	1986/09/01	1975/11/04	10.83	M	134.3	30.5	72.5	29.4	20.6	55.2	19.1	6.8	3.8	5.2	4.6	61.8
	3	562	1987/08/31	1975/11/04	11.82	M	137.5	33.2	75.2	28.4	20.9	55.9	20.6	7.0	3.6	7.2	4.6	62.3
	4	562	1988/09/01	1975/11/04	12.83	M	143.1	35.3	77.1	29.1	21.2	55.1	20.9	6.1	3.3	5.4	3.9	65.9
	5	562	1989/09/04	1975/11/04	13.83	M	149.2	41.0	80.1	31.1	22.7	55.3	23.0	7.0	3.8	7.1	4.2	69.1
3	2	563	1986/09/01	1976/11/06	9.82	M	128.6	24.1	69.0	29.5	17.9	51.8	14.8	5.4	5.2	5.0	4.2	59.6
	3	563	1987/08/31	1976/11/06	10.82	M	134.6	26.7	72.1	30.5	18.6	50.6	15.3	5.8	3.4	4.8	4.0	62.5
	4	563	1988/09/01	1976/11/06	11.82	M	139.4	28.6	72.2	32.0	19.2	52.1	16.2	5.0	3.5	5.0	4.1	67.2
3	2	564	1986/09/01	1976/04/20	10.37	M	144.2	36.8	71.9	31.8	21.0	50.8	20.0	10.8	5.2	5.4	5.0	72.3
	3	564	1987/08/31	1976/04/20	11.36	M	149.1	39.7	73.6	33.4	21.6	50.9	19.6	10.8	5.1	6.3	4.6	75.5
	4	564	1988/09/01	1976/04/20	12.37	M	153.4	40.6	74.6	34.3	22.4	51.5	19.9	8.6	4.0	6.7	4.2	78.8
1	2	565	1986/09/01	1977/12/31	8.67	M	130.6	29.0	69.7	28.1	19.8	52.4	18.7	7.0	4.2	6.4	5.2	60.9
1	2	566	1986/09/01	1971/01/15	15.63	F	144.3	36.9	74.8	30.4	23.0	52.0	19.9	7.7	2.9	8.6	4.6	69.5
3	2	567	1986/09/01	1974/05/07	12.32	F	142.2	29.1	69.9	25.0	20.3	50.8	17.0	8.5	4.4	5.3	5.2	72.3
	3	567	1987/09/02	1974/05/07	13.32	F	149.6	37.0	74.9	30.8	NIL	52.3	19.3	9.2	6.0	NIL	NIL	74.7
	4	567	1988/09/01	1974/05/07	14.32	F	154.9	42.8	77.7	31.8	23.1	52.6	20.8	11.6	7.4	4.0	6.2	77.2
4	2	568	1986/09/01	1975/05/05	11.33	F	146.4	38.3	75.3	33.2	23.3	54.9	20.2	6.5	3.3	5.9	2.9	71.1
	3	568	1987/09/01	1975/05/05	11.33	F	152.8	45.7	79.3	35.0	NIL	54.6	22.4	8.5	4.4	NIL	NIL	73.5
	4	568	1988/09/01	1975/05/05	13.33	F	156.9	52.2	82.2	35.7	25.2	55.0	24.3	8.2	4.5	10.3	4.3	74.7
	5	568	1989/09/04	1975/05/05	14.33	F	159.4	59.1	83.1	36.2	25.8	55.5	26.1	14.6	6.5	11.4	8.8	76.3
4	2	569	1986/09/01	1974/03/06	12.49	M	136.3	29.6	70.3	28.6	20.3	54.0	17.9	9.6	4.0	4.8	4.0	66.0
	3	569	1987/08/31	1974/03/06	13.49	M	143.1	32.1	73.0	29.1	20.9	52.6	18.3	9.4	4.1	5.3	3.0	70.0
	4	569	1988/09/01	1974/03/06	14.49	M	148.2	34.6	75.7	29.6	21.7	54.0	17.1	5.5	3.0	4.3	2.9	72.5
	5	569	1989/09/04	1974/03/06	15.50	M	156.6	41.1	80.6	32.2	22.6	54.0	19.9	7.4	4.4	5.4	3.4	76.0
1	2	570	1986/09/01	1980/05/01	6.34	M	111.3	18.8	60.1	24.5	16.5	54.0	16.0	7.8	4.2	5.2	3.6	51.2
3	2	571	1986/09/01	1980/05/08	6.32	M	101.4	17.4	58.1	23.0	16.8	51.3	17.0	6.8	3.8	6.6	2.8	43.3
	3	571	1987/08/31	1980/05/08	7.32	M	108.1	19.0	61.4	24.4	17.3	50.7	17.4	6.4	2.6	5.8	3.8	46.6
	4	571	1988/09/01	1980/05/08	8.32	M	112.8	21.6	63.0	24.6	18.1	51.8	17.1	5.6	3.0	5.2	2.6	49.8

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
4	2	572	1986/09/01	1971/12/15	14.71	M	150.4	39.5	75.9	33.2	23.4	53.9	19.7	4.7	3.0	5.2	3.4	74.5
	3	572	1987/09/02	1971/12/15	15.72	M	156.1	43.2	78.8	34.1	23.9	54.1	21.2	5.8	3.1	6.0	4.1	77.2
	4	572	1988/09/01	1971/12/15	16.71	M	162.3	46.7	82.0	34.7	24.7	58.3	20.0	7.2	3.4	5.4	6.2	80.3
	5	572	1989/09/04	1971/12/15	17.72	M	170.7	55.3	85.6	37.8	26.3	54.8	23.0	5.8	3.4	6.7	4.5	85.1
2	2	573	1986/09/01	1980/07/07	6.15	M	114.5	20.0	62.8	24.6	17.3	52.5	16.3	7.0	4.4	4.6	4.8	51.7
	3	573	1987/08/31	1980/07/07	7.15	M	121.6	22.1	65.0	26.1	18.1	52.4	15.8	6.6	4.5	5.6	3.0	56.6
1	2	574	1986/09/01	1977/11/16	8.79	F	129.5	25.9	66.4	28.4	20.1	50.0	16.1	10.6	6.8	6.8	6.8	63.1
1	2	575	1986/09/01	1976/11/07	9.82	F	130.1	30.9	66.9	29.2	20.5	53.9	21.0	10.4	6.3	7.7	5.8	63.1
1	2	577	1986/09/01	1973/03/14	13.47	F	160.9	47.8	79.6	36.4	25.6	54.1	22.0	10.6	3.8	7.8	5.2	81.3
4	2	578	1986/09/01	1974/12/10	11.73	F	154.4	40.7	76.5	34.1	24.2	53.3	22.9	8.8	5.2	8.4	6.8	77.9
	3	578	1987/09/01	1974/12/10	12.73	F	158.1	45.4	79.5	34.9	NIL	53.3	21.9	9.8	5.1	NIL	NIL	78.6
	4	578	1988/09/01	1974/12/10	13.73	F	159.3	50.9	81.5	34.5	25.1	53.1	23.7	7.8	4.4	8.7	6.6	77.8
	5	578	1989/09/04	1974/12/10	14.73	F	160.2	52.2	82.3	35.5	25.8	53.6	23.8	13.8	6.4	9.8	7.8	77.9
1	2	579	1986/09/01	1971/06/01	15.25	F	154.1	41.7	78.4	32.4	23.1	53.0	20.4	9.4	7.4	9.2	7.2	75.6
2	2	580	1986/09/01	1974/11/04	11.83	F	127.4	22.9	65.5	27.1	18.3	52.0	15.7	7.2	5.6	7.8	5.4	61.9
	3	580	1987/08/31	1974/11/04	12.82	F	131.8	26.7	68.4	27.8	19.6	51.6	19.4	8.4	4.6	6.8	5.4	63.4
4	2	581	1986/09/01	1979/01/02	7.66	F	123.8	23.1	66.9	26.2	18.6	50.5	18.0	14.2	7.0	7.0	5.0	56.9
	3	581	1987/08/31	1979/01/02	8.66	F	129.7	26.7	69.2	26.6	18.3	49.0	18.4	14.4	8.6	NIL	NIL	60.5
	4	581	1988/09/01	1979/01/02	9.66	F	135.3	29.6	71.9	28.2	19.3	50.4	18.1	11.4	6.8	8.8	5.6	63.4
	5	581	1989/09/04	1979/01/02	10.67	F	142.6	31.2	74.9	27.4	19.6	50.1	18.8	13.2	7.6	7.8	5.8	67.7
4	2	582	1986/09/01	1973/03/14	13.47	M	148.9	34.4	72.3	32.6	21.4	57.2	20.2	6.2	3.5	6.0	2.8	76.6
	3	582	1987/09/02	1973/03/14	14.47	M	152.7	37.9	74.3	33.3	21.8	57.4	19.6	7.0	4.0	6.2	3.6	78.4
	4	582	1988/09/01	1973/03/14	15.47	M	157.1	38.7	76.0	33.9	21.7	57.4	20.5	6.1	3.7	5.0	3.5	81.0
	5	582	1989/09/04	1973/03/14	16.48	M	160.6	42.1	78.4	34.6	21.6	57.7	21.2	7.9	5.0	6.4	3.6	82.2
1	2	583	1986/09/01	1971/02/17	15.54	M	162.6	56.8	84.7	35.9	24.2	59.3	25.4	11.0	7.4	9.9	6.0	77.9
1	2	584	1986/09/01	1976/11/03	9.83	M	124.1	24.4	67.1	26.4	19.2	54.2	16.3	7.2	3.8	4.4	2.8	56.9
1	2	585	1986/09/01	1977/03/05	9.49	M	114.5	19.9	61.2	24.8	16.4	51.2	16.4	9.8	4.8	5.0	3.4	53.3
2	2	586	1986/09/01	1980/01/23	6.61	M	115.1	19.9	63.1	26.2	17.8	55.0	16.7	5.8	4.0	4.4	3.6	52.0
	3	586	1987/08/31	1980/01/23	7.60	M	119.4	21.8	65.1	26.5	18.5	54.9	15.9	6.0	3.8	4.2	3.1	54.3
1	2	587	1986/09/01	1977/03/06	9.49	M	132.6	25.3	67.4	28.0	18.7	52.0	16.1	7.4	6.0	5.2	3.6	65.2
1	2	588	1986/09/01	1972/11/28	13.76	F	154.2	49.1	80.6	33.8	24.9	57.4	23.5	11.2	7.2	12.0	9.0	73.6
4	2	589	1986/09/01	1977/10/27	8.85	F	127.1	35.8	65.6	27.1	18.3	53.0	17.9	11.4	8.6	6.8	5.2	61.5
	3	589	1987/08/31	1977/10/27	9.84	F	132.2	29.0	67.5	29.5	19.6	52.9	21.0	13.6	7.5	9.4	6.8	64.7
	4	589	1988/09/01	1977/10/27	10.85	F	138.5	33.2	71.2	29.4	19.5	52.7	21.0	11.1	6.7	8.8	5.6	67.3
	5	589	1989/09/04	1977/10/27	11.86	F	144.4	36.5	74.0	30.0	20.4	53.0	21.3	10.2	5.6	6.6	7.2	70.4

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
3	2	590	1986/09/01	1976/07/05	10.16	M	135.1	25.4	71.1	29.2	20.8	54.5	17.3	7.6	3.4	5.4	4.4	64.0
	3	590	1987/08/31	1976/07/05	11.16	M	140.6	32.0	72.2	29.7	20.8	52.3	18.1	8.2	4.1	6.0	3.6	68.4
	4	590	1988/09/01	1976/07/05	12.16	M	146.8	36.0	75.5	31.2	22.3	54.8	18.6	6.4	3.0	5.4	3.5	71.3
4	2	591	1986/09/01	1972/01/16	14.63	F	142.6	37.2	77.3	31.1	23.9	54.0	21.9	7.8	3.6	9.2	7.1	65.3
	3	591	1987/09/01	1972/01/16	15.63	F	144.9	44.9	79.3	31.9	NIL	54.9	24.0	17.9	4.9	NIL	NIL	65.6
	4	591	1988/09/02	1972/01/16	16.63	F	145.8	51.6	80.9	23.4	25.3	54.9	29.5	26.4	6.8	38.6	14.2	64.9
	5	591	1989/09/04	1972/01/16	17.63	F	145.3	52.1	80.3	32.4	25.9	54.7	27.2	23.0	12.4	25.2	12.2	65.0
1	2	592	1986/09/01	1976/05/09	10.32	F	128.2	38.5	70.1	25.3	19.3	50.9	17.9	7.6	5.0	5.6	4.6	58.1
2	2	593	1986/09/01	1972/10/02	13.92	M	149.2	39.6	73.4	31.6	22.5	58.6	20.6	10.7	5.5	10.1	5.1	75.8
	5	593	1989/09/04	1972/10/02	16.92	M	168.3	60.0	84.9	36.7	25.9	58.5	24.2	14.5	6.1	13.4	5.8	83.5
1	2	594	1986/09/01	1971/01/30	15.59	M	154.4	45.8	78.9	34.0	23.8	54.4	20.5	5.2	4.7	5.8	4.3	75.5
1	2	595	1986/09/01	1971/10/10	14.89	F	161.1	59.2	81.6	35.9	24.2	57.3	25.3	16.5	7.0	11.4	9.4	79.4
1	2	596	1986/09/01	1976/02/21	10.53	F	117.2	20.0	62.7	25.4	17.4	49.2	17.2	8.8	4.1	5.3	3.8	54.5
3	2	597	1986/09/01	1977/03/30	9.43	M	124.4	21.5	65.9	25.8	16.7	51.0	17.2	6.2	4.4	4.4	3.6	58.5
	3	597	1987/08/31	1977/03/30	10.42	M	130.6	24.4	67.8	26.7	17.7	49.5	18.0	9.4	3.4	5.2	3.0	62.8
	5	597	1989/09/04	1977/03/30	12.43	M	140.2	29.6	72.0	28.7	18.8	50.8	19.5	6.3	3.3	5.3	3.6	68.2
1	2	598	1986/09/01	1972/03/06	14.49	M	147.1	41.2	76.9	33.6	22.3	55.3	20.3	8.4	4.8	6.8	4.0	70.2
4	2	599	1986/09/01	1969/03/07	17.49	M	172.1	59.9	89.2	36.6	26.6	55.5	23.2	3.8	3.0	6.2	4.6	82.8
	3	599	1987/08/31	1969/03/07	18.49	M	173.1	52.2	91.9	36.9	26.4	55.3	22.4	5.8	3.4	7.2	4.8	81.1
	4	599	1988/09/01	1969/03/07	19.49	M	173.3	64.5	91.5	36.9	26.5	54.9	23.3	5.2	3.4	8.0	3.7	81.8
	5	599	1989/09/04	1969/03/07	20.50	M	173.8	65.9	90.6	37.4	26.9	54.7	23.4	5.8	4.0	8.0	3.6	83.2
3	2	600	1986/09/01	1970/10/29	15.84	M	163.8	48.7	79.2	35.2	23.9	56.0	22.2	4.0	2.8	5.5	3.3	84.6
	4	600	1988/09/02	1970/10/29	17.84	M	169.6	58.7	82.6	37.9	25.2	56.1	24.1	5.9	3.7	7.2	4.8	87.0
	5	600	1989/09/04	1970/10/29	18.85	M	170.7	58.6	86.2	38.0	25.7	56.4	25.7	5.9	3.9	8.6	4.0	84.5
3	2	601	1986/09/01	1974/03/12	12.47	M	134.2	27.5	70.4	27.6	20.3	53.8	17.5	6.2	3.0	3.9	3.5	63.8
	3	601	1987/09/02	1974/03/12	13.48	M	138.4	30.0	71.8	30.1	20.6	52.0	16.0	6.0	3.4	4.6	3.4	66.6
	5	601	1989/09/04	1974/03/12	15.48	M	149.5	36.9	76.6	30.6	22.0	53.6	19.0	7.0	4.3	5.0	3.4	72.9
1	2	602	1986/09/01	1967/11/10	18.81	M	163.1	55.6	81.6	23.6	25.6	55.5	27.7	6.8	4.2	8.2	5.0	81.4
1	2	603	1986/09/01	1975/06/12	11.22	M	137.4	28.7	71.0	30.2	21.3	52.6	16.4	6.8	3.4	4.8	4.0	66.4
1	2	604	1986/09/01	1976/09/17	9.96	F	133.1	27.4	68.9	26.7	20.1	51.1	18.0	6.4	4.0	5.0	4.2	64.2
4	2	605	1986/09/01	1978/09/02	8.00	F	129.7	24.3	67.0	28.5	19.0	49.5	15.9	6.4	4.4	4.4	3.6	62.7
	3	605	1987/08/31	1978/09/02	9.00	F	135.4	27.4	68.9	29.3	21.0	49.8	17.9	7.5	6.8	5.8	3.8	66.5
	4	605	1988/09/01	1978/09/02	9.99	F	144.2	33.3	74.0	28.5	21.4	50.8	19.6	7.7	4.1	4.6	5.8	70.2
	5	605	1989/09/04	1978/09/02	11.01	F	148.4	38.3	76.8	33.3	23.2	53.2	21.8	10.9	6.4	6.4	5.7	71.6
2	2	606	1986/09/01	1971/10/02	14.92	M	157.6	44.5	79.5	34.3	23.6	52.4	23.5	5.6	4.0	5.8	3.8	78.1

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	606	1988/09/02	1971/10/02	16.92	M	162.5	47.0	82.4	35.6	24.7	52.4	23.3	5.4	3.1	6.3	4.1	80.1
1	2	607	1986/09/01	1970/10/27	15.85	F	154.5	55.4	80.0	36.0	26.6	56.2	26.7	22.4	7.0	17.8	10.2	74.5
1	2	608	1986/09/01	1970/04/22	16.36	M	168.9	52.9	85.1	37.5	24.8	55.0	23.2	6.9	4.2	7.6	3.9	83.8
1	2	609	1986/09/01	1968/07/10	18.15	M	158.4	51.8	80.3	38.8	23.1	54.0	23.9	4.8	5.4	8.2	4.0	78.1
3	2	610	1986/09/01	1977/07/20	9.12	M	140.9	32.3	71.1	30.8	20.6	52.0	17.2	8.0	3.2	4.8	3.5	69.8
	3	610	1987/08/31	1977/07/20	10.12	M	144.2	34.4	74.4	30.3	21.1	52.5	18.5	9.8	3.6	7.1	3.2	69.8
	4	610	1988/09/01	1977/07/20	11.12	M	151.1	43.8	78.4	32.3	22.2	54.5	22.0	7.7	3.5	6.0	3.7	72.6
4	2	611	1986/09/01	1978/12/02	7.75	M	124.1	25.5	65.2	26.3	18.0	53.0	18.0	6.4	3.2	5.6	4.8	58.8
	3	611	1987/08/31	1978/12/02	8.75	M	130.1	27.8	69.3	27.8	18.8	52.6	18.9	7.6	4.2	7.5	4.3	60.7
	4	611	1988/09/01	1978/12/02	9.75	M	135.2	31.0	72.7	28.2	19.1	53.0	18.7	6.3	3.0	5.6	3.4	62.5
	5	611	1989/09/04	1978/12/02	10.76	M	140.9	32.8	74.5	29.5	19.6	53.2	19.5	6.4	3.8	5.2	4.0	66.4
3	2	612	1986/09/01	1974/01/15	12.63	M	140.1	33.6	71.3	31.0	20.6	52.3	18.4	5.1	4.0	4.4	3.6	68.8
	3	612	1987/08/31	1974/01/15	13.63	M	144.3	35.2	74.0	31.6	21.1	51.6	19.5	6.0	3.4	5.6	3.2	70.3
	5	612	1989/09/04	1974/01/15	15.64	M	160.3	47.6	83.4	35.2	23.7	53.0	22.5	4.5	3.2	5.3	3.2	76.9
4	2	613	1986/09/01	1975/05/25	11.27	M	140.3	32.3	74.3	30.6	20.3	52.7	19.0	7.2	3.8	5.0	3.6	66.0
	3	613	1987/08/31	1975/05/25	12.27	M	144.1	34.5	77.5	31.3	20.9	52.9	19.1	7.2	3.6	5.2	3.8	66.6
	4	613	1988/09/02	1975/05/25	13.27	M	148.5	37.5	78.0	31.1	21.1	53.5	20.6	6.9	3.3	4.5	2.8	70.5
	5	613	1989/09/05	1975/05/25	14.28	M	153.4	40.4	79.9	33.1	22.0	53.0	21.4	6.8	4.6	6.6	3.8	76.5
1	2	614	1986/09/01	1977/06/02	9.25	M	117.7	20.2	62.7	25.7	17.8	50.8	15.6	6.2	4.2	5.8	2.8	55.0
2	2	615	1986/09/01	1980/06/11	6.23	F	107.3	17.5	59.7	23.0	16.5	51.4	16.2	7.8	4.2	6.8	6.6	47.6
	3	615	1987/08/31	1980/06/11	7.22	F	113.7	20.0	61.0	24.7	17.4	51.7	16.6	8.4	6.2	6.4	5.4	52.7
3	2	616	1986/09/01	1969/06/24	17.19	F	166.9	52.1	81.7	34.6	26.5	53.4	25.1	10.6	5.4	12.6	8.0	85.2
	3	616	1987/08/31	1969/06/24	18.19	F	168.1	55.4	82.4	NIL	NIL	54.3	27.1	20.1	7.4	NIL	NIL	85.7
	4	616	1988/09/01	1969/06/24	19.19	F	167.1	62.2	82.5	35.6	27.1	53.1	26.8	23.6	6.4	19.4	9.2	84.5
3	2	617	1986/09/01	1978/10/24	7.86	F	133.1	30.6	70.2	29.8	20.3	52.0	17.8	9.2	6.0	7.4	4.6	62.8
	3	617	1987/08/31	1978/10/24	8.85	F	139.4	34.9	73.3	30.4	21.6	52.7	20.8	10.8	4.6	6.7	4.2	66.1
	4	617	1988/09/01	1978/10/24	9.86	F	146.5	40.1	77.1	32.9	22.7	52.3	21.3	8.8	4.3	5.7	3.9	69.4
4	2	618	1986/09/01	1972/03/12	14.47	F	149.1	40.7	74.3	30.6	22.3	56.0	20.0	10.0	8.2	9.3	6.9	74.8
	3	618	1987/09/02	1972/03/12	15.48	F	153.8	48.5	77.9	31.0	NIL	56.7	22.6	14.2	9.8	NIL	NIL	75.9
	4	618	1988/09/01	1972/03/12	16.47	F	159.1	55.9	80.3	32.6	25.2	56.6	24.5	17.6	10.6	13.7	11.6	78.8
	5	618	1989/09/04	1972/03/12	17.48	F	160.7	63.1	82.3	NIL	NIL	56.7	28.5	20.6	13.8	23.2	31.8	78.4
2	2	619	1986/09/01	1976/03/09	10.48	F	138.4	33.8	69.0	29.4	20.6	55.5	21.3	11.3	6.4	8.0	7.8	69.4
	3	619	1987/09/02	1976/03/09	11.48	F	144.1	39.5	72.3	29.2	NIL	53.6	23.0	11.6	7.0	NIL	NIL	71.7
1	2	620	1986/09/01	1970/08/19	16.04	M	155.4	45.4	78.3	37.6	22.7	54.1	20.8	5.3	4.0	6.2	4.1	77.1
4	2	621	1986/09/01	1974/07/30	12.09	F	136.1	41.5	71.0	28.1	20.0	51.4	18.4	8.6	3.2	4.8	4.0	65.0

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	3	621	1987/08/31	1974/07/30	13.09	F	143.4	43.5	74.7	30.8	21.6	51.1	20.5	9.6	3.8	5.9	0.2	68.7
	4	621	1988/09/01	1974/07/30	14.09	F	149.4	36.5	77.8	30.8	22.4	51.8	19.6	7.1	2.8	4.8	3.2	71.6
	5	621	1989/09/04	1974/07/30	15.10	F	156.2	44.1	81.0	33.5	23.9	51.3	22.9	10.6	5.8	6.8	4.2	75.2
1	2	622	1986/09/01	1972/10/05	13.91	F	152.6	47.0	80.1	33.0	24.4	52.8	23.1	15.8	8.8	9.4	7.6	72.5
1	2	623	1986/09/01	1977/02/11	9.55	M	131.6	25.5	70.6	28.6	19.6	52.2	15.7	8.5	3.3	3.8	3.3	61.0
4	2	624	1986/09/01	1977/08/03	9.08	M	129.9	25.5	67.6	26.4	19.1	52.2	17.5	7.0	3.8	6.2	3.8	62.3
	3	624	1987/08/31	1977/08/03	10.08	M	134.5	28.1	71.1	27.8	19.6	51.7	17.6	7.0	3.6	6.7	3.6	63.4
	4	624	1988/09/01	1977/08/03	11.08	M	139.9	30.7	72.7	27.6	20.2	52.9	18.7	6.4	3.3	5.7	3.5	67.2
	5	624	1989/09/04	1977/08/03	12.09	M	131.7	27.1	70.9	29.3	18.5	52.5	17.0	6.0	3.7	4.6	3.7	60.8
1	2	625	1986/09/01	1968/06/27	18.18	M	163.9	61.6	87.0	37.5	24.4	57.9	25.5	6.9	5.7	11.5	4.0	76.9
2	2	626	1986/09/01	1975/06/30	11.17	M	137.4	28.9	71.6	30.4	19.8	51.8	17.0	5.3	3.6	4.5	3.0	65.8
	3	626	1987/08/31	1975/06/30	12.17	M	141.6	31.2	74.9	28.9	20.6	52.0	18.2	4.8	3.4	5.7	3.4	66.7
2	2	627	1986/09/01	1972/08/03	14.08	M	126.9	44.2	79.6	32.8	22.4	55.0	21.0	4.6	2.6	4.8	3.3	77.3
	3	627	1987/09/02	1972/08/03	15.08	M	160.8	50.6	82.3	35.2	23.0	54.6	21.7	5.2	3.2	6.2	4.0	78.5
4	2	628	1986/09/01	1977/08/18	9.04	M	130.7	27.7	69.8	28.2	20.0	52.8	18.3	6.8	4.2	5.0	4.6	60.9
	3	628	1987/08/31	1977/08/18	10.04	M	136.1	30.6	72.7	28.2	20.6	51.6	18.5	6.2	4.6	6.0	3.8	63.3
	4	628	1988/09/01	1977/08/18	11.04	M	141.9	33.8	75.5	39.7	21.6	52.7	19.6	5.6	4.4	5.5	3.4	66.4
	5	628	1989/09/04	1977/08/18	12.05	M	147.9	43.1	76.4	32.7	21.9	56.9	26.0	17.0	9.0	10.4	7.4	71.5
1	2	629	1986/09/01	1970/01/01	16.67	M	163.7	51.6	87.2	36.4	24.3	56.6	22.5	4.4	3.0	5.6	4.0	76.5
2	2	630	1986/09/01	1973/05/05	13.33	M	135.2	27.3	69.4	29.0	21.0	52.1	17.2	4.8	2.8	3.9	2.7	65.8
	3	630	1987/08/31	1973/05/05	14.32	M	139.3	31.2	71.0	27.8	21.6	51.9	19.0	7.7	3.3	6.4	3.5	68.3
3	2	631	1986/09/01	1978/05/24	8.27	M	123.3	24.0	64.7	27.1	18.0	52.4	16.5	8.0	5.6	5.0	3.6	58.6
	4	631	1988/09/02	1978/05/24	10.28	M	135.3	29.3	69.1	28.6	20.0	52.8	17.4	6.4	3.6	4.6	2.9	66.2
	5	631	1989/09/04	1978/05/24	11.28	M	140.8	31.5	71.3	29.8	20.6	52.5	17.7	8.1	3.1	5.9	3.5	69.5
4	2	632	1986/09/01	1974/04/27	12.35	F	153.9	41.0	78.5	31.0	23.0	51.4	18.0	8.4	5.2	6.6	5.0	75.4
	3	632	1987/08/31	1974/04/27	13.35	F	159.4	46.8	80.3	31.8	23.9	50.8	21.0	9.3	5.0	NIL	NIL	79.1
	4	632	1988/09/01	1974/04/27	14.35	F	163.8	50.9	83.7	32.5	24.7	51.8	21.7	8.5	3.6	8.7	4.8	80.1
	5	632	1989/09/04	1974/04/27	15.36	F	165.5	58.6	85.5	34.3	25.1	52.4	24.7	15.4	6.2	10.3	8.4	80.0
2	2	633	1986/09/01	1975/04/30	11.34	F	127.4	26.4	69.0	29.0	19.5	53.0	16.4	6.4	3.8	6.2	6.3	58.4
	5	633	1989/09/04	1975/04/30	14.35	F	145.2	39.1	77.8	NIL	NIL	54.8	22.1	8.2	6.0	8.6	5.4	67.4
1	2	634	1986/09/01	1969/11/24	16.77	F	148.1	52.0	83.2	35.8	25.4	54.9	26.5	4.6	6.8	16.4	11.6	64.8
4	2	635	1986/09/01	1980/08/25	6.02	F	115.4	22.3	63.3	25.9	17.4	52.4	17.6	10.4	5.8	6.0	7.0	52.1
	3	635	1987/08/31	1980/08/25	7.02	F	122.5	25.7	66.3	27.6	19.2	53.2	18.8	10.3	6.0	6.6	6.0	56.2
	4	635	1988/09/01	1980/08/25	8.02	F	129.3	27.9	78.4	28.7	19.0	52.8	18.5	7.5	4.9	5.9	4.9	50.9
	5	635	1989/09/04	1980/08/25	9.03	F	136.8	30.9	72.5	29.9	19.5	52.8	19.4	9.2	5.8	4.8	3.2	64.3

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
4	2	636	1986/09/01	1977/06/15	9.21	F	112.6	18.6	58.5	24.9	17.4	50.9	15.2	8.6	3.4	5.4	2.4	53.1
	3	636	1987/08/31	1977/06/15	10.21	F	115.9	20.5	62.6	27.1	17.8	50.6	17.0	8.3	3.0	4.6	3.5	53.3
	4	636	1988/09/01	1977/06/15	11.21	F	122.9	21.8	65.4	26.4	18.3	51.5	15.5	6.5	4.3	4.8	2.8	57.5
	5	636	1989/09/04	1977/06/15	12.22	F	128.4	23.2	68.0	27.4	19.5	51.2	17.1	6.4	5.6	6.0	3.2	60.4
4	2	637	1986/09/01	1977/09/24	8.94	F	129.4	25.4	65.7	25.5	17.1	51.3	18.0	7.4	6.6	5.4	3.0	63.7
	3	637	1987/08/31	1977/09/24	9.93	F	134.9	28.1	67.6	27.6	18.4	51.5	18.9	8.0	3.6	5.6	3.6	67.3
	4	637	1988/09/01	1977/09/24	10.94	F	142.2	38.4	73.7	29.9	20.8	49.7	24.3	15.0	10.5	10.7	10.7	68.5
	5	637	1989/09/04	1977/09/24	11.95	F	144.2	34.6	72.2	28.7	18.8	51.9	21.1	10.1	6.0	5.4	5.2	72.0
4	2	638	1986/09/01	1974/10/01	11.92	F	152.2	39.9	73.6	27.3	21.4	55.1	21.2	8.0	3.8	6.2	3.4	78.6
	3	638	1987/09/02	1974/10/01	12.92	F	159.1	50.1	81.9	33.0	NIL	54.9	24.7	12.0	6.2	NIL	NIL	77.1
	4	638	1988/09/01	1974/10/01	13.92	F	161.6	59.4	82.3	33.4	24.8	55.6	27.8	22.4	7.4	15.8	12.0	79.3
	5	638	1989/09/04	1974/10/01	14.93	F	162.2	64.1	82.8	NIL	NIL	56.9	28.5	19.2	10.2	22.0	11.0	79.4
1	2	640	1986/09/01	1974/08/08	12.07	F	146.3	38.4	74.1	33.0	21.3	55.0	21.8	12.8	6.5	7.0	10.4	72.2
4	2	641	1986/09/01	1971/09/05	14.99	F	155.8	45.3	80.3	31.6	23.4	52.2	24.5	11.4	4.0	10.2	9.2	75.5
	3	641	1987/09/02	1971/09/05	15.99	F	160.4	51.3	85.3	33.8	NIL	52.9	25.7	13.6	5.4	NIL	NIL	75.1
	4	641	1988/09/01	1971/09/05	16.99	F	162.1	56.0	87.1	33.7	23.7	53.3	27.5	16.5	4.3	14.2	13.0	75.0
	5	641	1989/09/04	1971/09/05	18.00	F	162.2	57.9	85.5	NIL	NIL	53.4	28.7	17.2	8.1	17.0	11.8	76.7
1	2	642	1986/09/01	1969/10/05	16.91	F	156.6	59.7	83.4	35.9	22.2	54.2	26.9	15.2	10.1	25.2	16.1	73.2
1	2	643	1986/09/01	1969/10/24	16.86	F	155.3	50.5	80.0	33.6	24.9	53.0	24.0	13.1	7.7	16.2	9.6	75.3
4	2	644	1986/09/01	1974/12/16	11.71	F	146.2	43.2	75.4	31.4	20.5	55.0	22.3	13.2	5.0	8.0	7.8	70.8
	3	644	1987/09/02	1974/12/16	12.71	F	148.1	45.9	77.0	34.6	NIL	54.1	23.7	12.6	4.3	NIL	NIL	71.1
	4	644	1988/09/01	1974/12/16	13.71	F	149.8	52.4	78.9	35.4	23.5	53.9	26.7	16.4	5.8	11.5	6.7	70.9
	5	644	1989/09/04	1974/12/16	14.72	F	148.7	58.4	79.7	NIL	NIL	55.7	28.0	22.0	9.8	13.0	9.2	69.0
4	2	646	1986/09/01	1975/02/12	11.55	F	145.8	32.7	73.7	29.6	21.0	51.8	17.8	7.4	5.0	6.8	5.0	72.1
	3	646	1987/08/31	1975/02/12	12.55	F	151.4	38.7	77.5	30.7	22.4	52.5	20.5	8.0	5.0	NIL	NIL	73.9
	4	646	1988/09/01	1975/02/12	13.55	F	158.5	45.2	82.2	32.5	23.6	52.6	22.1	8.8	4.8	9.3	6.3	76.3
	5	646	1989/09/04	1975/02/12	14.56	F	159.8	49.4	82.6	33.3	24.3	53.9	23.6	13.8	6.0	10.6	8.0	77.2
2	2	647	1986/09/01	1972/04/04	14.41	F	152.7	43.8	76.5	33.0	22.9	53.7	21.7	9.8	4.0	8.4	6.2	76.2
	3	647	1987/09/02	1972/04/04	15.41	F	159.3	49.9	80.5	34.5	NIL	55.1	22.9	8.0	4.8	NIL	NIL	78.8
1	2	648	1986/09/01	1977/10/07	8.90	F	122.2	19.9	64.3	22.1	18.5	51.0	15.3	6.8	3.2	5.6	6.2	57.9
3	2	650	1986/09/01	1974/12/29	11.67	F	146.2	35.1	74.4	29.7	21.4	53.4	21.0	6.8	3.5	7.6	4.8	71.8
	3	650	1987/08/31	1974/12/29	12.67	F	150.3	41.9	76.8	31.8	21.6	54.4	23.1	11.0	5.2	NIL	NIL	73.5
	4	650	1988/09/01	1974/12/29	13.67	F	152.1	44.8	79.8	32.9	22.6	55.1	24.4	12.2	4.7	10.5	6.3	72.3
1	2	651	1986/09/01	1974/12/29	11.67	F	126.9	32.8	68.3	24.8	19.7	50.2	16.1	6.2	5.8	5.6	5.4	58.6
2	2	652	1986/09/01	1975/11/18	10.79	F	140.2	33.1	71.1	31.4	22.5	52.1	19.0	12.2	5.4	6.2	9.2	69.1

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	3	652	1987/09/02	1975/11/18	11.79	F	146.4	41.7	75.8	33.4	NIL	50.4	20.8	10.4	5.4	NIL	NIL	70.6
2	2	653	1986/09/01	1978/06/06	8.24	M	128.7	23.1	67.7	27.4	18.8	51.6	15.6	5.4	3.2	4.2	3.6	61.0
	3	653	1987/08/31	1978/06/06	9.24	M	134.5	26.0	68.7	28.4	19.4	50.6	15.7	6.1	3.6	4.8	2.8	65.8
4	2	654	1986/09/01	1978/05/19	8.29	F	122.1	25.2	66.5	25.4	17.6	49.5	16.8	8.0	7.2	5.4	4.0	55.5
	3	654	1987/08/31	1978/05/19	9.29	F	127.6	23.1	68.5	27.6	18.6	49.2	16.8	8.0	4.8	4.8	3.1	59.1
	4	654	1988/09/01	1978/05/19	10.29	F	134.3	27.3	72.8	28.1	20.1	49.6	18.0	7.2	4.4	6.8	4.2	61.5
	5	654	1989/09/04	1978/05/19	11.30	F	142.6	32.4	75.8	29.8	20.9	49.5	20.0	7.6	3.8	7.2	4.2	66.8
1	2	655	1986/09/01	1979/08/02	7.08	M	110.3	18.5	59.6	24.5	15.9	50.9	16.1	6.0	3.4	5.7	5.6	50.7
3	2	656	1986/09/01	1972/01/04	14.66	F	156.6	51.9	80.6	37.2	24.8	53.5	25.1	9.5	4.3	11.4	7.2	76.0
	4	656	1988/09/01	1972/01/04	16.66	F	158.5	57.5	83.2	37.0	26.4	53.5	24.6	11.7	5.4	10.9	6.9	75.3
	5	656	1989/09/04	1972/01/04	17.67	F	158.3	61.6	83.1	NIL	NIL	53.8	27.1	12.8	9.4	11.4	8.4	75.2
1	2	657	1986/09/01	1978/06/21	8.20	F	118.5	21.0	64.4	24.4	18.5	50.5	15.5	7.2	4.6	4.4	4.2	54.1
1	2	658	1986/09/01	1977/06/03	9.25	F	134.6	29.1	69.8	29.3	20.4	49.1	18.4	9.0	4.3	6.2	4.7	64.8
2	2	659	1986/09/01	1979/04/11	7.39	F	118.9	22.9	65.0	25.9	18.8	49.9	18.8	11.4	5.0	6.0	4.6	53.9
	3	659	1987/08/31	1979/04/11	8.39	F	125.7	26.2	67.3	28.4	19.6	51.4	19.7	12.5	6.7	9.2	5.4	58.4
1	2	660	1986/09/01	1971/03/03	15.50	F	158.1	45.5	75.2	35.3	24.5	55.4	22.2	13.3	5.0	10.3	6.6	82.8
2	2	661	1986/09/01	1972/04/30	14.34	F	162.5	52.0	81.5	33.6	22.2	55.4	25.2	12.0	6.0	6.8	7.6	81.0
4	2	662	1986/09/01	1979/03/06	7.49	F	118.5	34.8	64.0	26.2	17.6	50.2	17.5	7.4	4.4	6.0	6.0	54.5
	3	662	1987/08/31	1979/03/06	8.49	F	122.1	22.4	64.4	26.8	18.2	51.5	18.6	7.6	4.0	NIL	NIL	57.6
	4	662	1988/09/01	1979/03/06	9.49	F	127.7	26.2	68.3	28.1	19.1	50.8	19.0	7.8	4.5	6.6	5.2	59.4
	5	662	1989/09/04	1979/03/06	10.50	F	132.7	29.6	70.8	29.0	20.0	51.9	19.3	7.4	4.0	5.0	4.2	61.9
1	2	663	1986/09/01	1980/05/15	6.30	M	108.2	15.5	58.5	24.2	16.1	51.3	15.8	8.0	6.0	4.6	4.2	49.7
1	2	664	1986/09/01	1971/07/05	15.16	F	157.7	50.3	82.8	36.7	26.2	55.6	24.5	16.4	8.2	12.6	9.6	74.9
1	2	665	1986/09/01	1969/08/20	17.03	F	156.1	58.6	81.8	36.7	24.6	53.5	27.7	23.8	10.6	28.0	14.4	74.3
1	2	666	1986/09/01	1968/07/06	18.16	M	166.7	58.8	84.9	36.9	24.3	57.1	25.4	9.0	4.1	8.0	4.7	81.8
1	2	667	1986/09/01	1977/11/06	8.82	F	132.3	27.0	68.3	28.1	20.8	51.1	18.4	11.4	4.8	6.8	4.2	64.0
1	2	668	1986/09/01	1977/04/26	9.35	F	133.5	27.8	66.8	29.4	21.2	51.3	17.2	7.2	4.2	5.8	3.4	66.7
2	2	669	1986/09/01	1976/03/13	10.47	F	134.8	31.3	71.4	28.8	19.8	49.0	21.8	16.2	7.3	7.0	12.6	63.4
	5	669	1989/09/04	1976/03/13	13.48	F	148.8	44.9	76.1	NIL	NIL	50.5	25.7	19.6	10.8	15.2	13.8	72.7
3	2	670	1986/09/01	1975/05/19	11.29	M	127.9	24.2	67.4	25.4	19.4	53.2	17.5	6.6	3.8	4.5	3.5	60.5
	4	670	1988/09/02	1975/05/19	13.29	M	137.3	28.6	70.4	28.4	20.7	53.1	17.1	5.5	3.8	5.4	2.6	66.9
	5	670	1989/09/04	1975/05/19	14.30	M	143.8	33.4	75.3	29.9	21.6	53.2	18.2	7.8	6.0	6.0	2.8	68.5
2	2	671	1986/09/01	1966/07/27	20.10	M	162.6	52.3	83.2	39.1	25.2	56.8	23.5	6.7	4.4	10.5	4.0	79.4
	4	671	1988/09/02	1966/07/27	22.10	M	162.9	51.7	83.7	38.4	25.1	56.9	23.8	7.5	3.4	8.8	4.4	79.2
3	2	672	1986/09/01	1979/09/22	6.94	M	116.1	19.4	61.4	25.5	17.4	50.6	15.2	6.4	4.0	4.2	2.4	54.6

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	3	672	1987/08/31	1979/09/22	7.94	M	121.6	21.6	63.8	26.8	18.4	50.5	15.5	6.2	3.4	5.3	3.3	57.8
	4	672	1988/09/01	1979/09/22	8.94	M	128.9	24.7	66.9	27.9	19.2	51.5	16.3	6.1	4.5	5.8	4.6	62.0
1	2	673	1986/09/01	1975/02/11	11.55	M	154.5	43.7	79.4	34.3	24.1	54.4	23.2	4.4	3.8	5.8	3.6	75.1
3	2	674	1986/09/01	1972/01/03	14.66	M	150.8	36.8	75.0	33.0	21.8	52.8	19.0	5.2	3.4	6.4	4.2	75.8
	3	674	1987/09/02	1972/01/03	15.66	M	159.1	43.8	79.1	33.7	22.8	54.7	21.5	6.4	3.5	6.9	5.2	79.9
	4	674	1988/09/01	1972/01/03	16.66	M	164.1	48.6	81.5	35.4	24.0	55.0	23.2	5.2	3.8	9.1	4.9	82.6
3	2	675	1986/09/01	1980/04/04	6.41	M	121.8	23.5	66.5	25.6	19.2	50.4	17.0	7.6	3.8	4.6	4.4	55.3
	3	675	1987/08/31	1980/04/04	7.41	M	127.4	25.1	68.5	27.8	20.1	50.1	16.7	9.2	4.0	5.3	4.6	58.9
	4	675	1988/09/02	1980/04/04	8.41	M	131.4	26.6	70.5	28.0	20.9	50.6	16.6	7.3	3.6	4.6	3.6	60.9
2	2	676	1986/09/01	1978/03/06	8.49	F	131.1	38.0	70.1	31.1	19.2	51.9	19.4	8.2	5.2	5.6	6.6	61.0
	3	676	1987/08/31	1978/03/06	9.49	F	137.7	32.3	72.3	32.5	20.5	52.6	19.6	7.4	4.1	7.0	5.4	65.4
1	2	679	1986/09/01	1979/01/05	7.66	F	122.2	23.3	66.3	24.8	18.4	51.2	18.4	11.0	5.8	5.4	5.4	55.9
4	2	680	1986/09/01	1977/05/17	9.29	F	130.1	25.6	68.3	26.9	18.7	53.8	17.0	8.4	5.8	5.8	5.6	61.7
	3	680	1987/08/31	1977/05/17	10.29	F	134.7	27.7	71.0	28.0	20.3	54.2	18.9	9.7	4.2	5.0	5.4	63.7
	4	680	1988/09/01	1977/05/17	11.29	F	138.8	29.2	72.2	27.9	21.1	54.1	19.8	8.7	4.2	5.3	4.3	66.6
	5	680	1989/09/04	1977/05/17	12.30	F	144.1	32.8	75.2	30.0	21.0	54.6	20.5	8.4	5.0	5.4	6.4	68.9
3	2	681	1986/09/01	1979/11/12	6.80	M	140.4	32.9	69.6	31.0	21.6	55.7	17.7	6.4	4.2	4.6	3.2	70.8
	3	681	1987/08/31	1979/11/12	7.80	M	145.3	34.8	73.8	31.9	22.0	53.6	18.1	6.6	3.8	4.6	3.2	71.5
	4	681	1988/09/01	1979/11/12	8.80	M	148.7	37.1	73.8	32.3	22.4	55.8	18.7	5.1	3.5	4.3	3.1	74.9
2	2	682	1986/09/01	1971/04/23	15.36	F	154.4	40.3	78.4	32.2	24.3	55.0	20.9	6.3	4.4	7.4	4.4	76.0
	3	682	1987/09/01	1971/04/23	16.36	F	156.3	44.6	80.7	32.3	NIL	51.8	22.4	8.9	4.6	NIL	NIL	75.6
3	2	683	1986/09/01	1978/10/05	7.91	F	117.8	19.0	64.6	26.2	16.7	48.3	15.8	7.6	3.6	6.0	3.8	53.2
	3	683	1987/08/31	1978/10/05	8.90	F	123.9	20.9	66.8	27.8	17.6	48.4	16.1	6.8	3.0	5.0	3.0	57.1
	4	683	1988/09/01	1978/10/05	9.91	F	128.5	23.3	69.7	27.8	18.1	48.5	15.8	6.2	2.7	5.4	4.1	58.8
2	2	684	1986/09/01	1971/04/26	15.35	F	164.3	51.0	80.9	35.2	26.4	57.8	23.8	10.6	4.1	8.4	6.0	83.4
	3	684	1987/09/02	1971/04/26	16.35	F	167.3	55.3	84.0	37.4	NIL	55.6	24.0	10.8	5.5	NIL	NIL	83.3
3	2	686	1986/09/01	1979/03/05	7.49	F	100.7	14.1	54.6	22.4	15.9	48.5	14.5	6.6	2.8	4.2	2.8	46.1
	3	686	1987/08/31	1979/03/05	8.49	F	106.4	15.7	58.4	24.0	16.8	48.1	14.7	8.6	4.0	4.6	4.1	48.0
	4	686	1988/09/01	1979/03/05	9.49	F	111.1	17.4	60.1	24.1	16.9	48.6	14.8	7.3	3.7	5.0	3.3	50.9
1	2	687	1986/09/01	1971/01/01	15.67	F	150.8	37.3	76.6	32.4	22.0	53.9	21.0	6.4	4.8	8.6	5.1	74.2
1	2	688	1986/09/01	1979/03/09	7.48	F	121.2	20.1	65.0	24.6	17.1	52.8	15.3	5.6	4.0	4.2	2.8	56.2
3	2	689	1986/09/01	1980/12/04	5.74	F	113.8	19.3	62.0	24.7	16.9	49.8	16.5	8.8	4.0	7.6	6.0	51.8
	3	689	1987/08/31	1980/12/04	6.74	F	130.9	21.8	64.9	26.4	17.6	49.2	17.4	8.2	5.5	6.4	5.8	66.0
	4	689	1988/09/01	1980/12/04	7.74	F	126.7	24.7	67.6	28.1	18.4	50.3	18.2	9.0	3.7	6.8	5.0	59.1
4	2	690	1986/09/01	1978/09/03	8.00	M	121.4	21.0	65.4	25.4	18.0	51.9	16.6	7.0	4.4	6.2	3.6	56.0

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	3	690	1987/08/31	1978/09/03	8.99	M	128.5	23.0	67.4	26.3	18.6	51.9	15.3	7.3	4.1	5.5	3.2	61.1
	4	690	1988/09/01	1978/09/03	10.00	M	134.7	26.4	71.2	27.0	18.8	52.6	16.4	5.4	3.5	4.9	2.8	63.5
	5	690	1989/09/04	1978/09/03	11.00	M	141.2	29.0	72.9	29.8	20.1	53.1	17.7	5.9	3.6	5.4	3.6	68.3
1	2	691	1986/09/01	1971/05/27	15.27	F	151.8	41.8	80.3	34.0	23.0	54.8	22.0	7.0	4.7	8.8	5.9	71.5
1	2	692	1986/09/01	1969/03/07	17.49	M	159.1	46.5	79.9	35.0	23.1	54.6	20.8	6.6	3.8	5.2	5.0	79.1
4	2	693	1986/09/01	1980/04/11	6.39	F	122.2	21.6	62.4	24.8	18.0	51.2	16.8	8.0	4.2	5.0	3.2	59.8
	3	693	1987/08/31	1980/04/11	7.39	F	126.4	24.3	64.1	20.3	19.2	51.2	18.5	10.2	4.5	5.1	4.8	62.3
	4	693	1988/09/01	1980/04/11	8.39	F	131.1	27.0	66.8	27.2	19.0	51.9	17.1	8.0	4.3	5.6	4.1	64.3
	5	693	1989/09/04	1980/04/11	9.40	F	136.1	28.7	69.5	28.4	20.0	51.2	19.7	11.3	7.7	6.0	5.4	66.6
2	2	694	1986/09/01	1972/12/02	13.75	F	167.4	59.7	82.6	36.6	26.2	59.2	24.8	12.3	4.7	11.9	8.0	84.8
	5	694	1989/09/07	1972/12/02	16.76	F	168.1	63.9	85.6	32.2	26.8	57.8	25.1	10.0	6.8	9.4	5.6	82.5
1	2	695	1986/09/01	1967/10/06	18.90	F	158.1	71.3	84.4	38.0	27.8	58.5	31.1	26.8	18.2	24.4	19.2	73.6
1	2	696	1986/09/01	1970/12/05	15.74	F	152.6	50.8	76.5	34.4	23.2	54.5	25.1	10.4	5.8	12.4	8.8	76.1
1	2	697	1986/09/01	1970/06/16	16.21	M	165.3	58.5	87.0	38.4	24.2	57.0	24.4	6.4	5.4	8.0	5.6	78.3
4	2	698	1986/09/01	1974/11/24	11.77	M	135.1	26.2	71.7	29.5	20.9	50.8	17.4	5.6	2.5	4.4	3.1	63.3
	3	698	1987/09/02	1974/11/24	12.77	M	139.3	29.1	73.1	29.4	20.4	52.7	18.7	5.4	3.1	5.0	4.1	66.2
	4	698	1988/09/01	1974/11/24	13.77	M	147.3	33.8	77.4	31.6	21.5	52.3	19.2	3.9	3.0	4.5	3.3	69.9
	5	698	1989/09/04	1974/11/21	14.79	M	155.4	40.4	82.6	33.3	22.5	53.5	22.2	5.0	3.6	5.9	4.2	72.8
1	2	699	1986/09/01	1972/08/15	14.05	F	150.8	48.9	79.2	33.0	24.6	54.5	26.0	16.4	10.1	13.2	13.0	71.6
1	2	700	1986/09/01	1975/07/07	11.15	F	135.4	40.0	72.4	29.0	20.3	52.8	18.5	9.6	5.2	7.0	7.2	63.0
3	2	701	1986/09/01	1968/05/26	18.27	F	165.1	58.9	82.9	35.1	27.0	55.5	25.6	11.2	4.3	7.5	5.6	82.2
	4	701	1988/09/01	1968/05/26	20.27	F	166.3	61.8	85.4	35.6	26.8	55.0	26.0	17.1	4.1	9.6	6.9	80.9
	5	701	1989/09/07	1968/05/26	21.29	F	166.1	62.5	84.4	36.3	27.6	53.2	27.0	12.4	5.4	9.2	6.4	81.6
3	2	702	1986/09/01	1976/02/02	10.58	M	135.4	30.3	72.3	28.9	21.2	57.0	18.0	6.0	2.8	4.4	3.2	63.1
	3	702	1987/09/02	1976/02/02	11.58	M	140.2	34.6	73.6	29.6	21.5	55.3	19.0	6.2	3.6	5.4	4.3	66.6
	4	702	1988/09/01	1976/02/02	12.58	M	145.1	37.2	76.2	30.7	21.9	55.0	19.2	6.8	3.9	4.7	3.2	68.9
2	2	703	1986/09/01	1976/02/11	10.55	M	125.1	31.2	68.6	25.3	19.1	52.4	17.7	8.0	4.6	5.2	4.2	56.5
	3	703	1987/08/31	1976/02/11	11.55	M	132.9	27.6	69.7	26.9	19.4	52.3	17.9	11.0	4.5	5.7	4.9	63.2
4	2	704	1986/09/01	1978/03/28	8.43	M	119.3	22.8	63.1	25.8	17.2	52.0	18.5	7.8	6.0	4.2	4.0	56.2
	3	704	1987/08/31	1978/03/28	9.43	M	125.3	23.9	64.2	26.7	17.9	52.3	17.7	7.7	5.5	6.0	3.5	61.1
	4	704	1988/09/01	1978/03/28	10.43	M	129.6	26.8	66.5	26.9	18.5	52.9	18.3	7.4	4.5	5.2	3.7	63.1
	5	704	1989/09/04	1978/03/28	11.44	M	134.9	29.0	68.1	28.1	19.3	52.7	19.6	6.6	4.2	5.4	3.8	66.8
1	2	705	1986/09/01	1970/12/15	15.71	F	156.2	42.6	83.3	34.5	23.4	53.8	21.1	12.6	5.8	10.4	6.4	72.9
4	2	706	1986/09/01	1979/12/05	6.74	F	115.6	20.0	61.9	24.2	17.6	49.0	16.5	7.0	4.8	3.8	3.2	53.7
	3	706	1987/08/31	1979/12/05	7.74	F	122.1	22.3	65.6	26.6	18.3	49.8	17.8	7.0	6.0	4.8	3.2	56.5

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	706	1988/09/01	1979/12/05	8.74	F	126.5	24.3	67.6	29.3	19.1	NIL	NIL	8.6	5.0	4.6	3.5	58.9
	5	706	1989/09/04	1979/12/05	9.75	F	132.6	NIL	70.8	NIL	NIL	49.9	18.9	NIL	NIL	NIL	NIL	61.8
2	2	707	1986/09/01	1976/02/05	10.57	M	138.8	27.4	73.2	28.5	20.6	50.5	15.7	6.6	4.2	4.8	3.8	65.6
	3	707	1987/08/31	1976/02/05	11.57	M	144.3	31.1	74.7	29.5	21.0	50.6	16.3	6.3	4.0	5.5	3.6	69.6
3	2	708	1986/09/01	1980/06/16	6.21	M	113.8	20.3	63.2	24.9	17.2	52.3	16.6	8.2	4.6	6.0	6.2	50.6
	3	708	1987/08/31	1980/06/16	7.21	M	121.1	23.0	66.0	25.8	18.3	51.9	16.4	6.8	3.8	5.6	3.8	55.1
	4	708	1988/09/01	1980/06/16	8.21	M	126.5	25.2	67.2	27.0	19.1	52.7	17.3	5.5	3.0	5.6	4.1	59.6
1	2	709	1986/09/01	1970/04/13	16.39	F	149.9	43.6	75.8	33.5	22.4	55.6	23.2	7.0	4.0	7.0	5.2	74.1
1	2	710	1986/09/01	1978/03/05	8.49	F	112.6	18.1	61.0	25.0	16.4	51.9	18.6	9.6	4.6	3.8	4.0	51.6
2	2	711	1986/09/01	1979/09/09	6.98	M	113.6	19.3	60.7	23.6	16.8	52.0	16.6	7.2	5.4	6.4	3.8	52.9
	3	711	1987/08/31	1979/09/09	7.98	M	121.9	21.5	64.3	25.4	18.6	52.4	17.5	6.8	3.4	5.6	3.2	57.6
2	2	712	1986/09/01	1972/08/30	14.01	F	171.5	55.3	85.7	36.3	24.4	55.1	23.7	9.2	4.8	8.6	6.6	85.8
	4	712	1988/09/01	1972/08/30	16.01	F	176.7	62.4	88.7	36.9	25.5	55.8	24.8	14.7	5.9	11.0	8.9	88.0
1	2	713	1986/09/01	1980/07/25	6.10	M	107.3	16.2	59.2	22.5	15.3	50.7	16.1	7.6	4.6	4.8	4.7	48.1
4	2	714	1986/09/01	1979/11/07	6.82	F	126.1	22.5	68.6	27.5	18.8	50.7	16.6	6.8	4.4	6.2	3.8	57.4
	3	714	1987/08/31	1979/11/07	7.81	F	133.1	26.1	70.4	29.8	20.0	51.5	17.7	8.0	3.8	6.1	4.4	62.7
	4	714	1988/09/01	1979/11/07	8.82	F	141.1	21.7	75.2	26.6	18.2	48.9	16.9	5.4	3.1	4.9	2.7	65.8
	5	714	1989/09/04	1979/11/07	9.83	F	147.8	32.8	78.0	31.6	22.4	51.9	19.4	9.2	6.1	8.4	4.7	69.8
4	2	715	1986/09/01	1978/02/28	8.51	F	124.3	22.5	65.1	26.4	18.6	51.8	15.3	6.4	5.8	4.4	4.0	59.2
	3	715	1987/08/31	1978/02/28	9.50	F	129.1	25.2	66.2	28.4	19.8	52.8	17.1	6.5	4.0	5.4	3.9	62.8
	4	715	1988/09/01	1978/02/28	10.51	F	136.1	28.3	70.3	28.9	20.4	53.0	18.0	7.0	4.1	6.1	5.5	65.8
	5	715	1989/09/04	1978/02/28	11.52	F	145.4	34.3	74.9	31.4	21.4	53.3	18.6	6.5	5.3	6.6	5.6	70.5
4	2	716	1986/09/01	1980/06/21	6.20	F	118.4	20.8	61.8	26.0	18.1	50.7	15.6	6.8	4.0	4.2	4.0	56.6
	3	716	1987/08/31	1980/06/21	7.20	F	124.1	23.8	65.5	27.5	18.9	51.0	17.8	7.0	4.4	5.2	3.6	58.6
	4	716	1988/09/01	1980/06/21	8.20	F	128.5	27.1	68.6	28.9	19.8	51.2	18.7	7.6	4.6	6.1	4.3	59.9
	5	716	1989/09/04	1980/06/21	9.21	F	134.3	29.2	69.2	29.6	20.6	51.3	19.2	8.6	4.8	5.2	3.4	65.1
4	2	717	1986/09/01	1974/06/12	12.22	F	138.7	29.3	72.4	27.5	19.2	52.9	18.0	8.4	4.2	6.6	4.4	66.3
	3	717	1987/08/31	1974/06/12	13.22	F	145.3	33.3	76.0	29.0	20.9	53.5	19.9	9.2	6.0	7.2	5.0	69.3
	4	717	1988/09/01	1974/06/12	14.22	F	151.7	39.7	80.4	30.6	22.4	54.5	21.0	8.3	4.0	8.2	5.0	71.3
	5	717	1989/09/04	1974/06/12	15.23	F	154.3	42.2	82.9	30.9	22.4	53.5	22.1	12.3	8.0	8.8	4.8	71.4
4	2	718	1986/09/01	1976/07/06	10.16	F	129.9	22.3	63.9	27.1	18.2	50.5	16.4	6.8	5.0	5.4	3.2	66.0
	3	718	1987/08/31	1976/07/06	11.15	F	134.8	26.9	70.5	28.9	19.4	50.3	17.7	6.8	3.5	5.2	4.2	64.3
	4	718	1988/09/01	1976/07/06	12.16	F	138.8	28.5	71.2	28.5	19.0	50.0	17.8	5.6	3.4	5.5	3.6	67.6
	5	718	1989/09/04	1976/07/06	13.16	F	142.6	32.9	74.0	30.0	20.2	50.5	19.2	7.5	5.4	5.8	5.2	68.6
4	2	719	1986/09/01	1979/11/01	6.83	F	115.3	33.0	63.0	24.9	17.1	51.3	16.7	7.4	6.4	4.6	4.4	52.3

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	3	719	1987/08/31	1979/11/01	7.83	F	121.1	22.7	62.6	26.8	17.8	51.8	17.6	7.4	4.7	3.6	3.3	58.5
	4	719	1988/09/01	1979/11/01	8.83	F	124.5	25.1	66.4	27.0	18.9	51.9	17.6	7.5	4.2	4.5	3.5	58.1
	5	719	1989/09/04	1979/11/01	9.84	F	130.1	27.3	69.6	28.3	18.6	51.3	18.3	8.2	6.4	4.8	4.4	60.5
2	2	720	1986/09/01	1976/04/16	10.38	M	148.4	35.2	75.1	28.8	21.5	54.3	21.1	6.2	3.0	5.2	5.0	73.3
	3	720	1987/08/31	1976/04/16	11.38	M	156.1	40.4	77.8	31.5	22.8	54.5	21.5	5.8	3.2	6.0	4.6	78.2
3	2	721	1986/09/01	1974/06/09	12.23	M	128.2	26.3	68.0	28.2	18.3	52.0	17.8	8.5	3.6	4.8	3.3	60.2
	3	721	1987/08/31	1974/06/09	13.23	M	132.1	29.2	70.7	28.9	18.6	53.3	18.5	10.3	6.7	6.8	4.4	61.3
	4	721	1988/09/01	1974/06/09	14.23	M	137.7	33.4	72.9	30.6	19.4	53.9	19.8	6.7	4.5	5.9	4.4	64.8
4	2	722	1986/09/01	1974/03/15	12.47	F	132.9	26.1	65.3	28.6	20.5	51.2	15.9	8.0	6.4	5.0	3.2	67.6
	3	722	1987/09/01	1974/03/15	12.47	F	139.1	29.3	69.5	29.3	21.0	51.0	17.8	6.4	4.0	5.8	3.6	69.5
	4	722	1988/09/01	1974/03/15	14.47	F	144.6	31.4	71.7	31.2	21.0	51.5	20.2	6.8	4.6	6.2	3.8	72.9
	5	722	1989/09/04	1974/03/15	15.47	F	148.8	34.0	73.7	31.0	22.8	51.7	18.3	7.8	4.2	5.2	3.9	75.1
4	2	723	1986/09/01	1977/05/06	9.32	M	117.4	20.5	61.9	27.4	18.4	53.5	13.9	6.4	3.8	4.2	3.4	55.5
	3	723	1987/08/31	1977/05/06	10.32	M	122.7	22.7	65.3	27.2	19.3	54.0	15.1	6.0	3.4	4.6	3.6	57.4
	4	723	1988/09/01	1977/05/06	11.32	M	128.2	24.2	66.1	27.7	19.5	54.0	15.8	4.8	3.6	4.5	3.1	62.1
	5	723	1989/09/04	1977/05/06	12.33	M	132.8	27.5	68.8	28.9	20.2	54.3	17.3	6.8	6.7	5.5	3.8	64.0
2	2	724	1986/09/01	1972/09/28	13.93	M	167.8	48.7	83.1	35.4	24.7	54.2	22.1	5.6	2.8	5.5	3.6	84.7
	3	724	1987/09/02	1972/09/28	14.93	M	172.3	54.6	86.9	36.8	24.6	53.7	23.7	7.9	4.9	8.5	6.4	85.4
1	2	725	1986/09/01	1977/10/16	8.88	F	117.2	18.0	63.0	24.5	17.4	48.6	14.7	6.0	3.8	4.9	4.8	54.2
1	2	726	1986/09/01	1973/02/14	13.55	M	158.7	45.8	79.5	35.4	22.8	53.6	21.7	7.3	4.2	6.8	3.9	79.2
4	2	727	1986/09/01	1979/12/05	6.74	M	127.3	25.1	66.6	27.4	19.4	50.9	17.5	6.8	4.2	4.8	3.8	60.7
	3	727	1987/08/31	1979/12/05	7.74	M	132.6	27.9	68.5	29.2	20.0	51.2	17.9	7.3	4.7	5.6	3.6	64.1
	4	727	1988/09/02	1979/12/05	8.74	M	137.1	30.1	72.1	30.2	20.7	51.5	17.8	6.3	3.4	5.2	3.6	64.9
	5	727	1989/09/04	1979/12/05	9.75	M	142.1	33.1	72.7	30.6	21.1	51.5	19.3	7.0	4.9	5.8	3.1	69.4
1	2	729	1986/09/01	1976/06/20	10.20	F	134.3	27.7	69.2	29.1	20.8	50.9	16.3	6.2	4.2	5.3	3.0	65.1
1	2	730	1986/09/01	1979/11/01	6.83	M	114.1	24.6	63.2	25.7	17.8	52.8	17.8	7.2	4.2	7.0	4.0	50.8
1	2	731	1986/09/01	1971/07/28	15.10	F	152.4	51.1	80.3	34.4	24.7	53.8	26.5	17.6	6.8	11.4	8.0	72.1
3	2	732	1986/09/01	1977/07/10	9.15	F	124.5	24.2	66.8	27.4	18.5	49.9	14.8	7.0	4.8	5.8	3.6	57.7
	3	732	1987/08/31	1977/07/10	10.14	F	128.9	24.0	64.4	28.7	19.7	50.9	17.4	7.2	3.0	7.4	3.6	64.5
	5	732	1989/09/05	1977/07/10	12.16	F	137.4	30.2	69.1	30.3	19.2	50.8	19.1	9.2	4.8	6.6	4.6	68.3
3	2	733	1986/09/01	1973/03/05	13.49	M	172.1	48.4	84.9	37.6	25.8	50.5	21.1	5.2	2.8	6.2	5.2	87.2
	3	733	1987/09/02	1973/03/05	14.50	M	177.1	52.6	90.0	39.0	26.6	51.5	22.2	4.8	3.1	5.6	3.8	87.1
	4	733	1988/09/02	1973/03/05	15.50	M	179.1	59.7	92.1	39.7	27.0	51.0	24.1	6.1	3.4	6.6	5.1	87.0
3	2	734	1986/09/01	1975/03/14	11.47	M	155.2	39.6	80.8	32.5	22.7	53.5	19.1	5.4	3.8	5.0	3.6	74.4
	3	734	1987/08/31	1975/03/14	12.47	M	161.4	43.4	83.0	32.9	23.5	52.4	19.1	4.6	3.0	5.0	3.1	78.4

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	734	1988/09/01	1975/03/14	13.47	M	168.1	50.1	85.3	35.3	24.8	53.1	21.8	4.7	3.0	6.0	3.7	82.8
1	2	735	1986/09/01	1970/01/24	16.60	M	156.4	42.0	79.3	32.8	22.1	54.5	21.0	6.0	3.6	6.2	4.4	77.1
1	2	736	1986/09/01	1970/02/07	16.57	F	160.3	65.1	81.2	36.4	24.5	56.6	26.0	13.5	13.0	14.0	11.7	79.1
2	2	737	1986/09/01	1978/12/02	7.75	M	126.1	21.5	63.9	28.8	19.1	50.9	15.8	5.3	3.8	3.5	3.3	62.2
	3	737	1987/08/31	1978/12/02	8.75	M	131.1	24.2	68.3	28.6	20.1	50.9	16.7	6.2	4.0	4.4	3.6	62.8
3	2	738	1986/09/01	1976/01/21	10.61	M	136.1	31.0	72.4	30.3	20.6	55.1	20.4	7.4	3.0	6.2	4.2	63.6
	3	738	1987/08/31	1976/01/21	11.61	M	142.3	34.2	74.2	31.4	21.5	55.4	19.5	6.0	3.2	6.4	3.2	68.1
	4	738	1988/09/01	1976/01/21	12.61	M	146.6	36.7	77.3	32.4	22.0	56.0	21.1	5.5	2.6	6.6	2.7	69.3
2	2	739	1986/09/01	1972/05/13	14.30	M	144.8	32.6	73.7	31.0	21.4	52.8	18.6	6.0	3.0	4.2	4.8	71.1
	3	739	1987/09/02	1972/05/13	15.31	M	150.5	37.6	77.9	29.7	22.5	54.3	19.8	7.2	3.6	6.1	4.9	72.6
3	2	740	1986/09/01	1979/03/14	7.47	M	123.4	22.0	64.3	25.8	17.9	51.9	17.4	7.6	4.4	5.8	4.0	59.1
	3	740	1987/08/31	1979/03/14	8.47	M	129.8	23.6	67.3	27.8	18.2	50.8	16.5	9.2	4.4	6.2	5.0	62.5
	4	740	1988/09/01	1979/03/14	9.47	M	134.3	24.5	68.3	28.4	19.0	51.8	16.8	6.2	3.4	5.6	3.7	66.0
3	2	741	1986/09/01	1977/02/04	9.57	M	128.6	26.7	67.6	28.5	19.3	52.7	17.5	11.6	5.1	7.0	5.0	61.0
	3	741	1987/08/31	1977/02/04	10.57	M	132.6	28.7	70.1	27.7	20.1	52.4	18.7	15.4	5.6	8.2	4.4	62.5
	5	741	1989/09/04	1977/02/04	12.58	M	143.2	34.6	73.5	30.3	21.6	53.3	20.5	16.0	6.2	9.8	5.3	69.7
1	2	742	1986/09/01	1969/07/01	17.17	M	174.2	65.0	93.4	38.8	27.2	58.6	26.8	5.5	5.0	6.4	4.4	80.8
4	2	743	1986/09/01	1980/02/01	6.58	M	118.6	23.8	63.8	26.4	19.6	51.8	17.8	6.6	5.4	5.0	3.4	54.8
	3	743	1987/09/02	1980/02/01	7.58	M	125.2	26.1	66.8	27.9	20.4	51.5	17.5	7.1	3.6	5.5	3.2	58.4
	4	743	1988/09/01	1980/02/01	8.58	M	130.8	29.1	68.7	28.6	21.1	52.0	18.4	7.2	3.2	6.3	3.4	62.1
	5	743	1989/09/04	1980/02/01	9.59	M	136.3	31.8	71.4	29.9	21.8	52.5	18.9	6.8	3.3	5.3	3.6	64.9
1	2	744	1986/09/01	1972/05/03	14.33	F	153.4	47.5	82.0	34.8	26.2	52.7	23.8	7.6	6.0	9.1	9.5	71.4
1	2	745	1986/09/01	1969/06/05	17.24	M	162.7	56.8	79.4	35.0	26.6	55.0	26.0	6.8	3.8	5.8	7.0	83.3
4	2	746	1986/09/01	1979/03/27	7.43	M	114.6	19.9	64.4	24.0	17.3	52.3	16.3	6.0	3.8	5.4	4.0	50.2
	3	746	1987/08/31	1979/03/27	8.43	M	121.3	22.4	65.5	25.7	18.1	51.9	16.6	6.3	3.2	5.4	3.8	55.8
	4	746	1988/09/01	1979/03/27	9.43	M	126.1	24.5	68.3	26.6	18.8	53.0	17.1	5.2	3.0	4.7	3.2	57.8
	5	746	1989/09/04	1979/03/27	10.44	M	130.1	27.3	70.4	27.8	19.4	53.3	18.7	6.1	3.6	6.0	3.4	59.7
1	2	747	1986/09/01	1970/01/13	16.63	F	156.7	52.7	81.4	34.6	24.7	56.8	24.1	10.8	6.2	8.6	7.2	75.3
1	2	748	1986/09/01	1975/01/14	11.63	F	121.7	21.2	62.9	26.4	17.0	48.6	17.3	8.1	3.7	5.6	3.7	58.8
2	2	749	1986/09/01	1970/02/06	16.57	F	151.3	50.2	76.0	33.1	23.2	51.3	24.0	19.2	8.2	16.8	16.4	75.3
	3	749	1987/09/02	1970/02/06	17.57	F	153.8	55.9	82.8	34.0	NIL	51.7	27.6	21.0	11.4	NIL	NIL	71.0
4	2	750	1986/09/01	1976/09/18	9.95	F	139.7	31.4	70.8	29.0	20.9	54.8	16.3	10.6	6.4	7.4	4.0	68.9
	3	750	1987/08/31	1976/09/18	10.95	F	146.9	35.7	73.4	29.0	21.8	56.2	19.3	7.9	4.0	7.2	4.2	73.5
	4	750	1988/09/01	1976/09/18	11.95	F	155.2	43.3	78.4	31.4	22.6	56.3	21.9	10.8	4.4	10.2	6.0	76.8
	5	750	1989/09/04	1976/09/18	12.96	F	162.5	50.4	82.2	33.4	24.2	56.7	22.3	11.2	5.8	7.6	5.2	80.3

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
1	2	751	1986/09/01	1965/11/04	20.83	M	159.6	54.1	83.4	38.0	23.8	53.9	26.8	4.4	3.5	6.3	5.0	76.2
1	2	752	1986/09/01	1970/10/23	15.86	M	169.4	53.3	82.8	37.5	25.2	55.7	21.1	5.6	4.4	6.6	4.4	86.6
1	2	753	1986/09/01	1970/11/13	15.80	F	156.2	52.3	78.9	35.4	25.4	51.0	24.1	17.0	6.7	12.0	9.8	77.3
1	2	754	1986/09/01	1975/05/08	11.32	M	124.1	21.2	62.2	26.0	19.3	50.1	15.0	5.8	3.0	4.8	3.2	61.8
4	2	755	1986/09/01	1970/12/22	15.69	M	150.5	42.4	77.2	34.4	22.9	55.0	23.1	6.4	3.0	5.2	4.1	73.3
	3	755	1987/09/02	1970/12/22	16.70	M	154.4	44.0	78.2	35.0	23.0	54.6	23.6	7.1	3.6	6.0	4.3	76.2
	4	755	1988/09/02	1970/12/22	17.70	M	156.5	47.6	81.0	35.6	23.5	55.2	24.2	7.2	4.5	5.9	3.8	75.5
	5	755	1989/09/04	1970/12/22	18.70	M	157.8	50.9	81.2	37.0	23.6	55.1	26.1	11.1	5.6	7.4	4.2	76.6.
1	2	756	1986/09/01	1972/10/03	13.91	M	161.4	51.2	84.1	37.2	24.5	57.3	22.8	6.6	4.4	6.4	4.8	77.3
4	2	757	1986/09/01	1973/03/23	13.44	F	156.2	36.3	80.3	32.8	22.2	52.8	19.5	8.7	3.7	6.8	5.6	75.9
	3	757	1987/09/02	1973/03/23	14.45	F	160.3	41.2	83.7	34.7	NIL	52.4	20.2	9.8	5.0	NIL	NIL	76.6
	4	757	1988/09/01	1973/03/23	15.44	F	162.8	43.7	85.7	34.4	23.9	52.6	22.7	11.8	5.0	11.6	7.2	77.1
	5	757	1989/09/04	1973/03/23	16.45	F	162.6	46.6	85.5	NIL	NIL	52.5	22.7	16.0	6.0	11.6	7.0	77.1
4	2	758	1986/09/01	1973/12/16	12.71	F	144.4	35.3	76.1	32.2	21.6	52.3	20.5	10.7	5.0	7.2	7.6	68.3
	3	758	1987/09/01	1973/12/16	13.71	F	150.1	46.5	79.0	33.2	NIL	52.8	24.5	17.8	7.8	NIL	NIL	71.0
	4	758	1988/09/01	1973/12/16	14.71	F	152.1	50.4	80.3	34.1	24.0	52.6	27.1	23.8	8.2	18.2	12.2	71.7
	5	758	1989/09/04	1973/12/16	15.72	F	152.8	55.4	81.4	NIL	NIL	54.0	28.6	19.2	12.8	18.2	13.4	71.4
3	2	759	1986/09/01	1974/05/06	12.32	M	144.3	31.0	72.7	31.1	21.0	53.8	18.8	3.8	2.4	5.0	3.5	71.6
	3	759	1987/09/02	1974/05/06	13.33	M	148.1	34.6	75.2	31.6	21.0	52.9	18.1	5.6	3.0	6.0	4.7	72.8
	5	759	1989/09/04	1974/05/06	15.33	M	160.8	44.5	79.4	34.6	23.4	53.9	21.0	5.4	3.1	7.4	3.9	81.4
2	2	760	1986/09/01	1972/12/06	13.74	F	149.1	42.9	78.6	32.7	24.3	56.3	22.4	9.4	4.3	10.2	4.5	70.4
	3	760	1987/09/02	1972/12/06	14.74	F	150.4	48.1	81.3	32.4	NIL	55.7	24.8	17.0	6.8	NIL	NIL	69.1
4	2	761	1986/09/01	1978/01/04	8.66	F	128.1	28.0	67.0	28.4	17.8	51.5	17.1	7.4	5.6	5.0	6.0	61.0
	3	761	1987/08/31	1978/01/04	9.66	F	132.8	27.4	69.9	29.8	19.2	52.2	18.7	8.1	3.9	4.7	4.9	62.9
	4	761	1988/09/01	1978/01/04	10.66	F	138.1	29.0	72.2	30.2	19.3	53.2	17.9	6.8	3.5	5.7	4.2	65.8
	5	761	1989/09/04	1978/01/04	11.67	F	143.6	31.5	74.5	31.0	20.3	52.0	19.4	7.4	5.6	6.8	5.8	69.1
3	2	762	1986/09/01	1979/12/06	6.74	M	116.1	21.3	60.3	24.6	18.1	50.8	17.1	8.8	4.2	5.8	5.2	55.7
	3	762	1987/08/31	1979/12/06	7.73	M	122.4	23.3	63.8	26.4	18.7	49.3	17.0	6.4	4.4	7.0	4.2	58.6
	5	762	1989/09/04	1979/12/06	9.75	M	132.8	27.2	66.1	29.2	19.8	51.1	17.9	5.3	4.0	4.7	3.9	66.7
2	2	763	1986/09/01	1975/06/01	11.25	F	149.2	31.8	73.1	29.3	20.6	50.9	17.3	7.6	4.6	5.6	4.4	76.1
	3	763	1987/08/31	1975/06/01	12.25	F	155.3	36.3	75.1	31.2	21.6	50.9	19.6	9.6	4.2	6.8	6.6	80.2
2	2	764	1986/09/01	1972/03/29	14.43	F	156.1	49.9	79.4	30.8	24.1	53.8	22.8	12.8	6.3	9.2	6.6	76.6
	4	764	1988/09/01	1972/04/28	16.35	F	157.7	53.8	83.5	33.5	23.5	54.0	22.7	16.9	5.4	12.8	6.3	74.2
1	2	765	1986/09/01	1975/04/06	11.41	M	148.4	31.7	74.0	31.8	21.3	53.7	17.7	6.8	4.2	5.2	3.6	74.4
1	2	766	1986/09/01	1979/12/16	6.71	M	113.1	20.9	63.8	23.5	18.3	51.5	17.0	7.6	4.4	5.2	4.8	49.2

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
1	2	767	1986/09/01	1970/01/01	16.67	F	151.4	45.5	78.0	36.4	24.1	51.4	22.8	12.6	9.8	14.2	6.2	73.4
2	2	768	1986/09/01	1979/03/11	7.48	F	158.4	39.7	79.3	33.2	24.0	53.9	22.0	7.6	3.2	6.7	5.5	79.1
	3	768	1987/08/31	1979/03/11	8.48	F	158.9	46.3	81.6	33.4	24.8	54.5	23.0	8.0	7.6	NIL	NIL	77.3
1	2	769	1986/09/01	1979/11/06	6.82	F	116.4	22.3	62.6	26.8	18.2	50.0	17.0	6.6	4.4	4.6	3.8	53.8
4	2	770	1986/09/01	1977/05/10	9.31	F	135.1	55.0	71.2	28.6	20.8	53.4	24.9	18.2	11.8	9.2	12.4	63.9
	3	770	1987/08/31	1977/05/10	10.31	F	141.6	43.1	73.8	29.5	23.0	51.9	27.8	27.4	18.6	NIL	NIL	67.8
	4	770	1988/09/01	1977/05/10	11.31	F	149.5	46.5	77.9	31.5	23.2	53.3	26.7	14.8	9.3	10.8	10.5	71.6
	5	770	1989/09/04	1977/05/10	12.32	F	156.1	50.7	79.6	33.0	24.2	52.7	27.5	15.5	12.6	9.3	8.7	76.5
1	2	771	1986/09/01	1968/11/18	17.79	F	158.9	61.5	83.4	38.6	27.0	55.7	29.0	21.2	8.2	16.8	10.2	75.5
1	2	772	1986/09/01	1969/07/19	17.12	M	163.9	54.0	82.3	37.3	25.8	55.8	24.6	7.2	5.6	6.2	4.2	81.6
1	2	773	1986/09/01	1968/11/09	17.81	M	168.8	61.8	86.0	40.1	26.7	57.6	26.5	5.6	3.4	7.2	3.8	82.8
1	2	774	1986/09/01	1976/10/16	9.88	M	126.7	24.6	67.3	27.0	19.0	51.6	17.4	9.2	4.0	4.6	3.7	59.4
1	2	775	1986/09/01	1977/03/02	9.50	F	117.3	21.3	61.9	26.2	17.7	51.6	16.1	5.4	3.2	3.8	4.0	55.4
3	2	776	1986/09/01	1975/03/03	11.50	F	133.3	26.0	70.5	28.7	20.3	60.3	16.5	5.6	3.2	5.0	4.8	62.8
	3	776	1987/08/31	1975/03/03	12.50	F	139.5	29.8	73.8	30.2	20.8	50.2	18.6	6.8	3.6	6.2	4.6	65.7
	4	776	1988/09/01	1975/03/03	13.50	F	146.1	35.0	78.2	31.8	22.8	51.3	19.2	6.5	4.1	8.4	4.8	67.8
1	2	777	1986/09/01	1968/03/05	18.49	F	151.1	51.7	77.1	35.1	23.0	54.5	25.5	15.8	10.3	8.8	8.9	74.0
2	2	778	1986/09/01	1977/04/06	9.41	M	132.2	26.1	67.9	27.4	19.7	52.3	17.2	6.8	3.8	4.8	3.2	64.3
	3	778	1987/08/31	1977/04/06	10.40	M	137.6	28.1	69.9	28.6	20.0	51.8	17.2	7.4	4.3	5.4	3.2	67.7
4	2	779	1986/09/01	1972/12/11	13.72	F	150.4	43.2	76.4	32.2	23.0	54.5	22.0	15.2	6.8	11.8	7.2	74.0
	3	779	1987/09/02	1972/12/11	14.73	F	156.3	50.0	80.5	33.2	NIL	55.5	23.4	16.0	8.7	NIL	NIL	75.8
	4	779	1988/09/01	1972/12/11	15.72	F	161.2	55.5	82.6	34.8	24.9	56.2	25.2	16.6	6.5	13.0	7.6	78.6
	5	779	1989/09/04	1972/12/11	16.73	F	151.7	45.0	79.0	31.8	26.5	54.8	23.1	12.2	4.1	12.6	6.8	72.7
3	2	780	1986/09/01	1977/07/14	9.13	M	121.7	24.8	66.4	27.4	18.8	52.0	17.8	8.0	3.6	5.4	4.4	55.3
	3	780	1987/08/31	1977/07/14	10.13	M	125.7	25.7	67.0	27.9	19.4	51.2	17.7	8.8	3.8	5.6	4.6	58.7
	4	780	1988/09/01	1977/07/14	11.13	M	128.9	26.9	68.3	28.4	19.4	51.8	17.8	6.9	3.4	6.2	4.3	60.6
1	2	781	1986/09/01	1964/06/10	22.23	M	177.1	62.1	86.1	41.7	27.6	58.0	24.1	6.3	4.6	10.2	4.1	90.9
1	2	782	1986/09/01	1980/02/19	6.53	M	121.6	22.5	64.4	26.6	17.1	52.7	17.8	5.0	3.4	4.0	3.4	57.2
1	2	783	1986/09/01	1970/02/02	16.58	F	158.2	52.8	82.7	34.0	24.9	54.1	25.4	17.0	5.3	10.9	7.2	75.5
1	2	784	1986/09/01	1979/08/16	7.04	M	118.3	22.8	63.4	24.4	18.2	51.9	18.0	11.2	7.6	6.8	4.8	54.9
3	2	785	1986/09/01	1971/05/15	15.30	M	165.2	50.8	80.0	35.1	26.2	55.7	22.0	8.8	4.1	8.4	5.7	85.2
	3	785	1987/09/02	1971/05/15	16.30	M	172.1	56.7	84.0	36.8	27.5	54.4	22.3	6.6	3.7	7.5	5.8	88.1
	4	785	1988/09/02	1971/05/15	17.30	M	178.2	60.9	85.9	39.1	29.0	55.0	22.3	5.6	3.2	7.2	5.2	92.3
1	2	786	1986/09/01	1980/02/28	6.51	M	123.1	23.9	68.0	26.6	18.7	52.0	17.2	6.0	3.4	5.2	4.8	55.0
1	2	787	1986/09/01	1972/03/01	14.50	M	157.7	41.1	76.8	31.6	23.8	53.0	22.0	5.6	3.2	4.6	3.2	80.9

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
4	2	788	1986/09/01	1974/12/01	11.75	M	139.2	30.4	73.0	29.8	20.5	54.8	18.9	6.6	3.2	5.2	4.4	66.2
	3	788	1987/09/01	1974/12/01	11.75	M	144.4	33.7	75.1	30.2	21.2	55.2	18.7	6.6	3.2	5.8	3.3	69.3
	4	788	1988/09/01	1974/12/01	13.75	M	151.3	38.5	78.5	31.2	22.0	56.7	20.5	7.7	3.3	5.2	3.6	72.8
	5	788	1989/09/04	1974/12/01	14.76	M	160.7	47.3	83.3	32.9	23.4	57.2	21.1	7.7	4.0	7.1	4.8	77.4
2	2	789	1986/09/01	1976/02/08	10.56	M	135.8	29.9	70.4	30.0	19.9	52.6	17.1	6.8	2.5	4.2	2.7	65.4
	3	789	1987/08/31	1976/02/08	11.56	M	137.5	31.3	72.7	29.4	20.3	53.4	19.1	7.6	3.1	6.7	3.8	64.8
1	2	790	1986/09/01	1975/10/23	10.86	F	129.4	26.9	69.5	27.6	20.6	51.2	18.1	10.4	6.0	6.4	5.0	59.9
3	2	791	1986/09/01	1972/12/12	13.72	M	158.6	42.3	77.4	35.4	22.4	54.8	20.3	6.2	2.8	6.6	5.4	81.2
	3	791	1987/09/02	1972/12/12	14.72	M	165.3	48.5	81.0	36.3	23.8	55.4	21.3	6.2	3.6	8.4	6.2	84.3
	4	791	1988/09/01	1972/12/12	15.72	M	169.3	52.1	83.9	37.3	24.4	54.9	22.8	6.5	3.4	11.4	5.2	85.4
4	2	792	1986/09/01	1971/10/02	14.92	M	150.9	37.3	75.5	34.0	22.9	49.8	17.4	5.5	3.2	4.4	3.4	75.4
	3	792	1987/08/31	1971/10/02	15.91	M	159.9	45.3	82.0	24.6	23.6	52.1	20.0	8.0	4.0	7.8	5.0	77.9
	4	792	1988/09/01	1971/10/02	16.92	M	163.6	50.0	83.2	37.8	24.4	52.7	21.6	5.7	3.2	8.2	5.4	80.4
	5	792	1989/09/04	1971/10/02	17.92	M	165.8	55.2	86.1	38.9	25.1	53.4	23.4	7.6	4.7	8.5	5.5	79.7
4	2	793	1986/09/01	1972/02/04	14.57	M	140.6	33.2	73.2	28.6	21.0	55.4	19.3	8.6	3.8	5.6	3.4	67.4
	3	793	1987/08/31	1972/02/04	15.57	M	145.5	38.1	74.3	30.8	22.1	54.1	20.1	12.8	4.6	8.0	4.3	71.2
	4	793	1988/09/01	1972/02/04	16.57	M	151.3	41.9	76.7	32.5	22.8	55.9	19.8	8.5	3.9	6.6	4.3	74.6
	5	793	1989/09/04	1972/02/04	17.58	M	158.6	48.1	80.9	33.9	23.9	55.1	23.1	10.0	3.8	6.6	4.4	77.7
1	2	794	1986/09/01	1970/09/17	15.96	F	168.1	50.5	85.3	36.0	27.6	55.0	20.6	6.9	3.7	7.1	4.8	82.7
1	2	795	1986/09/01	1974/01/12	12.64	M	132.1	27.2	66.8	28.2	20.3	53.0	18.0	8.0	7.4	5.6	5.2	65.3
3	2	796	1986/09/01	1975/03/21	11.45	M	122.6	22.6	66.4	27.2	18.4	52.4	14.4	4.8	2.8	4.4	2.9	56.2
	3	796	1987/08/31	1975/03/21	12.45	M	126.7	25.8	69.4	27.3	19.5	51.7	16.2	6.2	3.6	5.4	3.2	57.3
	5	796	1989/09/04	1975/03/21	14.46	M	145.6	36.3	77.6	31.7	22.6	53.9	19.4	5.2	3.4	5.7	4.2	68.0
1	2	797	1986/09/01	1980/05/08	6.32	M	116.7	19.9	64.6	24.0	18.1	51.0	15.3	6.8	4.6	4.4	2.8	52.1
4	2	798	1986/09/01	1975/09/08	10.98	F	147.8	34.8	72.6	31.1	23.4	51.7	21.3	14.6	6.2	10.0	5.0	75.2
	3	798	1987/09/02	1975/09/08	11.98	F	153.1	38.5	76.4	32.0	NIL	51.0	21.9	13.1	5.5	NIL	NIL	76.7
	4	798	1988/09/01	1975/09/08	12.98	F	160.1	44.3	79.8	32.8	24.1	51.8	22.4	11.2	5.2	8.1	5.0	80.2
	5	798	1989/09/04	1975/09/08	13.99	F	165.1	51.9	82.2	35.5	25.0	53.1	24.4	16.2	6.5	10.3	7.9	82.9
1	2	799	1986/09/01	1978/06/21	8.20	M	121.4	23.1	63.7	26.1	17.6	53.0	16.4	4.2	3.0	3.8	2.4	57.7
1	2	800	1986/09/01	1977/01/01	9.67	F	133.4	25.7	69.1	29.2	19.5	48.4	15.9	5.6	2.8	4.6	3.6	64.3
3	2	801	1986/09/01	1975/03/24	11.44	F	149.8	38.3	76.4	31.1	22.9	55.1	19.3	10.2	8.6	6.8	9.2	73.4
	3	801	1987/09/02	1975/03/24	12.44	F	156.5	43.4	80.4	33.3	NIL	54.4	21.1	8.2	5.4	NIL	NIL	76.1
	5	801	1989/09/05	1975/03/24	14.45	F	170.3	57.5	86.2	36.3	24.3	55.0	23.5	9.0	4.6	8.4	5.4	84.1
2	2	802	1986/09/01	1972/06/06	14.24	F	153.3	46.9	82.2	35.5	34.9	54.5	23.2	10.5	5.8	9.6	5.6	71.1
	5	802	1989/09/07	1972/06/06	17.26	F	153.4	49.8	81.3	34.7	25.4	53.1	24.4	11.7	5.8	11.5	6.0	71.8

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
3	2	803	1986/09/01	1976/11/02	9.83	F	122.6	20.4	64.9	26.8	18.8	50.4	15.5	5.8	2.8	2.4	2.4	57.7
	3	803	1987/08/31	1976/11/02	10.83	F	129.1	23.6	67.5	28.2	20.0	51.1	16.7	6.2	3.5	4.6	2.6	61.5
	4	803	1988/09/01	1976/11/02	11.83	F	120.4	21.3	64.3	22.8	17.6	50.2	15.8	5.4	2.8	4.0	2.6	56.1
1	2	804	1986/09/01	1971/12/25	14.69	F	154.6	56.5	81.3	32.5	26.7	56.0	24.6	12.6	8.8	13.4	8.8	73.3
1	2	805	1986/09/01	1968/08/12	18.06	M	161.9	49.4	79.4	33.8	23.7	53.9	23.4	7.4	3.0	7.8	4.5	82.5
1	2	806	1986/09/01	1972/02/10	14.56	F	152.8	42.2	78.6	32.4	22.4	51.0	20.9	7.0	5.2	7.6	5.6	74.2
4	2	807	1986/09/01	1974/12/04	11.74	F	119.1	22.2	65.6	26.0	18.5	51.4	17.5	9.8	4.2	6.0	4.8	53.4
	3	807	1987/08/31	1974/12/04	12.74	F	124.6	23.7	66.7	27.0	18.5	51.8	17.1	13.3	14.2	14.2	14.0	57.9
	4	807	1988/09/01	1974/12/04	13.74	F	127.4	24.9	67.6	26.0	18.7	52.5	16.6	5.6	3.7	4.5	3.3	59.8
	5	807	1989/09/04	1974/12/04	14.75	F	132.6	28.2	70.9	28.4	19.3	52.4	18.5	7.0	5.6	5.0	4.4	61.7
1	2	808	1986/09/01	1980/04/09	6.40	F	125.6	21.9	64.9	22.7	17.2	52.0	16.0	6.8	3.6	4.4	4.1	60.7
4	2	809	1986/09/01	1971/12/11	14.72	M	173.4	53.6	80.1	36.2	25.3	53.8	21.4	11.6	5.4	6.4	3.8	93.3
	3	809	1987/08/31	1971/12/11	15.72	M	177.3	59.2	86.8	37.0	25.6	54.7	23.0	12.1	3.6	8.0	4.3	90.5
	4	809	1988/09/01	1971/12/11	16.72	M	180.2	64.4	83.9	38.7	26.0	55.8	25.5	11.2	6.0	10.1	5.2	96.3
	5	809	1989/09/04	1971/12/11	17.73	M	180.9	68.2	87.2	38.9	26.8	55.9	25.7	13.6	5.9	11.6	5.5	93.7
4	2	810	1986/09/01	1973/08/20	13.03	F	159.5	51.7	80.2	33.6	24.6	55.8	22.5	17.8	6.6	11.6	8.4	79.3
	3	810	1987/08/31	1973/08/20	14.03	F	164.7	60.5	84.0	35.2	26.2	56.0	25.9	22.0	7.6	NIL	NIL	80.7
	4	810	1988/09/01	1973/08/20	15.03	F	166.7	70.1	87.1	35.3	28.2	56.9	30.6	32.4	10.8	39.6	38.4	79.6
	5	810	1989/09/05	1973/08/20	16.04	F	168.8	77.3	86.5	35.4	27.7	57.1	31.8	37.4	19.0	23.0	14.6	82.3
2	2	829	1986/09/01	1974/04/04	12.41	M	140.5	27.4	71.4	29.5	20.4	54.2	17.2	6.0	4.2	4.2	2.8	69.1
	3	829	1987/08/31	1974/04/04	13.41	M	144.1	34.0	66.9	29.6	21.5	55.0	18.5	6.2	3.3	4.6	3.0	77.1
3	2	831	1986/09/01	1980/03/03	6.50	M	113.6	18.6	64.2	24.4	16.4	50.4	15.6	4.6	3.6	4.0	3.0	49.4
	3	831	1987/08/31	1980/03/03	7.50	M	119.8	21.0	65.3	25.5	17.2	49.9	16.5	6.0	4.2	4.9	3.7	54.5
	4	831	1988/09/01	1980/03/03	8.50	M	126.2	23.7	68.7	26.4	18.2	51.4	NIL	5.4	3.4	4.5	3.4	57.5
3	2	832	1986/09/01	1976/07/14	10.13	M	139.8	31.6	73.4	29.3	21.0	54.8	17.0	5.8	3.5	4.4	3.2	66.4
	3	832	1987/08/31	1976/07/14	11.13	M	146.8	29.7	74.0	30.6	20.9	53.1	16.9	7.4	3.7	4.5	2.5	72.8
	4	832	1988/09/01	1976/07/14	12.13	M	149.3	37.1	77.7	30.4	21.9	55.4	19.0	6.1	3.2	5.2	4.2	71.6
4	2	833	1986/09/01	1978/02/05	8.57	M	119.6	22.3	63.3	26.2	19.0	52.7	17.0	6.0	3.8	5.4	3.4	56.3
	3	833	1987/08/31	1978/02/05	9.57	M	125.1	25.2	65.6	27.3	19.5	51.6	17.2	9.4	5.0	6.8	4.2	59.4
	4	833	1988/09/01	1978/02/05	10.57	M	131.4	28.6	69.6	28.3	20.0	52.8	17.8	7.0	4.1	6.2	3.5	61.8
	5	833	1989/09/04	1978/02/05	11.58	M	136.1	30.8	69.9	29.8	21.2	53.1	19.5	7.0	3.9	6.4	4.3	66.1
3	2	834	1986/09/01	1980/06/14	6.22	M	120.7	21.2	63.8	24.3	17.0	53.8	17.5	7.2	4.4	6.2	4.0	56.9
	3	834	1987/08/31	1980/06/14	7.21	M	126.9	23.0	65.1	25.4	17.9	54.0	16.0	6.6	3.6	5.4	3.6	61.8
	4	834	1988/09/02	1980/06/14	8.22	M	131.1	24.7	68.2	25.5	18.4	55.1	16.2	7.9	3.3	4.6	3.2	62.8
3	2	842	1986/09/01	1980/09/03	6.00	M	111.2	19.4	61.1	25.3	16.7	52.3	17.0	8.0	3.4	4.4	4.4	50.1

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	3	842	1987/08/31	1980/09/03	6.99	M	117.5	21.9	63.4	26.2	17.4	52.8	1.8	8.2	4.2	5.8	4.4	54.1
	4	842	1988/09/01	1980/09/03	8.00	M	122.6	23.1	65.1	26.8	17.8	52.6	17.9	6.0	3.5	5.1	4.0	57.5
3	2	861	1986/09/01	1973/10/29	12.84	M	140.3	27.8	70.1	28.1	20.1	51.7	16.4	7.8	5.0	5.6	3.8	70.2
	3	861	1987/08/31	1973/10/29	13.84	M	144.3	29.4	71.3	26.0	20.4	50.4	16.1	7.4	3.4	4.5	3.3	73.0
	4	861	1988/09/01	1973/10/29	14.84	M	148.4	30.7	72.6	29.6	21.1	51.5	16.6	6.3	2.9	5.8	3.1	75.8
4	2	865	1986/09/01	1979/01/28	7.59	M	116.7	21.8	65.1	24.8	18.8	51.1	15.0	6.6	3.7	5.4	4.2	51.6
	3	865	1987/08/31	1979/01/28	8.59	M	126.1	23.2	66.6	28.0	18.8	51.7	15.8	7.2	3.6	5.5	5.4	61.5
	4	865	1988/09/01	1979/01/28	9.59	M	131.6	25.1	67.4	28.0	18.8	52.4	16.5	7.6	3.8	5.2	5.4	64.2
	5	865	1989/09/04	1979/01/28	10.60	M	136.9	28.7	70.1	29.1	19.2	52.6	17.9	7.8	4.5	5.6	5.0	66.8
4	2	868	1986/09/01	1975/08/28	11.01	M	137.9	32.2	71.1	31.0	20.8	51.3	18.3	7.0	3.3	4.7	3.4	66.8
	3	868	1987/08/31	1975/08/28	12.01	M	143.1	36.1	74.6	28.9	21.0	51.5	19.8	9.8	3.0	7.0	4.1	68.5
	4	868	1988/09/01	1975/08/28	13.01	M	148.2	37.1	77.1	32.1	21.5	51.6	19.4	7.1	2.8	6.5	3.3	71.1
	5	868	1989/09/04	1975/08/28	14.02	M	153.4	43.4	79.7	33.6	22.8	51.8	22.0	11.0	4.6	7.9	4.1	73.7
3	2	869	1986/09/01	1972/04/04	14.41	M	140.8	33.5	71.6	31.0	19.9	50.6	17.8	7.7	4.5	5.6	4.8	69.2
	3	869	1987/08/31	1972/04/04	15.41	M	144.1	39.2	73.0	30.9	20.4	51.5	20.5	11.6	9.0	8.8	5.0	71.0
	5	869	1989/09/04	1972/04/04	17.42	M	152.6	43.0	76.7	32.8	21.2	51.8	21.8	9.1	5.8	9.6	7.4	75.9
	3	870	1987/09/02	1967/10/07	19.90	M	162.3	54.2	82.6	37.9	23.9	55.4	23.3	5.4	3.6	7.2	4.0	79.7
2	2	871	1986/09/01	1978/05/06	8.32	M	134.3	30.5	69.6	28.9	20.5	57.2	18.1	7.4	3.8	4.4	3.4	64.7
	3	871	1987/08/31	1978/05/06	9.32	M	140.5	32.4	72.5	29.5	21.2	56.8	18.3	6.6	3.5	5.3	3.0	68.0
4	2	875	1986/09/01	1975/03/10	11.48	F	135.7	30.6	72.2	30.3	19.0	50.1	19.1	10.8	6.8	7.0	4.8	63.5
	3	875	1987/08/31	1975/03/10	12.48	F	143.3	36.9	74.2	30.0	20.4	50.5	20.6	10.6	4.4	NIL	NIL	69.1
	4	875	1988/09/01	1975/03/10	13.48	F	148.2	42.8	78.8	29.6	21.2	51.4	23.2	11.4	5.0	11.2	7.6	69.4
	5	875	1989/09/04	1975/03/10	14.49	F	150.1	49.4	79.9	31.6	22.8	51.3	24.3	15.4	6.1	11.1	8.6	70.1
4	2	878	1986/09/01	1980/11/07	5.82	F	108.9	19.6	59.5	24.9	17.4	49.2	16.6	8.0	5.6	5.2	4.4	49.4
	3	878	1987/08/31	1980/11/07	6.81	F	115.5	21.5	62.1	27.1	17.8	50.3	17.6	8.7	3.8	5.0	4.7	53.4
	4	878	1988/09/01	1980/11/07	7.82	F	121.8	24.7	65.3	27.5	19.0	50.6	18.1	8.3	5.6	6.0	5.6	56.5
	5	878	1989/09/04	1980/11/07	8.83	F	129.3	27.0	69.1	28.4	18.9	50.3	19.3	8.4	6.7	6.4	5.5	60.2
4	2	880	1986/09/01	1978/08/18	8.04	F	118.8	21.6	63.8	25.8	17.5	52.0	16.4	8.2	6.2	7.4	5.4	55.0
	3	880	1987/08/31	1978/08/18	9.04	F	124.3	25.4	66.1	27.4	18.3	51.6	18.2	11.7	5.0	9.3	4.6	58.2
	4	880	1988/09/01	1978/08/18	10.04	F	129.6	28.1	70.2	27.8	19.1	52.3	18.3	9.4	4.3	8.0	5.6	59.4
	5	880	1989/09/04	1978/08/18	11.05	F	137.1	32.0	72.5	30.2	20.2	51.9	20.8	10.6	7.6	11.6	7.8	64.5
2	2	881	1986/09/01	1974/10/04	11.91	F	112.3	17.9	59.8	23.2	17.3	49.6	15.0	8.4	5.4	5.0	3.8	52.5
	3	881	1987/08/31	1974/10/04	12.91	F	118.1	19.5	63.0	24.8	18.0	49.5	16.1	8.9	3.3	4.7	3.3	55.1
2	2	882	1986/09/01	1978/03/13	8.47	F	131.7	29.3	67.8	26.7	19.5	48.6	17.1	5.0	3.4	4.2	3.0	63.9
	3	882	1987/08/31	1978/03/13	9.47	F	137.8	26.2	69.9	24.3	20.2	49.4	17.3	5.0	3.8	4.4	3.2	67.9

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
4	2	884	1986/09/01	1977/08/31	9.00	F	131.1	27.3	70.2	29.0	19.0	53.0	17.5	7.8	3.4	4.5	3.2	60.9
	3	884	1987/08/31	1977/08/31	10.00	F	136.6	30.5	72.3	27.8	19.8	52.5	18.9	7.5	3.8	5.7	3.5	64.3
	4	884	1988/09/01	1977/08/31	11.00	F	142.5	33.3	74.9	29.8	20.7	53.4	18.5	5.0	3.1	4.6	2.8	67.6
	5	884	1989/09/04	1977/08/31	12.01	F	149.3	39.0	77.3	32.8	32.2	54.3	20.7	7.4	4.2	6.0	3.6	72.0
2	2	885	1986/09/01	1982/06/01	4.25	F	114.3	20.0	61.4	26.0	17.3	50.6	17.0	6.8	5.8	5.9	3.5	52.9
	3	885	1987/08/31	1982/06/01	5.25	F	121.3	23.5	63.5	27.2	18.8	51.1	17.3	7.7	5.0	4.8	4.4	57.8
4	2	887	1986/09/01	1977/11/09	8.81	F	123.1	30.5	63.8	26.9	19.0	51.1	17.7	7.8	3.4	5.0	5.8	59.3
	3	887	1987/08/31	1977/11/09	9.81	F	127.4	NIL	65.9	27.3	19.2	51.2	18.3	6.9	3.8	5.7	4.1	61.5
	4	887	1988/09/01	1977/11/09	10.81	F	131.8	27.5	68.5	27.8	20.1	52.0	17.8	5.0	3.1	4.3	3.5	63.3
	5	887	1989/09/04	1977/11/09	11.82	F	136.8	31.3	71.4	29.0	21.2	51.4	19.4	6.8	3.6	5.2	4.2	65.4
4	2	888	1986/09/01	1977/12/30	8.67	F	125.1	25.2	65.8	26.6	17.9	47.5	16.8	6.8	3.0	5.2	4.0	59.2
	3	888	1987/08/31	1977/12/30	9.67	F	133.1	25.1	71.1	19.5	28.6	48.9	17.4	6.4	3.4	6.4	4.2	61.9
	4	888	1988/09/01	1977/12/30	10.67	F	139.8	30.0	74.9	29.7	21.0	49.4	18.9	6.8	4.3	6.2	4.5	64.9
	5	888	1989/09/04	1977/12/30	11.68	F	148.3	35.8	79.0	32.1	21.8	49.7	20.9	7.6	4.6	7.6	5.8	69.3
4	2	889	1986/09/01	1979/09/07	6.98	F	123.2	37.0	64.8	25.4	18.0	54.9	17.5	6.2	3.4	4.6	4.4	58.4
	3	889	1987/08/31	1979/09/07	7.98	F	132.1	27.3	71.9	26.6	19.4	54.5	18.5	8.2	3.6	5.2	4.0	60.2
	4	889	1988/09/01	1979/09/07	8.98	F	138.3	30.2	75.8	25.2	29.4	55.5	17.7	8.2	3.6	4.4	4.1	62.5
	5	889	1989/09/04	1979/09/07	9.99	F	144.1	32.9	77.9	27.4	21.2	54.7	19.9	10.4	6.8	5.2	5.1	66.1
4	2	890	1986/09/01	1977/11/13	8.80	F	124.7	27.0	65.6	26.6	17.6	50.5	18.2	11.8	10.0	7.0	7.2	59.1
	3	890	1987/08/31	1977/11/13	9.80	F	130.4	27.6	67.2	28.4	19.2	50.9	18.8	8.6	7.2	5.8	6.0	63.2
	4	890	1988/09/01	1977/11/13	10.80	F	135.4	30.2	70.3	29.5	19.7	51.0	18.8	9.4	7.9	7.7	5.2	65.1
	5	890	1989/09/04	1977/11/13	11.81	F	142.1	35.3	72.8	31.2	19.9	51.0	20.5	11.2	9.4	7.5	7.6	69.3
4	2	891	1986/09/01	1979/01/21	7.61	F	113.7	29.5	61.3	23.6	17.2	49.8	16.0	7.6	5.4	5.2	6.0	52.4
	3	891	1987/08/31	1979/01/21	8.61	F	121.5	21.3	64.8	25.8	19.0	50.2	15.9	7.7	4.5	5.5	4.0	56.7
	4	891	1988/09/01	1979/01/21	9.61	F	125.4	23.1	66.7	25.0	18.9	50.7	16.0	6.1	5.0	5.3	4.2	58.7
	5	891	1989/09/04	1979/01/21	10.62	F	130.9	28.3	70.5	27.6	19.7	50.7	18.7	9.4	5.8	7.0	3.0	60.4
4	2	892	1986/09/01	1978/01/04	8.66	F	126.8	25.0	69.9	25.0	18.0	51.2	18.5	8.2	6.6	4.6	4.8	56.9
	4	892	1988/09/01	1978/01/04	10.66	F	137.3	30.6	75.6	26.3	20.4	51.9	19.7	7.6	4.1	5.2	4.1	61.7
	3	892	1987/08/31	1976/03/25	11.44	F	134.1	28.8	73.1	22.4	19.8	51.9	19.9	8.5	5.0	5.6	5.4	61.0
	5	892	1989/09/04	1978/01/04	11.67	F	142.5	34.7	77.0	29.0	21.0	53.2	21.5	11.8	7.0	5.2	3.4	65.5
3	2	894	1986/09/01	1976/08/25	10.02	F	130.8	40.5	68.2	27.5	19.2	49.9	17.6	11.0	4.8	6.8	3.6	62.6
	3	894	1987/08/31	1976/08/25	11.02	F	136.1	30.1	70.9	28.6	20.2	49.1	19.3	10.3	3.8	10.6	4.4	65.1
	4	894	1988/09/01	1976/08/25	12.02	F	142.1	35.3	74.4	27.8	21.5	49.2	19.4	8.1	3.5	10.4	4.4	67.7
4	2	895	1986/09/01	1974/12/28	11.68	F	152.2	40.3	77.2	34.0	22.2	52.8	19.7	7.6	3.6	6.8	4.8	75.0
	3	895	1987/08/31	1974/12/28	12.67	F	155.7	47.6	78.7	35.3	23.5	53.5	23.5	12.0	5.2	NIL	NIL	77.0

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	895	1988/09/01	1974/12/28	13.68	F	156.4	51.5	81.2	36.1	24.2	54.2	24.4	14.2	4.2	16.6	6.6	75.2
	5	895	1989/09/04	1974/12/28	14.69	F	157.6	55.7	81.4	34.6	24.2	54.7	26.2	16.6	5.5	17.2	9.3	76.2
4	2	896	1986/09/01	1979/06/13	7.22	F	124.8	37.8	65.4	25.6	19.3	49.4	16.4	8.2	4.4	6.0	4.8	59.4
	3	896	1987/08/31	1979/06/13	8.22	F	129.5	26.2	67.2	28.1	20.1	49.3	16.8	8.4	3.5	7.0	4.0	62.3
	4	896	1988/09/01	1979/06/13	9.22	F	133.8	28.0	69.2	29.1	20.8	49.8	17.3	8.6	6.3	6.4	4.4	64.6
	5	896	1989/09/04	1979/06/13	10.23	F	139.1	33.0	73.0	30.5	21.8	49.8	19.7	13.2	4.4	7.6	4.8	66.1
4	2	897	1986/09/01	1976/08/21	10.03	F	128.3	39.3	68.7	26.0	19.0	51.0	17.1	8.0	3.8	6.4	4.4	59.6
	3	897	1987/08/31	1976/08/21	11.03	F	132.5	27.0	69.9	28.4	20.6	50.8	19.0	9.4	4.0	7.2	4.6	62.6
	4	897	1988/09/01	1976/08/21	12.03	F	136.8	28.6	72.1	29.4	21.4	50.9	18.6	8.4	4.1	5.6	5.7	64.7
	5	897	1989/09/04	1976/08/21	13.04	F	144.1	33.6	76.0	30.7	22.1	51.7	20.7	10.5	5.5	7.1	6.2	68.0
4	2	898	1986/09/01	1979/11/08	6.81	F	118.1	30.0	65.0	25.1	19.3	53.7	15.7	8.4	5.4	4.6	4.6	53.1
	3	898	1987/08/31	1979/11/08	7.81	F	125.1	23.1	66.9	25.9	20.6	53.7	17.0	8.3	5.0	4.5	3.8	58.1
	4	898	1988/09/01	1979/11/08	8.81	F	131.1	25.7	70.4	28.5	21.0	53.9	17.4	7.1	4.4	5.4	3.7	60.6
	5	898	1989/09/04	1979/11/08	9.82	F	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL
4	2	899	1986/09/01	1976/11/04	9.83	F	133.3	27.2	67.5	28.2	20.1	51.4	17.6	7.2	4.2	4.6	5.0	65.8
	3	899	1987/08/31	1976/11/04	10.82	F	141.7	31.7	72.4	30.0	21.6	50.1	19.4	7.8	4.2	5.6	3.8	69.3
	4	899	1988/09/01	1976/11/04	11.83	F	152.4	NIL	82.3	NIL	NIL	52.0	23.2	NIL	NIL	NIL	NIL	70.1
	5	899	1989/09/04	1976/11/04	12.83	F	158.3	45.7	82.2	34.2	24.9	52.1	22.8	10.4	5.2	7.8	6.0	76.1
4	2	900	1986/09/01	1975/08/18	11.04	F	139.5	32.1	69.8	26.2	21.1	51.6	17.7	11.0	7.2	6.2	6.6	69.7
	3	900	1987/08/31	1975/08/18	12.04	F	145.2	36.5	72.5	29.6	22.0	52.0	20.4	10.8	4.2	6.6	5.5	72.7
	4	900	1988/09/01	1975/08/18	13.04	F	151.6	42.0	76.5	30.7	23.1	52.2	21.5	10.6	5.4	6.8	4.9	75.1
	5	900	1989/09/04	1975/08/17	14.05	F	155.5	50.9	78.4	34.4	24.3	52.9	24.1	10.2	4.2	9.8	5.8	77.1
3	2	901	1986/09/01	1976/09/04	9.99	F	128.1	27.8	68.2	28.3	20.1	52.4	17.3	12.8	7.8	7.8	6.2	59.8
	3	901	1987/08/31	1976/09/04	10.99	F	136.1	31.2	70.9	30.6	21.2	52.0	20.2	8.0	4.8	6.8	4.8	65.1
	4	901	1988/09/01	1976/09/04	11.99	F	142.4	37.7	74.4	32.2	22.5	53.4	21.9	11.6	5.1	9.4	6.1	68.0
4	2	902	1986/09/01	1978/11/11	7.81	F	128.6	25.3	69.0	28.3	19.5	49.2	16.3	6.8	5.2	5.6	4.8	59.6
	3	902	1987/08/31	1978/11/11	8.80	F	135.6	29.8	71.3	30.0	20.6	49.0	18.8	7.7	4.8	6.0	5.4	64.3
	4	902	1988/09/01	1978/11/11	9.81	F	142.5	31.7	75.9	30.8	21.3	50.3	18.6	6.3	4.9	5.7	4.7	66.6
	5	902	1989/09/04	1978/11/11	10.81	F	147.5	36.9	77.8	32.4	21.4	50.2	20.0	7.6	4.8	5.8	5.4	69.7
4	2	903	1986/09/01	1976/08/05	10.07	F	135.7	26.8	70.7	28.2	18.6	49.7	17.4	8.8	4.0	6.4	4.1	65.0
	3	903	1987/08/31	1976/08/05	11.07	F	140.4	30.1	72.4	29.2	20.0	50.7	20.6	10.5	4.5	6.5	6.6	68.0
	4	903	1988/09/01	1976/08/05	12.07	F	146.3	32.3	75.3	30.3	20.3	50.7	20.6	7.7	3.6	6.9	4.5	71.0
	5	903	1989/09/04	1976/08/05	13.08	F	153.1	37.8	78.6	31.2	21.4	51.1	21.1	12.0	5.9	8.0	5.8	74.5
4	2	904	1986/09/01	1979/03/11	7.48	F	118.3	19.2	61.8	25.2	16.7	51.0	14.5	6.8	3.8	4.8	3.2	56.5
	3	904	1987/08/31	1979/03/11	8.47	F	122.6	21.3	63.9	25.4	17.3	51.2	16.3	7.4	3.9	5.4	3.2	58.7

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	904	1988/09/01	1979/03/11	9.48	F	128.3	24.1	67.0	26.6	17.6	51.9	17.5	7.7	3.9	5.5	3.2	61.3
	5	904	1989/09/04	1979/03/11	10.49	F	135.6	28.3	71.0	28.9	19.4	52.0	18.0	8.4	5.0	5.8	3.3	64.6
1	2	905	1986/09/01	1973/05/02	13.33	F	146.6	40.3	76.2	33.4	23.5	52.4	19.9	9.6	5.8	7.4	6.0	70.4
1	2	906	1986/09/01	1979/05/04	7.33	F	121.1	23.3	65.4	26.6	18.0	49.3	17.2	11.2	3.6	5.4	3.8	55.6
4	2	907	1986/09/01	1976/03/04	10.50	F	140.6	30.6	71.5	30.9	21.2	55.3	19.4	7.4	5.2	8.0	4.8	69.1
	3	907	1987/08/31	1976/03/04	11.49	F	143.3	33.9	71.7	28.4	20.0	53.5	19.8	5.7	3.2	NIL	NIL	71.6
	4	907	1988/09/01	1976/03/04	12.50	F	149.3	38.6	75.7	31.4	20.6	54.5	20.2	6.7	3.4	8.0	5.2	73.6
	5	907	1989/09/04	1976/03/04	13.50	F	153.9	44.9	78.4	33.2	21.5	55.6	21.6	9.3	4.5	8.3	6.4	75.5
4	2	909	1986/09/01	1977/03/28	9.43	F	121.1	26.3	68.3	25.3	19.6	52.0	19.5	12.8	7.6	11.2	8.8	52.7
	3	909	1987/08/31	1977/03/28	10.43	F	127.9	28.8	69.4	28.0	20.8	51.9	20.0	11.0	4.3	9.4	5.8	58.5
	4	909	1988/09/01	1977/03/28	11.43	F	133.8	33.0	71.9	29.4	21.9	52.5	21.1	10.6	6.0	8.2	8.0	61.9
	5	909	1989/09/04	1977/03/28	12.44	F	141.1	40.4	76.2	29.5	22.4	53.1	23.4	15.2	5.6	10.0	7.8	64.8
2	2	910	1986/09/01	1974/12/16	11.71	F	138.2	31.5	72.4	29.7	20.3	51.2	18.9	9.0	8.9	7.4	7.2	65.8
	3	910	1987/08/31	1974/12/16	12.71	F	144.1	38.7	74.2	31.3	21.4	52.2	22.0	10.6	6.2	NIL	NIL	69.9
1	2	913	1986/09/01	1972/08/03	14.08	F	117.1	20.6	63.4	25.8	17.7	51.5	17.5	7.1	4.7	5.2	4.0	53.6
3	2	914	1986/09/01	1978/08/23	8.03	F	129.9	27.1	68.2	29.8	18.6	50.9	18.8	7.0	4.4	4.8	6.8	61.7
	4	914	1988/09/02	1978/08/23	10.03	F	133.1	28.1	69.1	30.2	21.1	51.0	17.4	5.3	3.3	5.5	3.7	63.9
	5	914	1989/09/04	1978/08/23	11.03	F	138.6	33.2	73.3	31.1	22.1	52.5	19.0	9.6	4.7	6.7	5.1	65.3
4	2	915	1986/09/01	1979/07/20	7.12	F	128.4	24.6	67.6	27.8	19.5	50.4	16.8	6.6	3.6	5.4	3.2	60.8
	3	915	1987/08/31	1979/07/20	8.12	F	134.9	28.3	69.9	29.6	20.5	52.3	19.0	7.4	4.0	5.6	3.2	65.0
	4	915	1988/09/01	1979/07/20	9.12	F	139.2	29.2	71.5	28.2	21.2	52.4	18.0	6.4	3.3	4.2	2.7	67.7
	5	915	1989/09/04	1979/07/20	10.13	F	144.9	35.3	74.6	29.8	22.6	53.8	21.3	11.2	5.4	6.0	4.0	70.3
4	2	916	1986/09/01	1980/02/18	6.53	F	118.1	20.1	63.4	25.6	18.4	49.9	15.2	6.0	4.3	4.4	4.4	54.7
	3	916	1987/08/31	1980/02/18	7.53	F	119.6	22.7	66.7	26.9	19.2	52.5	16.1	7.4	4.0	4.8	3.8	52.9
	4	916	1988/09/01	1980/02/18	8.53	F	124.3	24.4	67.9	25.2	19.8	53.6	15.7	6.2	3.4	4.2	3.8	56.4
	5	916	1989/09/04	1980/02/18	9.54	F	129.8	26.9	70.0	28.0	20.7	52.9	18.5	6.2	4.0	4.8	3.4	59.8
2	3	918	1987/09/02	1966/10/02	20.92	M	177.1	63.0	91.4	42.4	26.6	52.0	26.6	5.8	3.8	8.6	5.8	85.6
	5	918	1989/09/04	1966/10/02	22.92	M	177.9	61.7	91.9	42.6	26.2	52.0	25.0	6.0	3.8	8.1	5.2	86.0
1	3	919	1987/09/01	1968/01/26	19.60	F	162.5	71.7	85.3	NIL	NIL	55.4	28.9	NIL	NIL	NIL	NIL	77.2
1	3	924	1987/09/01	1965/09/05	21.99	F	161.7	54.6	82.7	NIL	NIL	53.6	24.5	NIL	NIL	NIL	NIL	79.0
1	3	925	1987/09/01	1970/12/03	16.75	F	156.2	43.8	83.7	NIL	NIL	55.7	22.8	NIL	NIL	NIL	NIL	72.5
1	3	940	1987/09/01	1969/11/27	17.76	F	150.4	48.2	79.8	NIL	NIL	54.4	24.9	NIL	NIL	NIL	NIL	70.6
1	5	956	1989/09/04	1979/11/01	9.84	M	128.8	26.8	68.5	29.5	19.7	52.7	18.8	6.2	3.0	5.2	3.6	60.3
4	2	964	1986/09/01	1976/09/30	9.92	F	142.8	32.3	71.9	30.7	22.1	54.1	18.9	9.2	6.8	3.8	8.0	70.9
	3	964	1987/09/02	1976/09/30	10.92	F	148.5	36.7	74.4	30.9	NIL	53.2	19.3	8.6	4.5	NIL	NIL	74.1

Visits	Vno	StudyNo.	ExamDte	BirthDate	Age	Sex	Hght	Wght	SitHght	BicDiam	BilDiam	HdCirc	Reluac	TrcpSkf	BcpSkf.	SscpSkf	SpilSkf	LgLngth
	4	964	1988/09/01	1976/09/30	11.92	F	155.7	44.8	80.3	33.3	23.9	53.7	22.4	8.6	7.3	10.1	5.5	75.4
	5	964	1989/09/04	1976/09/30	12.93	F	162.5	54.6	83.0	33.2	24.1	54.9	26.6	11.7	11.2	14.2	9.2	79.5
1	2	965	1986/09/01	1969/04/13	17.39	M	167.2	56.1	82.0	37.1	24.6	55.3	22.7	6.0	4.6	8.7	4.8	85.2
1	2	966	1986/09/01	1975/06/01	11.25	F	131.6	25.0	67.9	29.1	19.7	50.2	16.1	8.4	5.4	4.8	4.6	63.7
1	4	1022	1988/09/02	1970/07/05	18.16	F	148.7	52.8	81.3	32.4	24.5	53.5	26.3	23.2	7.2	26.4	12.2	67.4
1	3	1062	1987/08/31	1969/09/17	17.95	F	138.9	34.5	73.1	31.2	21.5	52.4	21.3	11.6	5.4	5.9	3.8	65.8
1	2	1063	1986/09/01	1974/02/02	12.58	F	138.5	31.5	71.5	30.5	19.8	52.2	18.4	9.3	3.6	5.3	4.6	67.0
2	3	1064	1987/09/02	1976/09/15	10.96	F	144.7	35.0	75.0	31.2	NIL	52.7	19.1	6.8	2.8	NIL	NIL	69.7
	4	1064	1988/09/01	1976/09/15	11.96	F	153.8	40.1	79.5	31.7	24.3	53.4	19.2	6.3	2.8	6.5	4.4	74.3
1	4	1067	1988/09/02	1971/09/03	17.00	M	159.2	55.7	80.7	37.4	24.9	55.1	26.2	12.4	4.8	9.3	6.4	78.5
1	4	1068	1988/09/01	1978/03/20	10.45	F	137.2	26.8	69.7	29.6	20.6	52.0	17.7	5.7	4.8	4.6	3.5	67.5
1	4	1069	1988/09/01	1973/07/07	15.15	M	164.9	48.9	85.2	34.6	24.1	54.6	21.8	7.7	4.3	6.9	4.6	79.7
1	4	1070	1988/09/02	1979/08/10	9.06	M	128.4	29.4	67.4	26.2	19.7	53.5	19.6	11.4	5.1	6.9	3.7	61.0
1	4	1071	1988/09/02	1972/01/12	16.64	F	159.9	58.8	83.6	36.1	26.6	57.2	27.2	18.4	5.4	18.8	9.4	76.3
1	4	1072	1988/09/01	1972/04/28	16.35	F	168.5	65.3	85.9	31.8	25.2	59.5	23.7	12.7	5.4	10.1	8.1	82.6
1	4	1073	1988/09/01	1966/04/28	22.35	F	157.9	78.1	83.6	37.4	25.9	58.0	30.5	27.3	18.9	32.6	13.2	74.3
1	4	1075	1988/09/01	1971/01/14	17.63	F	158.5	57.5	83.2	37.0	26.4	53.5	24.6	11.7	5.4	10.9	6.9	75.3
1	4	1076	1988/09/02	1969/06/18	19.21	M	171.4	52.3	87.0	37.2	24.4	56.9	21.3	4.6	3.0	5.6	3.4	84.4
1	4	1077	1988/09/02	1969/10/27	18.85	M	173.6	60.8	86.4	37.8	26.0	55.3	23.2	6.2	3.8	7.6	4.6	87.2
1	4	1079	1988/09/02	1972/12/11	15.73	M	158.7	47.7	81.0	31.9	33.5	54.9	21.4	6.0	3.5	5.5	4.2	77.7
1	4	1080	1988/09/02	1975/06/10	13.23	M	143.2	33.4	74.0	31.2	20.4	54.2	19.7	5.8	4.4	4.2	3.0	69.2
2	2	1082	1986/09/01	1978/03/20	8.45	M	127.3	24.5	66.1	28.0	19.6	51.5	15.4	6.6	3.7	4.5	3.8	61.2
	3	1082	1987/09/02	1978/03/20	9.45	M	131.1	24.2	68.3	28.6	20.1	50.9	16.7	6.2	4.0	4.4	3.6	62.8
1	5	1090	1989/09/04	1980/02/22	9.53	F	134.9	28.8	70.5	29.6	20.2	52.6	19.5	8.4	7.2	6.0	3.4	64.4

APPENDIX C

VAALWATER SECONDARY SEXUAL CHACTERISTICS

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
1	2	1	1986/07/31	1980/07/31	6.00	M	1.00	1.00	1.00	1.00	
4	2	3	1986/07/31	1978/04/08	8.31	M	1.00	1.00	1.00	1.00	
	4	3	1987/07/14	1978/04/08	9.27	M	1.00	1.00	1.00	1.00	
	6	3	1988/07/11	1978/04/08	10.26	M	1.00	1.00	2.00	2.00	
	8	3	1989/07/11	1978/04/08	11.26	M	3.00	2.00	2.00	2.00	
2	2	4	1986/07/31	1979/09/17	6.87	M	1.00	1.00	1.00	1.00	
	4	4	1987/07/14	1979/09/17	7.82	M	1.00	1.00	1.00	1.00	
4	2	5	1986/07/31	1979/11/11	6.72	M	1.00	1.00	1.00	1.00	
	4	5	1987/07/14	1979/11/11	7.67	M	1.00	1.00	2.00	2.00	
	6	5	1988/07/11	1979/11/11	8.66	M	1.00	1.00	2.00	2.00	
	8	5	1989/07/11	1977/11/11	9.66	M	2.00	2.00	3.00	3.00	
3	2	7	1986/07/31	1979/10/06	6.82	M	1.00	1.00	1.00	1.00	
	4	7	1987/07/14	1979/10/06	7.77	M	1.00	1.00	1.00	1.00	
	6	7	1988/07/11	1979/10/06	8.76	M	1.00	1.00	2.00	2.00	
2	2	8	1986/07/31	1979/03/29	7.34	M	1.00	1.00	1.00	1.00	
	4	8	1987/07/14	1979/03/29	8.29	M	NIL	NIL	NIL	NIL	
1	2	9	1986/07/31	1976/12/08	9.64	M	1.00	1.00	1.00	1.00	
1	2	11	1986/07/31	1979/04/15	7.29	M	1.00	1.00	1.00	1.00	
1	2	12	1986/07/31	1978/09/17	7.87	M	1.00	1.00	2.00	2.00	
2	2	13	1986/07/31	1980/04/05	6.32	M	1.00	1.00	1.00	1.00	
	4	13	1987/07/14	1980/04/05	7.27	M	1.00	1.00	1.00	1.00	
3	2	16	1986/07/31	1978/12/28	7.59	M	1.00	1.00	1.00	1.00	
	4	16	1987/07/14	1978/12/28	8.54	M	1.00	1.00	2.00	2.00	
	6	16	1988/07/11	1978/12/28	9.53	M	2.00	1.00	2.00	2.00	
3	2	17	1986/07/28	1979/07/21	7.02	M	1.00	1.00	1.00	1.00	
	4	17	1987/07/14	1979/07/21	7.98	M	1.00	1.00	1.00	1.00	
	6	17	1988/07/11	1979/07/21	8.97	M	1.00	1.00	1.00	1.00	
4	2	18	1986/07/31	1977/10/15	8.79	M	1.00	1.00	1.00	1.00	
	4	18	1987/07/14	1977/10/15	9.75	M	1.00	1.00	2.00	2.00	
	6	18	1988/07/11	1977/10/15	10.74	M	1.00	1.00	2.00	2.00	
	8	18	1989/07/11	1977/10/15	11.74	M	2.00	2.00	2.00	2.00	
2	4	19	1987/07/14	1972/01/01	15.53	M	1.00	1.00	5.00	5.00	
	6	19	1988/07/11	1972/01/01	16.52	M	3.00	3.00	10.00	10.00	
3	4	21	1987/07/14	1976/04/10	11.26	M	1.00	1.00	3.00	3.00	
	6	21	1988/07/11	1976/04/10	12.25	M	1.00	2.00	NIL	NIL	
	8	21	1989/07/11	1976/04/10	13.25	M	1.00	2.00	2.00	0.00	
3	2	22	1986/07/31	1980/09/23	5.85	M	1.00	1.00	1.00	1.00	
	4	22	1987/07/14	1980/09/23	6.81	M	1.00	1.00	1.00	1.00	
	6	22	1988/07/11	1980/09/23	7.80	M	1.00	1.00	1.00	1.00	
3	2	23	1986/07/31	1977/04/11	9.30	M	1.00	1.00	1.00	1.00	

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
	4	23	1987/07/14	1977/04/11	10.26	M	1.00	1.00	2.00	2.00	
	8	23	1989/07/11	1977/04/11	12.25	M	2.00	3.00	4.00	4.00	
1	2	24	1986/07/31	1979/03/08	7.40	M	1.00	1.00	1.00	1.00	
1	2	25	1986/07/31	1976/06/26	10.10	M	1.00	1.00	1.00	1.00	
1	4	26	1987/07/14	1980/11/27	6.63	M	1.00	1.00	1.00	1.00	
2	2	27	1986/07/31	1978/02/08	8.47	M	2.00	1.00	2.00	2.00	
	4	27	1987/07/14	1978/02/08	9.43	M	1.00	1.00	1.00	1.00	
2	2	28	1986/07/31	1978/10/30	7.75	M	1.00	1.00	1.00	1.00	
	4	28	1987/07/14	1978/10/30	8.71	M	1.00	1.00	2.00	2.00	
3	2	29	1986/07/31	1980/01/08	6.56	M	1.00	1.00	1.00	1.00	
	4	29	1987/07/14	1980/01/08	7.51	M	1.00	1.00	1.00	1.00	
	8	29	1989/07/11	1980/01/08	9.50	M	2.00	2.00	2.00	2.00	
1	2	30	1986/07/31	1980/02/17	6.45	M	1.00	1.00	1.00	1.00	
1	2	31	1986/07/31	1981/09/16	4.87	M	1.00	1.00	1.00	1.00	
1	2	32	1986/07/31	1979/05/31	7.17	M	1.00	1.00	1.00	1.00	
	2	33	1986/07/31	1979/01/06	7.56	M	1.00	1.00	1.00	1.00	
3	6	33	1988/07/11	1979/01/06	9.51	M	1.00	1.00	1.00	1.00	
	8	33	1989/07/11	1979/01/06	10.51	M	2.00	2.00	3.00	3.00	
3	2	35	1986/07/31	1978/07/25	8.02	M	2.00	1.00	2.00	2.00	
	4	35	1987/07/14	1978/07/25	8.97	M	1.00	1.00	3.00	3.00	
	6	35	1988/07/11	1978/07/25	9.96	M	2.00	1.00	3.00	3.00	
2	2	36	1986/07/31	1978/02/14	8.46	M	1.00	1.00	1.00	1.00	
	4	36	1987/07/14	1978/02/14	9.41	M	1.00	1.00	1.00	1.00	
3	2	37	1986/07/31	1979/05/08	7.23	M	1.00	1.00	1.00	1.00	
	4	37	1987/07/14	1979/05/08	8.18	M	1.00	1.00	1.00	1.00	
	6	37	1988/07/11	1979/05/08	9.18	M	1.00	1.00	1.00	1.00	
3	2	38	1986/07/31	1978/06/30	8.09	M	1.00	1.00	1.00	1.00	
	4	38	1987/07/14	1978/06/30	9.04	M	1.00	1.00	1.00	1.00	
	8	38	1989/07/11	1978/06/30	11.03	M	1.00	2.00	2.00	2.00	
4	2	39	1986/07/31	1977/05/14	9.21	M	1.00	1.00	1.00	1.00	
	4	39	1987/07/14	1977/05/14	10.17	M	1.00	1.00	1.00	1.00	
	6	39	1988/07/11	1977/05/14	11.16	M	1.00	1.00	NIL	NIL	
	8	39	1989/01/16	1977/05/14	11.68	M	2.00	1.00	2.00	2.00	
3	2	40	1986/07/31	1976/06/12	10.13	M	1.00	1.00	1.00	1.00	
	6	40	1988/07/11	1976/06/12	12.08	M	1.00	1.00	1.00	1.00	
	8	40	1989/07/11	1976/06/12	13.08	M	2.00	2.00	6.00	5.00	
2	4	41	1987/07/14	1978/10/13	8.75	M	1.00	1.00	1.00	1.00	
	6	41	1988/07/11	1978/10/13	9.74	M	1.00	1.00	1.00	1.00	
2	2	42	1986/07/31	1976/11/26	9.68	M	1.00	1.00	1.00	1.00	
	4	42	1987/07/14	1976/11/26	10.63	M	1.00	1.00	2.00	2.00	
2	2	44	1986/07/31	1976/11/08	9.73	M	1.00	1.00	2.00	2.00	

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
	4	44	1987/07/14	1976/11/08	10.68	M	2.00	1.00	2.00	2.00	
4	2	45	1986/07/31	1977/05/03	9.24	M	2.00	1.00	2.00	2.00	
	4	45	1987/07/14	1977/05/03	10.20	M	2.00	1.00	2.00	2.00	
	6	45	1988/07/11	1977/05/03	11.19	M	2.00	1.00	3.00	3.00	
	8	45	1989/07/11	1977/05/03	12.19	M	3.00	2.00	6.00	7.00	
1	2	46	1986/07/31	1974/06/26	12.10	M	2.00	1.00	15.00	7.00	
1	4	48	1987/07/14	1979/12/30	7.54	M	1.00	1.00	2.00	2.00	
1	6	49	1988/07/11	1975/10/30	12.70	M	3.00	1.00	4.00	4.00	
2	2	51	1986/07/31	1976/06/11	10.14	M	1.00	1.00	1.00	1.00	
	6	51	1988/07/11	1976/06/11	12.08	M	2.00	1.00	2.00	2.00	
1	2	52	1986/07/31	1977/04/24	9.27	M	2.00	1.00	2.00	2.00	
3	2	54	1986/07/31	1976/11/07	9.73	M	1.00	1.00	0.00	0.00	
	4	54	1987/07/14	1976/11/07	10.68	M	1.00	1.00	1.00	1.00	
	6	54	1988/07/11	1976/11/07	11.67	M	2.00	1.00	2.00	2.00	
3	2	55	1986/07/31	1977/04/09	9.31	M	1.00	1.00	1.00	1.00	
	4	55	1987/07/14	1977/04/09	10.26	M	1.00	1.00	1.00	1.00	
	6	55	1988/07/11	1977/04/09	11.26	M	2.00	1.00	3.00	2.00	
4	2	56	1986/07/31	1977/03/07	9.40	M	1.00	1.00	1.00	1.00	
	4	56	1987/07/14	1977/03/07	10.35	M	1.00	1.00	1.00	1.00	
	6	56	1988/07/11	1977/03/07	11.35	M	2.00	1.00	2.00	2.00	
	8	56	1989/07/11	1977/03/07	12.35	M	2.00	2.00	2.00	2.00	
3	2	57	1986/07/31	1975/10/07	10.81	M	1.00	1.00	1.00	1.00	
	4	57	1987/07/14	1975/10/07	11.77	M	1.00	2.00	2.00	2.00	
	6	57	1988/07/11	1975/10/07	12.76	M	1.00	3.00	3.00	3.00	
2	2	59	1986/07/31	1978/06/26	8.10	M	1.00	1.00	1.00	1.00	
	6	59	1988/07/11	1978/06/26	10.04	M	2.00	1.00	1.00	1.00	
4	2	60	1986/07/31	1979/06/26	7.10	M	1.00	1.00	1.00	1.00	
	4	60	1987/07/14	1979/06/26	8.05	M	1.00	1.00	1.00	1.00	
	6	60	1988/07/11	1979/06/26	9.04	M	1.00	1.00	1.00	1.00	
	8	60	1989/07/11	1979/06/26	10.04	M	2.00	2.00	3.00	3.00	
4	2	61	1986/07/31	1978/03/20	8.36	M	1.00	1.00	1.00	1.00	
	4	61	1987/07/14	1978/03/20	9.32	M	1.00	1.00	1.00	1.00	
	6	61	1988/07/11	1978/03/20	10.31	M	2.00	1.00	2.00	2.00	
	8	61	1989/07/11	1978/03/20	11.31	M	3.00	2.00	6.00	6.00	

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
3	2	62	1986/07/31	1976/11/26	9.68	M	1.00	1.00	2.00	2.00	
	4	62	1987/07/14	1976/11/26	10.63	M	2.00	1.00	2.00	2.00	
	6	62	1988/07/11	1976/11/26	11.62	M	2.00	1.00	3.00	3.00	
2	4	63	1987/07/14	1974/07/20	12.98	M	1.00	1.00	2.00	2.00	
	6	63	1988/07/11	1974/07/20	13.98	M	1.00	1.00	3.00	4.00	
4	2	64	1986/07/31	1976/04/10	10.31	M	1.00	1.00	1.00	1.00	
	4	64	1987/07/14	1976/04/10	11.26	M	1.00	1.00	1.00	1.00	
	6	64	1988/07/11	1976/04/10	12.25	M	2.00	1.00	3.00	4.00	
	8	64	1989/07/11	1976/04/10	13.25	M	3.00	3.00	6.00	7.00	
2	2	65	1986/07/31	1975/04/11	11.30	M	1.00	1.00	1.00	1.00	
	4	65	1987/07/14	1975/04/11	12.26	M	1.00	1.00	2.00	2.00	
2	2	66	1986/07/31	1973/06/28	13.09	M	1.00	1.00	1.00	1.00	
	4	66	1987/07/14	1973/06/28	14.04	M	1.00	1.00	1.00	1.00	
4	2	67	1986/07/31	1977/04/20	9.28	M	1.00	1.00	1.00	1.00	
	4	67	1987/07/14	1977/04/20	10.23	M	1.00	1.00	2.00	2.00	
	6	67	1988/07/11	1977/04/20	11.22	M	2.00	1.00	3.00	3.00	
	8	67	1989/07/11	1977/04/20	12.22	M	3.00	2.00	7.00	7.00	
2	2	68	1986/07/31	1977/10/04	8.82	M	1.00	1.00	1.00	1.00	
	4	68	1987/07/14	1977/10/04	9.78	M	1.00	1.00	1.00	1.00	
2	2	70	1986/07/31	1978/05/29	8.17	M	1.00	1.00	1.00	1.00	
	4	70	1987/07/14	1978/05/29	9.13	M	1.00	1.00	1.00	1.00	
1	2	71	1986/07/31	1978/07/30	8.00	M	1.00	1.00	1.00	1.00	
2	2	72	1986/07/31	1977/05/12	9.22	M	1.00	1.00	1.00	1.00	
	4	72	1987/07/14	1977/05/12	10.17	M	1.00	1.00	1.00	1.00	
4	2	73	1986/07/31	1975/05/17	11.21	M	1.00	1.00	1.00	1.00	
	4	73	1987/07/14	1975/05/17	12.16	M	1.00	1.00	2.00	2.00	
	6	73	1988/07/11	1975/05/17	13.15	M	2.00	1.00	4.00	4.00	
	8	73	1989/07/11	1975/05/17	14.15	M	3.00	3.00	8.00	8.00	
3	2	74	1986/07/31	1978/04/09	8.31	M	1.00	1.00	1.00	1.00	
	4	74	1987/07/14	1978/04/09	9.26	M	1.00	1.00	2.00	2.00	
	6	74	1988/07/11	1978/04/09	10.26	M	2.00	1.00	5.00	5.00	
4	2	75	1986/07/31	1976/02/23	10.43	M	1.00	1.00	1.00	1.00	
	4	75	1987/07/14	1976/02/23	11.39	M	2.00	1.00	3.00	3.00	

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
	6	75	1988/07/11	1976/02/23	12.38	M	1.00	1.00	1.00	1.00	
	8	75	1989/07/11	1976/02/23	13.38	M	2.00	1.00	3.00	2.00	
2	2	76	1986/07/31	1977/09/23	8.85	M	1.00	1.00	1.00	1.00	
	4	76	1987/07/14	1977/09/23	9.81	M	1.00	1.00	1.00	1.00	
4	2	77	1986/07/31	1977/01/20	9.53	M	1.00	1.00	1.00	1.00	
	4	77	1987/07/14	1977/01/20	10.48	M	1.00	1.00	1.00	1.00	
	6	77	1988/07/11	1977/01/20	11.47	M	1.00	1.00	1.00	1.00	
	8	77	1989/07/11	1977/01/20	12.47	M	3.00	2.00	3.00	3.00	
4	2	78	1986/07/31	1977/11/05	8.73	M	1.00	1.00	1.00	1.00	
	4	78	1987/07/14	1977/11/05	9.69	M	1.00	1.00	1.00	1.00	
	6	78	1988/07/11	1977/11/05	10.68	M	1.00	1.00	2.00	2.00	
	8	78	1989/07/11	1977/11/05	11.68	M	2.00	2.00	5.00	5.00	
2	2	79	1986/07/31	1978/04/09	8.31	M	1.00	1.00	1.00	0.00	
	4	79	1987/07/14	1978/04/09	9.26	M	1.00	1.00	1.00	0.00	
1	2	80	1986/07/31	1975/07/18	11.04	M	1.00	1.00	2.00	2.00	
4	2	81	1986/07/31	1973/10/03	12.83	M	1.00	1.00	4.00	4.00	
	4	81	1987/07/14	1973/10/03	13.78	M	2.00	2.00	8.00	7.00	
	6	81	1988/07/11	1973/10/03	14.77	M	4.00	3.00	10.00	12.00	
	8	81	1989/07/11	1973/10/03	15.77	M	5.00	4.00	15.00	15.00	
4	2	82	1986/07/31	1976/02/01	10.49	M	2.00	1.00	2.00	3.00	
	4	82	1987/07/14	1976/02/01	11.45	M	1.00	1.00	2.00	2.00	
	6	82	1988/07/12	1976/02/01	12.44	M	1.00	1.00	1.00	1.00	
	8	82	1989/07/11	1976/02/01	13.44	M	3.00	3.00	10.00	8.00	
4	2	83	1986/07/31	1974/07/04	12.07	M	3.00	2.00	12.00	15.00	
	4	83	1987/07/14	1974/07/04	13.03	M	3.00	2.00	25.00	25.00	
	6	83	1988/07/11	1974/07/04	14.02	M	5.00	4.00	20.00	20.00	
	8	83	1989/07/11	1974/07/04	15.02	M	5.00	4.00	21.00	25.00	
2	2	84	1986/07/31	1973/02/05	13.48	M	2.00	1.00	5.00	8.00	
	4	84	1987/07/14	1973/02/05	14.44	M	2.00	2.00	11.00	11.00	
3	2	85	1986/07/31	1974/06/24	12.10	M	1.00	1.00	2.00	2.00	
	4	85	1987/07/14	1974/06/24	13.06	M	1.00	1.00	2.00	2.00	
	6	85	1988/07/11	1974/06/24	14.05	M	1.00	1.00	2.00	2.00	

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
4	2	87	1986/07/31	1974/10/05	11.82	M	2.00	1.00	8.00	8.00	
	4	87	1987/07/14	1974/10/05	12.00	M	2.00	2.00	8.00	8.00	
	6	87	1988/07/11	1974/10/05	13.76	M	4.00	3.00	12.00	12.00	
	8	87	1989/07/11	1974/10/05	14.76	M	5.00	4.00	16.00	15.00	
4	2	88	1986/07/31	1975/01/09	11.56	M	1.00	2.00	2.00	2.00	
	4	88	1987/07/14	1975/01/09	12.56	M	1.00	1.00	2.00	2.00	
	6	88	1988/07/11	1975/01/09	13.50	M	2.00	2.00	5.00	5.00	
	8	88	1989/07/11	1975/01/09	14.51	M	3.00	3.00	7.00	7.00	
2	2	89	1986/07/31	1976/11/02	9.74	M	1.00	1.00	1.00	1.00	
	4	89	1987/07/14	1976/11/02	10.70	M	1.00	1.00	1.00	1.00	
2	2	90	1986/07/31	1976/12/21	9.61	M	1.00	1.00	3.00	3.00	
	6	90	1988/07/11	1976/12/21	11.55	M	3.00	2.00	10.00	10.00	
4	2	91	1986/07/31	1976/10/20	9.78	M	1.00	1.00	2.00	2.00	
	4	91	1987/07/14	1976/10/20	10.72	M	1.00	1.00	2.00	2.00	
	6	91	1988/07/11	1976/10/20	11.72	M	1.00	1.00	2.00	3.00	
	8	91	1989/07/11	1976/10/20	12.72	M	2.00	2.00	5.00	5.00	
4	2	92	1986/07/31	1975/09/24	10.85	M	1.00	1.00	2.00	2.00	
	4	92	1987/07/14	1975/09/24	11.80	M	1.00	1.00	2.00	2.00	
	6	92	1988/07/11	1975/09/24	12.79	M	1.00	1.00	3.00	3.00	
	8	92	1989/07/11	1975/09/24	13.79	M	3.00	2.00	7.00	7.00	
2	2	93	1986/07/31	1976/08/30	9.92	M	1.00	1.00	1.00	1.00	
	4	93	1987/07/14	1976/08/30	10.87	M	1.00	1.00	1.00	1.00	
3	4	94	1987/07/14	1974/06/20	13.06	M	2.00	1.00	5.00	5.00	
	6	94	1988/07/11	1974/06/20	14.06	M	3.00	2.00	10.00	10.00	
	8	94	1989/07/11	1974/06/20	15.06	M	4.00	3.00	16.00	14.00	
2	2	95	1986/07/31	1975/09/10	10.89	M	2.00	2.00	4.00	4.00	
	4	95	1987/07/14	1975/09/10	11.84	M	2.00	1.00	8.00	8.00	
3	2	96	1986/07/31	1974/11/11	11.72	M	2.00	1.00	4.00	4.00	
	4	96	1987/07/14	1974/11/11	12.67	M	3.00	2.00	6.00	6.00	
	8	96	1989/07/11	1974/11/11	14.66	M	5.00	4.00	15.00	15.00	
4	2	97	1986/07/31	1974/06/08	12.1	M	1.00	1.00	3.00	2.00	

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
					5						
	4	97	1987/07/14	1974/06/08	13.15	M	1.00	1.00	3.00	3.00	
	6	97	1988/07/11	1974/06/08	14.09	M	2.00	2.00	5.00	5.00	
	8	97	1989/07/11	1974/06/08	15.09	M	3.00	3.00	7.00	7.00	
4	2	98	1986/07/31	1974/06/27	12.09	M	2.00	1.00	5.00	5.00	
	4	98	1987/07/14	1974/06/27	13.09	M	2.00	2.00	10.00	10.00	
	6	98	1988/07/11	1974/06/27	14.04	M	4.00	4.00	15.00	15.00	
	8	98	1989/07/11	1974/06/27	15.04	M	5.00	5.00	22.00	22.00	
4	2	100	1986/07/31	1973/01/06	13.56	M	3.00	2.00	10.00	10.00	
	4	100	1987/07/14	1973/01/06	14.56	M	2.00	2.00	12.00	11.00	
	6	100	1988/07/11	1973/01/06	15.51	M	4.00	3.00	12.00	12.00	
	8	100	1989/07/11	1973/01/06	16.51	M	5.00	4.00	20.00	20.00	
4	2	101	1986/07/31	1974/05/10	12.23	M	3.00	2.00	20.00	15.00	
	4	101	1987/07/14	1974/05/10	13.23	M	4.00	4.00	20.00	20.00	
	6	101	1988/07/11	1974/05/10	14.17	M	4.00	4.00	20.00	20.00	
	8	101	1989/07/11	1974/05/10	15.17	M	5.00	5.00	24.00	24.00	
3	2	102	1986/07/31	1972/01/11	14.55	M	2.00	2.00	8.00	8.00	
	4	102	1987/07/14	1972/01/11	15.51	M	3.00	3.00	8.00	8.00	
	6	102	1988/07/11	1972/01/11	16.50	M	3.00	4.00	15.00	15.00	
4	2	103	1986/07/31	1972/06/22	14.11	M	3.00	1.00	8.00	8.00	
	4	103	1987/07/14	1972/06/22	15.11	M	2.00	2.00	10.00	10.00	
	6	103	1988/07/11	1972/06/22	16.05	M	3.00	3.00	15.00	12.00	
	8	103	1989/07/11	1972/06/22	17.05	M	5.00	4.00	20.00	19.00	
2	2	104	1986/07/31	1975/07/29	11.01	M	2.00	1.00	5.00	5.00	
	4	104	1987/07/14	1975/07/29	11.96	M	1.00	1.00	1.00	1.00	
3	2	105	1986/07/31	1972/03/09	14.39	M	2.00	2.00	3.00	3.00	
	4	105	1987/07/14	1972/03/09	15.35	M	2.00	1.00	5.00	4.00	
	6	105	1988/07/11	1972/03/09	16.34	M	2.00	2.00	6.00	6.00	
2	2	106	1986/07/31	1971/12/23	14.60	M	4.00	3.00	10.00	10.00	

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
	4	106	1987/07/14	1971/12/23	15.56	M	4.00	4.00	10.00	12.00	
4	2	108	1986/07/31	1970/07/30	16.00	M	3.00	2.00	15.00	15.00	
	4	108	1987/07/14	1970/07/30	16.96	M	4.00	4.00	20.00	20.00	
	6	108	1988/07/11	1970/07/30	17.95	M	4.00	4.00	25.00	25.00	
	8	108	1989/07/11	1970/07/30	18.95	M	5.00	5.00	26.00	26.00	
3	2	109	1986/07/31	1970/07/30	16.00	M	5.00	4.00	20.00	20.00	
	4	109	1987/07/14	1970/07/30	16.96	M	5.00	5.00	20.00	20.00	
	6	109	1988/07/11	1970/07/30	17.95	M	5.00	5.00	20.00	20.00	
1	2	110	1986/07/31	1970/04/08	16.31	M	3.00	3.00	20.00	20.00	
2	2	111	1986/07/31	1970/05/25	16.18	M	2.00	1.00	5.00	4.00	
	4	111	1987/07/14	1970/05/25	17.14	M	2.00	1.00	7.00	7.00	
2	2	112	1986/07/31	1974/01/08	12.56	M	2.00	1.00	8.00	8.00	
	4	112	1987/07/14	1974/01/08	13.51	M	2.00	2.00	12.00	12.00	
4	2	114	1986/07/31	1972/02/05	14.48	M	3.00	3.00	10.00	10.00	
	4	114	1987/07/14	1972/02/05	15.44	M	5.00	5.00	8.00	8.00	
	6	114	1988/07/11	1972/02/05	16.43	M	4.00	5.00	8.00	10.00	
	8	114	1989/07/11	1972/02/05	17.43	M	5.00	5.00	12.00	12.00	
2	2	115	1986/07/31	1971/12/01	14.66	M	4.00	4.00	15.00	15.00	
	4	115	1987/07/14	1971/12/01	15.62	M	5.00	5.00	20.00	20.00	
4	2	116	1986/07/31	1972/12/25	13.60	M	4.00	4.00	12.00	12.00	
	4	116	1987/07/14	1972/12/25	14.55	M	4.00	4.00	20.00	20.00	
	6	116	1988/07/11	1972/12/25	15.54	M	5.00	4.00	20.00	20.00	
	8	116	1989/07/11	1972/12/25	16.54	M	5.00	5.00	24.00	24.00	
2	4	117	1987/07/14	1969/06/03	18.11	M	4.00	4.00	12.00	12.00	
	6	117	1988/07/11	1969/06/03	19.10	M	4.00	5.00	17.00	17.00	
2	2	118	1986/07/31	1972/10/20	13.78	M	2.00	1.00	3.00	3.00	
	4	118	1987/07/14	1972/10/20	14.73	M	2.00	1.00	8.00	8.00	
2	2	119	1986/07/31	1970/08/17	15.95	M	2.00	1.00	7.00	7.00	
	4	119	1987/07/14	1970/08/17	16.91	M	3.00	2.00	15.00	15.00	

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
2	2	120	1986/07/31	1971/02/21	15.44	M	3.00	2.00	6.00	6.00	
	6	120	1988/07/11	1971/02/21	17.38	M	3.00	4.00	12.00	12.00	
3	2	121	1986/07/31	1972/02/16	14.45	M	1.00	1.00	2.00	2.00	
	4	121	1987/07/14	1972/02/16	15.41	M	2.00	2.00	10.00	10.00	
	6	121	1988/07/11	1972/02/16	16.40	M	4.00	3.00	20.00	20.00	
3	2	122	1986/07/31	1974/08/13	11.96	M	1.00	1.00	2.00	2.00	
	4	122	1987/07/14	1974/08/13	12.92	M	2.00	2.00	7.00	8.00	
	6	122	1988/07/11	1974/08/13	13.91	M	3.00	4.00	12.00	12.00	
2	2	124	1986/07/31	1971/06/05	15.15	M	3.00	2.00	9.00	9.00	
	4	124	1987/07/14	1971/06/05	16.11	M	4.00	4.00	12.00	15.00	
3	2	126	1986/07/31	1971/02/06	15.48	M	1.00	1.00	3.00	3.00	
	4	126	1987/07/14	1971/02/06	16.43	M	2.00	2.00	7.00	7.00	
	6	126	1988/07/11	1971/02/06	17.42	M	3.00	3.00	8.00	10.00	
4	2	127	1986/07/31	1974/02/04	12.49	M	1.00	1.00	1.00	1.00	
	4	127	1987/07/14	1974/02/04	13.44	M	2.00	1.00	4.00	4.00	
	6	127	1988/07/11	1974/02/04	14.43	M	3.00	2.00	7.00	7.00	
	8	127	1989/07/11	1974/02/04	15.43	M	4.00	3.00	13.00	14.00	
2	2	128	1986/07/31	1974/06/13	12.13	M	1.00	1.00	1.00	1.00	
	4	128	1987/07/14	1974/06/13	13.09	M	1.00	1.00	1.00	1.00	
2	2	129	1986/07/31	1973/08/05	12.99	M	1.00	1.00	2.00	2.00	
	4	129	1987/07/14	1973/08/05	13.94	M	1.00	1.00	5.00	4.00	
	2	130	1986/07/31	1972/02/03	14.49	M	2.00	1.00	6.00	6.00	
3	4	130	1987/07/14	1972/02/03	15.44	M	2.00	1.00	12.00	12.00	
	6	130	1988/07/11	1972/02/03	16.43	M	3.00	2.00	17.00	17.00	
4	2	131	1986/07/31	1975/03/25	11.35	M	1.00	1.00	1.00	1.00	
	4	131	1987/07/14	1975/03/25	12.30	M	1.00	1.00	2.00	2.00	
	6	131	1988/07/11	1975/03/25	13.30	M	1.00	1.00	3.00	3.00	
	8	131	1989/07/11	1975/03/25	14.30	M	3.00	2.00	9.00	8.00	
3	2	132	1986/07/31	1969/10/15	16.79	M	5.00	5.00	22.00	22.00	

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
	4	132	1987/07/14	1969/10/15	17.75	M	5.00	4.00	15.00	15.00	
	6	132	1988/07/11	1969/10/15	18.74	M	5.00	5.00	20.00	20.00	
4	2	133	1986/07/31	1974/05/15	12.21	M	1.00	1.00	3.00	3.00	
	4	133	1987/07/14	1974/05/15	13.17	M	2.00	1.00	7.00	8.00	
	6	133	1988/07/11	1974/05/15	14.16	M	4.00	3.00	12.00	12.00	
	8	133	1989/07/11	1974/05/15	15.16	M	4.00	4.00	20.00	20.00	
2	2	134	1986/07/31	1972/02/15	14.45	M	1.00	1.00	6.00	6.00	
	4	134	1987/07/14	1972/02/15	15.41	M	3.00	3.00	8.00	20.00	
4	2	135	1986/07/31	1974/09/14	11.88	M	1.00	1.00	2.00	2.00	
	4	135	1987/07/14	1974/09/14	12.83	M	2.00	1.00	5.00	5.00	
	6	135	1988/07/11	1974/09/14	13.82	M	3.00	2.00	10.00	10.00	
	8	135	1989/07/11	1974/09/14	14.82	M	5.00	4.00	19.00	19.00	
2	2	136	1986/07/31	1966/03/07	20.48	M	4.00	4.00	13.00	13.00	
	4	136	1987/07/14	1966/03/07	21.35	M	4.00	4.00	12.00	12.00	
3	2	137	1986/07/31	1972/06/06	14.15	M	2.00	1.00	5.00	5.00	
	4	137	1987/07/14	1972/06/06	15.41	M	3.00	2.00	10.00	10.00	
	6	137	1988/07/11	1972/06/06	16.10	M	4.00	4.00	15.00	15.00	
2	2	138	1986/07/31	1972/10/18	13.78	M	1.00	1.00	2.00	2.00	
	4	138	1987/07/14	1972/10/18	14.75	M	2.00	1.00	5.00	5.00	
	4	139	1987/07/14	1968/07/03	18.03	M	5.00	5.00	20.00	18.00	
2	2	139	1986/07/31	1968/07/03	18.08	M	5.00	5.00	20.00	20.00	
4	2	141	1986/07/31	1972/10/13	13.80	M	1.00	1.00	2.00	2.00	
	4	141	1987/07/14	1972/10/13	14.75	M	2.00	2.00	6.00	6.00	
	6	141	1988/07/11	1972/10/13	15.74	M	3.00	3.00	8.00	8.00	
	8	141	1989/07/11	1972/10/13	16.74	M	5.00	4.00	14.00	15.00	
2	2	142	1986/07/31	1969/12/05	16.65	M	5.00	5.00	15.00	15.00	
	4	142	1987/07/14	1969/12/05	17.61	M	5.00	5.00	15.00	15.00	
1	2	143	1986/07/31	1973/01/20	13.53	M	2.00	1.00	8.00	8.00	
2	4	144	1987/07/14	1972/08/14	14.92	M	3.00	3.00	6.00	6.00	

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
	6	144	1988/07/11	1972/08/14	15.91	M	4.00	3.00	8.00	8.00	
4	2	146	1986/07/31	1972/11/12	13.72	M	2.00	1.00	8.00	8.00	
	4	146	1987/07/14	1972/11/12	14.66	M	4.00	4.00	20.00	20.00	
	6	146	1988/07/11	1972/11/12	15.66	M	4.00	4.00	18.00	18.00	
	8	146	1989/07/11	1972/11/12	16.66	M	5.00	5.00	18.00	18.00	
1	2	147	1986/07/31	1971/08/07	14.98	M	3.00	3.00	12.00	12.00	
3	4	148	1987/07/14	1968/03/04	19.36	M	4.00	4.00	12.00	12.00	
	6	148	1988/07/11	1968/03/04	20.35	M	5.00	4.00	13.00	13.00	
	8	148	1989/07/11	1968/03/04	21.35	M	5.00	4.00	16.00	15.00	
2	2	150	1986/07/31	1970/03/05	16.41	M	4.00	4.00	10.00	10.00	
	4	150	1987/07/14	1970/03/05	17.41	M	5.00	2.00	25.00	25.00	
3	2	151	1986/07/31	1967/07/11	19.06	M	5.00	5.00	15.00	13.00	
	4	151	1987/07/14	1967/07/11	20.01	M	5.00	2.00	20.00	18.00	
	6	151	1988/07/11	1967/07/11	21.00	M	5.00	5.00	18.00	18.00	
1	2	152	1986/07/31	1969/03/22	17.36	M	4.00	4.00	15.00	15.00	
1	2	153	1986/07/31	1972/10/17	13.79	M	2.00	2.00	7.00	8.00	
2	2	154	1986/07/31	1968/06/09	18.14	M	5.00	5.00	16.00	16.00	
	4	154	1987/07/14	1968/06/09	19.10	M	5.00	2.00	20.00	18.00	
3	2	155	1986/07/31	1972/12/26	13.59	M	1.00	1.00	3.00	3.00	
	4	155	1987/07/14	1972/12/26	14.45	M	2.00	1.00	7.00	7.00	
	6	155	1988/07/11	1972/12/26	15.54	M	3.00	2.00	8.00	9.00	
4	2	156	1986/07/31	1973/01/06	13.56	M	2.00	1.00	5.00	5.00	
	4	156	1987/07/14	1973/01/06	14.52	M	3.00	3.00	8.00	8.00	
	6	156	1988/07/11	1973/01/06	15.51	M	4.00	4.00	12.00	10.00	
	8	156	1989/07/11	1973/01/06	16.51	M	5.00	5.00	16.00	16.00	
3	2	157	1986/07/31	1971/05/03	15.24	M	1.00	1.00	2.00	2.00	
	4	157	1987/07/14	1971/05/03	16.20	M	2.00	2.00	7.00	7.00	
	6	157	1988/07/11	1971/05/03	17.19	M	4.00	4.00	8.00	8.00	
2	2	158	1986/07/31	1968/01/05	18.57	M	5.00	5.00	12.00	12.00	

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
	4	158	1987/07/14	1968/01/05	19.52	M	5.00	5.00	20.00	25.00	
3	2	159	1986/07/31	1968/04/07	18.32	M	5.00	5.00	18.00	0.00	
	4	159	1987/07/14	1968/04/07	19.27	M	5.00	5.00	20.00	0.00	
	6	159	1988/07/11	1968/04/07	20.26	M	5.00	6.00	20.00	20.00	
3	2	160	1986/07/31	1971/05/22	15.19	M	3.00	4.00	8.00	8.00	
	4	160	1987/07/14	1971/05/22	16.15	M	4.00	4.00	12.00	12.00	
	6	160	1988/07/11	1971/05/22	17.14	M	4.00	4.00	15.00	15.00	
1	2	161	1986/07/31	1968/08/18	17.95	M	5.00	4.00	15.00	15.00	
3	2	162	1986/07/31	1965/11/10	20.72	M	5.00	5.00	18.00	18.00	
	4	162	1987/07/14	1965/11/10	21.67	M	5.00	5.00	25.00	25.00	
	6	162	1988/07/11	1965/11/10	22.67	M	5.00	4.00	25.00	25.00	
4	2	163	1986/07/31	1969/05/19	17.20	M	5.00	5.00	18.00	18.00	
	4	163	1987/07/14	1969/05/19	18.15	M	5.00	5.00	20.00	18.00	
	6	163	1988/07/11	1969/05/19	19.15	M	5.00	5.00	20.00	20.00	
	8	163	1989/07/11	1969/05/19	20.15	M	5.00	5.00	24.00	24.00	
2	4	166	1987/07/14	1979/04/08	8.27	F	1.00	1.00			0.00
	6	166	1988/07/11	1979/04/08	9.26	F	1.00	1.00			0.00
3	2	167	1986/07/31	1978/11/04	7.74	F	1.00	1.00			0.00
	4	167	1987/07/14	1978/11/04	8.69	F	1.00	1.00			0.00
	8	167	1989/07/11	1978/11/04	10.68	F	1.00	1.00			0.00
3	4	168	1987/07/14	1974/10/04	12.78	F	1.00	1.00			0.00
	6	168	1988/07/11	1974/10/04	13.77	F	1.00	1.00			0.00
	8	168	1989/07/11	1974/10/04	14.77	F	1.00	1.00			0.00
3	2	169	1986/07/31	1979/04/14	7.30	F	1.00	1.00			0.00
	4	169	1987/07/14	1979/04/14	8.25	F	1.00	1.00			0.00
	6	169	1988/07/11	1979/04/14	9.24	F	1.00	1.00			0.00
1	2	171	1986/07/31	1980/07/10	6.06	F	1.00	1.00			0.00
3	4	173	1987/07/14	1980/07/03	7.03	F	1.00	1.00			0.00
	6	173	1988/07/11	1980/07/03	8.02	F	1.00	1.00			0.00
	8	173	1989/07/11	1980/07/03	9.02	F	1.00	1.00			0.00
4	2	174	1986/07/31	1979/12/11	6.64	F	1.00	1.00			0.00
	4	174	1987/07/14	1979/12/11	7.59	F	1.00	1.00			0.00
	6	174	1988/07/11	1979/12/11	8.58	F	1.00	1.00			0.00
	8	174	1989/07/11	1979/12/11	9.58	F	1.00	1.00			0.00
3	2	175	1986/07/31	1980/12/30	5.58	F	1.00	1.00			0.00
	4	175	1987/07/14	1980/12/30	6.54	F	1.00	1.00			0.00

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
	6	175	1988/07/11	1980/12/30	7.53	F	1.00	1.00			0.00
3	2	176	1986/07/31	1980/01/07	6.56	F	1.00	1.00			0.00
	4	176	1987/07/14	1980/01/07	7.52	F	1.00	1.00			0.00
	6	176	1988/07/11	1980/01/07	8.51	F	1.00	1.00			0.00
4	2	177	1986/07/31	1978/06/04	8.16	F	1.00	1.00			0.00
	4	177	1987/07/14	1978/06/04	9.11	F	1.00	1.00			0.00
	6	177	1988/07/11	1978/06/04	10.10	F	1.00	1.00			0.00
	8	177	1989/07/11	1978/06/04	11.10	F	3.00	4.00			0.00
3	2	178	1986/07/31	1979/07/02	7.08	F	1.00	1.00			0.00
	4	178	1987/07/14	1979/07/02	8.03	F	1.00	1.00			0.00
	6	178	1988/07/11	1979/07/02	9.02	F	1.00	1.00			0.00
3	4	179	1987/07/14	1978/09/16	8.83	F	1.00	1.00			0.00
	6	179	1988/07/11	1978/09/16	9.82	F	1.00	1.00			0.00
	8	179	1989/07/11	1978/09/16	10.82	F	2.00	1.00			0.00
2	2	180	1986/07/31	1980/11/01	5.75	F	1.00	1.00			0.00
	4	180	1987/07/14	1980/11/01	6.70	F	1.00	1.00			0.00
1	2	181	1986/07/31	1978/06/10	8.14	F	1.00	1.00			0.00
1	4	184	1987/07/14	1980/01/07	7.52	F	1.00	1.00			0.00
1	6	184	1988/07/12	1971/08/02	16.94	F	5.00	5.00			1.00
2	2	185	1986/07/31	1979/07/07	7.07	F	1.00	1.00			0.00
	8	185	1989/07/11	1979/07/07	10.01	F	1.00	1.00			0.00
4	2	186	1986/07/31	1977/12/10	8.64	F	1.00	1.00			0.00
	4	186	1987/07/14	1977/12/10	9.59	F	1.00	1.00			0.00
	6	186	1988/07/11	1977/12/10	10.58	F	1.00	2.00			0.00
	8	186	1989/07/11	1977/12/10	11.58	F	1.00	2.00			0.00
2	2	187	1986/07/31	1978/10/07	7.81	F	1.00	1.00			0.00
	4	187	1987/07/14	1978/10/07	8.77	F	1.00	1.00			0.00
2	2	188	1986/07/31	1979/09/28	6.84	F	1.00	1.00			0.00
	4	188	1987/07/14	1979/09/28	7.79	F	1.00	1.00			0.00
3	2	189	1986/07/31	1980/05/12	6.22	F	1.00	1.00			0.00
	4	189	1987/07/14	1980/05/12	7.17	F	1.00	1.00			0.00
	6	189	1988/07/11	1980/05/12	8.16	F	1.00	1.00			0.00
2	2	191	1986/07/31	1979/08/30	6.92	F	1.00	1.00			0.00
	4	191	1987/07/14	1979/08/30	7.87	F	1.00	1.00			0.00
2	2	192	1986/07/31	1979/06/04	7.16	F	1.00	1.00			0.00
	4	192	1987/07/14	1979/06/04	8.11	F	NIL	NIL			NIL
2	2	193	1986/07/31	1978/07/18	8.04	F	1.00	1.00			0.00
	4	193	1987/07/14	1978/07/18	8.99	F	1.00	1.00			0.00
2	2	194	1986/07/31	1978/06/12	8.13	F	1.00	1.00			0.00
	4	194	1987/07/14	1978/06/12	9.09	F	1.00	1.00			0.00
3	4	195	1987/07/14	1977/09/03	9.86	F	1.00	1.00			0.00
	6	195	1988/07/11	1977/09/03	10.85	F	1.00	1.00			0.00
	8	195	1989/07/11	1977/09/03	11.85	F	2.00	1.00			0.00
3	2	197	1986/07/31	1978/10/24	7.77	F	1.00	1.00			0.00

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
	6	197	1988/07/11	1978/10/24	9.71	F	1.00	1.00			0.00
	8	197	1989/07/11	1978/10/24	10.71	F	1.00	1.00			0.00
4	2	198	1986/07/31	1978/08/29	7.92	F	1.00	1.00			0.00
	4	198	1987/07/14	1978/08/29	8.87	F	1.00	1.00			0.00
	6	198	1988/07/11	1978/08/29	9.87	F	1.00	1.00			0.00
	8	198	1989/07/11	1978/08/29	10.87	F	1.00	1.00			0.00
4	2	199	1986/07/31	1978/04/12	8.30	F	1.00	1.00			0.00
	4	199	1987/07/14	1978/04/12	9.26	F	1.00	1.00			0.00
	6	199	1988/07/11	1978/04/12	10.25	F	1.00	1.00			0.00
	8	199	1989/07/11	1978/04/12	11.25	F	1.00	1.00			0.00
4	2	200	1986/07/31	1978/11/11	7.72	F	1.00	1.00			0.00
	4	200	1987/07/14	1978/11/11	8.67	F	1.00	1.00			0.00
	6	200	1988/07/11	1978/11/11	9.66	F	1.00	1.00			0.00
	8	200	1989/07/11	1978/11/11	10.66	F	1.00	1.00			0.00
4	2	201	1986/07/31	1977/10/11	8.80	F	1.00	1.00			0.00
	4	201	1987/07/14	1977/10/11	9.76	F	1.00	1.00			0.00
	6	201	1988/07/11	1977/10/11	10.75	F	1.00	1.00			0.00
	8	201	1989/07/11	1977/10/11	11.75	F	2.00	3.00			0.00
1	2	202	1986/07/31	1974/05/05	12.24	F	1.00	1.00			0.00
1	2	203	1986/07/31	1972/09/13	13.88	F	4.00	3.00			1.00
3	2	204	1986/07/31	1977/01/14	9.54	F	1.00	1.00			0.00
	4	204	1987/07/14	1977/01/14	10.50	F	1.00	1.00			0.00
	6	204	1988/07/11	1977/01/14	11.49	F	1.00	1.00			0.00
4	2	205	1986/07/31	1978/04/01	8.33	F	1.00	1.00			0.00
	4	205	1987/07/14	1978/04/01	9.29	F	1.00	1.00			0.00
	6	205	1988/07/11	1978/04/01	10.28	F	1.00	1.00			0.00
	8	205	1989/07/11	1978/04/01	11.28	F	1.00	1.00			0.00
3	2	207	1986/07/31	1977/06/22	9.11	F	1.00	1.00			0.00
	6	207	1988/07/11	1977/06/22	11.05	F	1.00	2.00			0.00
	8	207	1989/07/11	1977/06/22	12.05	F	2.00	3.00			0.00
3	2	208	1986/07/31	1975/03/17	11.37	F	1.00	1.00			0.00
	4	208	1987/07/14	1975/03/17	12.33	F	1.00	1.00			0.00
	6	208	1988/07/11	1975/03/17	13.32	F	1.00	1.00			0.00
3	2	209	1986/07/31	1976/01/16	10.54	F	1.00	1.00			0.00
	4	209	1987/07/14	1976/01/16	11.49	F	1.00	1.00			0.00

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
	8	209	1989/07/11	1976/01/16	13.48	F	1.00	2.00			0.00
3	2	210	1986/07/31	1980/06/14	6.13	F	1.00	1.00			0.00
	4	210	1987/07/14	1980/06/14	7.08	F	1.00	1.00			0.00
	6	210	1988/07/11	1980/06/14	8.07	F	1.00	1.00			0.00
4	2	211	1986/07/31	1978/05/04	8.24	F	1.00	1.00			0.00
	4	211	1987/07/14	1978/05/04	9.20	F	1.00	1.00			0.00
	6	211	1988/07/11	1978/05/04	10.19	F	1.00	1.00			0.00
	8	211	1989/07/11	1978/05/04	11.19	F	1.00	1.00			0.00
4	2	212	1986/07/31	1974/01/02	12.58	F	1.00	1.00			0.00
	4	212	1987/07/14	1974/01/02	13.53	F	2.00	1.00			0.00
	6	212	1988/07/11	1974/01/02	14.52	F	3.00	2.00			0.00
	8	212	1989/07/11	1974/01/02	15.52	F	4.00	4.00			0.00
4	2	214	1986/07/31	1976/03/23	10.36	F	1.00	1.00			0.00
	4	214	1987/07/14	1976/03/23	11.31	F	1.00	1.00			0.00
	6	214	1988/07/11	1976/03/23	12.30	F	1.00	1.00			0.00
	8	214	1989/07/11	1976/03/23	13.30	F	2.00	1.00			0.00
4	2	215	1986/07/31	1976/11/27	9.67	F	1.00	1.00			0.00
	4	215	1987/07/14	1976/11/27	10.63	F	1.00	1.00			0.00
	6	215	1988/07/11	1976/11/27	11.62	F	1.00	1.00			0.00
	8	215	1989/07/11	1976/11/27	12.62	F	2.00	1.00			0.00
4	2	216	1986/07/31	1978/04/22	8.27	F	1.00	1.00			0.00
	4	216	1987/07/14	1978/04/22	9.23	F	1.00	1.00			0.00
	6	216	1988/07/11	1978/04/22	10.22	F	1.00	1.00			0.00
	8	216	1989/07/11	1978/04/22	11.22	F	2.00	1.00			0.00
1	2	217	1986/07/31	1978/02/11	8.47	F	1.00	1.00			0.00
2	2	218	1986/07/31	1973/04/21	13.28	F	1.00	1.00			0.00
	4	218	1987/07/14	1973/04/21	14.23	F	1.00	1.00			0.00
4	2	219	1986/07/31	1976/06/22	10.11	F	1.00	1.00			0.00
	4	219	1987/07/14	1976/06/22	11.06	F	1.00	1.00			0.00
	6	219	1988/07/11	1976/06/22	12.05	F	1.00	1.00			0.00
	8	219	1989/07/11	1976/06/22	13.05	F	2.00	1.00			0.00
2	2	220	1986/07/31	1976/01/21	10.52	F	1.00	1.00			0.00
	4	220	1987/07/14	1976/01/21	11.4	F	1.00	1.00			0.00

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
					8						
1	2	221	1986/07/31	1973/06/01	13.16	F	1.00	1.00			0.00
2	2	222	1986/07/31	1977/05/10	9.23	F	1.00	1.00			0.00
	6	222	1988/07/12	1977/05/10	11.17	F	1.00	1.00			0.00
2	4	223	1987/07/14	1977/01/09	10.51	F	1.00	1.00			0.00
	6	223	1988/07/12	1977/01/09	11.50	F	1.00	1.00			0.00
2	4	224	1987/07/14	1977/03/10	10.35	F	3.00	2.00			0.00
	6	224	1988/07/11	1977/03/10	11.34	F	5.00	3.00			0.00
2	2	225	1986/07/31	1972/05/16	14.21	F	4.00	3.00			0.00
	4	225	1987/07/14	1972/05/16	15.16	F	5.00	5.00			1.00
3	2	226	1986/07/31	1975/08/14	10.96	F	1.00	1.00			0.00
	4	226	1987/07/14	1975/08/14	11.92	F	1.00	1.00			0.00
	6	226	1988/07/11	1975/08/14	12.91	F	1.00	1.00			0.00
3	2	227	1986/07/31	1977/10/25	8.76	F	1.00	1.00			0.00
	4	227	1987/07/14	1977/10/25	9.72	F	NIL	NIL			NIL
	6	227	1988/07/11	1977/10/25	10.71	F	1.00	1.00			0.00
4	2	228	1986/07/31	1975/03/24	11.35	F	1.00	1.00			0.00
	4	228	1987/07/14	1975/03/24	12.31	F	1.00	1.00			0.00
	6	228	1988/07/11	1975/03/24	13.30	F	1.00	2.00			0.00
	8	228	1989/07/11	1975/03/24	14.30	F	4.00	5.00			0.00
3	2	229	1986/07/31	1974/10/30	11.75	F	3.00	2.00			0.00
	4	229	1987/07/14	1974/10/30	12.71	F	5.00	3.00			0.00
	6	229	1988/07/11	1974/10/30	13.70	F	5.00	4.00			0.00
3	2	230	1986/07/31	1976/05/14	10.21	F	1.00	1.00			0.00
	4	230	1987/07/14	1976/05/14	11.17	F	1.00	1.00			0.00
	8	230	1989/07/11	1976/05/14	13.16	F	1.00	2.00			0.00
2	2	231	1986/07/31	1978/09/05	7.90	F	1.00	1.00			0.00
	4	231	1987/07/14	1978/09/05	8.86	F	1.00	1.00			0.00
4	2	232	1986/07/31	1977/07/14	9.05	F	1.00	1.00			0.00
	4	232	1987/07/14	1978/07/14	10.00	F	1.00	1.00			0.00
	6	232	1988/07/11	1977/07/14	10.99	F	1.00	1.00			0.00
	8	232	1989/07/11	1977/07/14	11.99	F	1.00	1.00			0.00

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
4	2	233	1986/07/31	1978/11/25	7.68	F	1.00	1.00			0.00
	4	233	1987/07/14	1978/11/25	8.63	F	1.00	1.00			0.00
	6	233	1988/07/11	1978/11/25	9.62	F	1.00	1.00			0.00
	8	233	1989/07/11	1978/11/25	10.62	F	2.00	1.00			0.00
3	2	234	1986/07/31	1973/10/14	12.79	F	2.00	2.00			0.00
	4	234	1987/07/14	1973/10/14	13.75	F	3.00	3.00			0.00
	6	234	1988/07/11	1973/10/14	14.74	F	4.00	4.00			1.00
4	2	235	1986/07/31	1977/06/06	9.15	F	1.00	1.00			0.00
	4	235	1987/07/14	1977/06/06	10.11	F	1.00	1.00			0.00
	6	235	1988/07/11	1977/06/06	11.10	F	1.00	1.00			0.00
	8	235	1989/07/11	1977/06/06	12.10	F	2.00	3.00			0.00
1	2	236	1986/07/31	1976/03/11	10.39	F	1.00	1.00			0.00
3	2	238	1986/07/31	1975/08/10	10.97	F	1.00	1.00			0.00
	4	238	1987/07/14	1975/08/10	11.93	F	1.00	1.00			0.00
	6	238	1988/07/11	1975/08/10	12.92	F	1.00	1.00			0.00
3	2	239	1986/07/31	1977/02/21	9.44	F	1.00	1.00			0.00
	4	239	1987/07/14	1977/02/21	10.39	F	1.00	1.00			0.00
	6	239	1988/07/11	1977/02/21	11.38	F	2.00	2.00			0.00
4	2	240	1986/07/31	1977/01/03	9.57	F	1.00	1.00			0.00
	4	240	1987/07/14	1977/01/03	10.53	F	1.00	1.00			0.00
	6	240	1988/07/11	1977/01/03	11.52	F	1.00	1.00			0.00
	8	240	1989/07/11	1977/01/03	12.52	F	1.00	2.00			0.00
1	2	241	1986/07/31	1977/03/04	9.41	F	2.00	1.00			0.00
4	2	242	1986/07/31	1977/05/06	9.24	F	1.00	1.00			0.00
	4	242	1987/07/14	1977/05/06	10.19	F	1.00	1.00			0.00
	6	242	1988/07/11	1977/05/06	11.18	F	1.00	1.00			0.00
	8	242	1989/07/11	1977/05/06	12.18	F	4.00	1.00			0.00
2	2	243	1986/07/31	1977/01/01	9.58	F	1.00	1.00			0.00
	4	243	1987/07/14	1977/01/01	10.53	F	2.00	1.00			0.00
1	2	244	1986/07/31	1975/02/04	11.49	F	1.00	1.00			0.00
4	2	245	1986/07/31	1975/03/14	11.38	F	1.00	1.00			0.00
	4	245	1987/07/14	1975/03/14	12.34	F	1.00	1.00			0.00
	6	245	1988/07/11	1975/03/14	13.3	F	3.00	1.00			0.00

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
					3						
	8	245	1989/07/11	1975/03/14	14.33	F	3.00	2.00			0.00
2	2	246	1986/07/31	1975/09/06	10.90	F	1.00	1.00			0.00
	4	246	1987/07/14	1975/09/06	11.85	F	1.00	1.00			0.00
4	2	247	1986/07/31	1975/12/19	10.61	F	1.00	1.00			0.00
	4	247	1987/07/14	1975/12/19	11.57	F	3.00	2.00			0.00
	6	247	1988/07/11	1975/12/19	12.56	F	3.00	3.00			0.00
	8	247	1989/07/11	1975/12/19	13.56	F	4.00	4.00			0.00
3	2	248	1986/07/31	1976/10/08	9.81	F	2.00	1.00			0.00
	4	248	1987/07/14	1976/10/08	10.77	F	2.00	1.00			0.00
	6	248	1988/07/11	1976/10/08	11.76	F	2.00	5.00			0.00
4	2	250	1986/07/31	1973/06/09	13.14	F	1.00	2.00			0.00
	4	250	1987/07/14	1973/06/09	14.10	F	2.00	2.00			0.00
	6	250	1988/07/11	1973/06/09	15.09	F	3.00	3.00			0.00
	8	250	1989/07/11	1973/06/09	16.09	F	4.00	5.00			0.00
1	4	251	1987/07/14	1974/09/24	12.80	F	4.00	3.00			1.00
4	2	252	1986/07/31	1977/05/10	9.23	F	1.00	1.00			0.00
	4	252	1987/07/14	1977/05/10	10.18	F	1.00	1.00			0.00
	6	252	1988/07/11	1977/05/10	11.17	F	2.00	2.00			0.00
	8	252	1989/07/11	1977/05/10	12.17	F	5.00	3.00			0.00
2	2	254	1986/07/31	1976/12/25	9.60	F	1.00	1.00			0.00
	4	254	1987/07/14	1976/12/25	10.55	F	1.00	1.00			0.00
4	2	255	1986/07/31	1975/04/16	11.29	F	1.00	1.00			0.00
	4	255	1987/07/14	1975/04/16	12.24	F	1.00	1.00			0.00
	6	255	1988/07/11	1975/04/16	13.24	F	1.00	1.00			0.00
	8	255	1989/07/11	1975/04/16	14.24	F	3.00	4.00			0.00
2	2	256	1986/07/31	1975/08/14	10.96	F	1.00	1.00			0.00
	8	256	1989/07/11	1975/08/14	13.91	F	3.00	3.00			0.00
4	2	258	1986/07/31	1975/07/21	11.03	F	1.00	1.00			0.00
	4	258	1987/07/14	1975/07/21	11.98	F	1.00	1.00			0.00
	6	258	1988/07/11	1975/07/21	12.9	F	2.00	1.00			0.00

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
					7						
	8	258	1989/07/11	1975/07/21	13.97	F	4.00	3.00			0.00
4	2	259	1986/07/31	1975/09/02	10.91	F	1.00	1.00			0.00
	4	259	1987/07/14	1975/09/02	11.86	F	1.00	1.00			0.00
	6	259	1988/07/11	1975/09/02	12.86	F	1.00	1.00			0.00
	8	259	1989/07/11	1975/09/02	13.86	F	3.00	2.00			0.00
2	2	262	1986/07/31	1973/01/21	13.52	F	2.00	2.00			1.00
	4	262	1987/07/14	1973/01/21	14.48	F	4.00	4.00			0.00
3	2	263	1986/07/31	1973/06/07	13.15	F	1.00	1.00			0.00
	4	263	1987/07/14	1973/06/07	14.10	F	1.00	1.00			0.00
	6	263	1988/07/11	1973/06/07	15.09	F	2.00	3.00			0.00
3	2	264	1986/07/31	1973/07/18	13.04	F	1.00	2.00			0.00
	4	264	1987/07/14	1973/07/18	13.99	F	3.00	2.00			0.00
	6	264	1988/07/11	1973/07/18	14.98	F	5.00	5.00			0.00
3	2	266	1986/07/31	1972/03/17	14.37	F	4.00	3.00			0.00
	4	266	1987/07/14	1972/03/17	15.33	F	5.00	5.00			1.00
	6	266	1988/07/12	1972/03/17	16.32	F	5.00	4.00			1.00
3	2	267	1986/07/31	1972/03/14	14.38	F	3.00	4.00			NIL
	4	267	1987/07/14	1972/03/14	15.34	F	5.00	5.00			1.00
	8	267	1989/07/11	1972/03/14	17.33	F	5.00	5.00			1.00
1	2	268	1986/07/31	1971/05/26	15.18	F	4.00	3.00			0.00
1	2	269	1986/07/31	1970/12/20	15.61	F	5.00	5.00			1.00
1	2	271	1986/07/31	1973/08/25	12.93	F	1.00	2.00			0.00
3	2	272	1986/07/31	1974/02/22	12.44	F	2.00	2.00			0.00
	4	272	1987/07/14	1974/02/22	13.39	F	4.00	5.00			0.00
	6	272	1988/07/11	1974/02/22	14.38	F	4.00	5.00			0.00
4	2	273	1986/07/31	1974/10/24	11.77	F	1.00	2.00			1.00
	4	273	1987/07/14	1974/10/24	12.72	F	1.00	2.00			0.00
	6	273	1988/07/11	1974/10/24	13.71	F	1.00	3.00			0.00

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
	8	273	1989/07/11	1974/10/24	14.71	F	3.00	4.00			0.00
2	2	274	1986/07/31	1973/09/03	12.91	F	1.00	1.00			0.00
	4	274	1987/07/14	1973/09/03	13.86	F	1.00	2.00			0.00
2	2	275	1986/07/31	1972/06/13	14.13	F	4.00	4.00			0.00
	4	275	1987/07/14	1972/06/13	15.09	F	5.00	5.00			1.00
4	2	276	1986/07/31	1975/08/08	10.98	F	1.00	1.00			0.00
	4	276	1987/07/14	1975/08/08	11.93	F	2.00	1.00			0.00
	6	276	1988/07/11	1975/08/08	12.92	F	4.00	2.00			0.00
	8	276	1989/07/11	1975/08/08	13.92	F	4.00	4.00			0.00
3	2	277	1986/07/31	1972/06/23	14.10	F	4.00	3.00			1.00
	4	277	1987/07/14	1972/06/23	15.06	F	5.00	4.00			1.00
	6	277	1988/07/11	1972/06/23	16.05	F	5.00	4.00			1.00
4	2	278	1986/07/31	1973/02/19	13.44	F	3.00	2.00			0.00
	4	278	1987/07/14	1973/02/19	14.40	F	5.00	4.00			1.00
	6	278	1988/07/11	1973/02/19	15.39	F	5.00	5.00			1.00
	8	278	1989/07/11	1973/02/19	16.39	F	5.00	5.00			1.00
2	2	279	1986/07/31	1972/02/07	14.48	F	2.00	2.00			0.00
	4	279	1987/07/14	1972/02/07	15.43	F	5.00	4.00			1.00
2	2	280	1986/07/31	1969/09/12	16.88	F	4.00	5.00			NIL
	4	280	1987/07/14	1969/09/12	17.84	F	5.00	5.00			1.00
2	2	281	1986/07/31	1972/12/12	13.63	F	5.00	5.00			1.00
	4	281	1987/07/14	1972/12/12	14.59	F	5.00	5.00			1.00
1	2	282	1986/07/31	1971/09/02	14.91	F	5.00	2.00			NIL
1	2	283	1986/07/31	1971/01/12	15.55	F	4.00	5.00			0.00
	4	283	1987/07/14	1971/01/12	16.50	F	4.00	5.00			1.00
4	2	284	1986/07/31	1973/10/25	12.76	F	1.00	1.00			0.00
	4	284	1987/07/14	1973/10/25	13.72	F	2.00	1.00			0.00
	6	284	1988/07/11	1973/10/25	14.71	F	3.00	3.00			0.00
	8	284	1989/07/11	1973/10/25	15.71	F	4.00	5.00			0.00

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
4	2	285	1986/07/31	1974/10/16	11.79	F	1.00	1.00			0.00
	4	285	1987/07/14	1974/10/16	12.74	F	3.00	4.00			0.00
	6	285	1988/07/11	1974/10/16	13.73	F	2.00	4.00			0.00
	8	285	1989/07/11	1974/10/16	14.73	F	4.00	4.00			0.00
2	2	286	1986/07/31	1975/03/12	11.39	F	1.00	1.00			0.00
	4	286	1987/07/14	1975/03/12	12.34	F	2.00	2.00			0.00
4	2	288	1986/07/31	1973/11/22	12.69	F	NIL	NIL			NIL
	4	288	1987/07/14	1973/11/22	13.64	F	4.00	3.00			0.00
	6	288	1988/07/11	1973/11/22	14.63	F	5.00	3.00			0.00
	8	288	1989/07/11	1973/11/22	15.63	F	4.00	5.00			1.00
4	2	290	1986/07/31	1973/06/11	13.14	F	3.00	3.00			0.00
	4	290	1987/07/14	1973/06/11	14.09	F	5.00	4.00			0.00
	6	290	1988/07/11	1973/06/11	15.08	F	5.00	5.00			1.00
	8	290	1989/07/11	1973/06/11	16.08	F	5.00	5.00			1.00
1	2	291	1986/07/31	1972/02/19	14.44	F	4.00	4.00			1.00
1	2	293	1986/07/31	1972/07/14	14.05	F	3.00	3.00			0.00
3	2	295	1986/07/31	1971/04/10	15.31	F	4.00	4.00			1.00
	4	295	1987/07/14	1971/04/10	16.26	F	5.00	5.00			1.00
	6	295	1988/07/11	1971/04/10	17.25	F	4.00	5.00			1.00
1	2	296	1986/07/31	1971/12/05	14.65	F	5.00	5.00			1.00
4	2	297	1986/07/31	1971/08/08	14.98	F	3.00	4.00			1.00
	4	297	1987/07/14	1971/08/08	15.93	F	5.00	5.00			1.00
	6	297	1988/07/11	1971/08/08	16.92	F	4.00	5.00			1.00
	8	297	1989/07/11	1971/08/08	17.92	F	5.00	5.00			1.00
4	2	298	1986/07/31	1970/11/22	15.69	F	4.00	5.00			1.00
	4	298	1987/07/14	1970/11/22	16.64	F	5.00	5.00			1.00
	6	298	1988/07/11	1970/11/22	17.63	F	5.00	5.00			1.00
	8	298	1989/07/11	1970/11/22	18.63	F	5.00	5.00			1.00
3	2	299	1986/07/31	1973/06/28	13.09	F	4.00	4.00			1.00

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
	4	299	1987/07/14	1973/06/28	14.04	F	5.00	5.00			1.00
	6	299	1988/07/11	1973/06/28	15.04	F	5.00	5.00			1.00
1	2	300	1986/07/31	1970/11/09	15.72	F	3.00	4.00			1.00
1	2	301	1986/07/31	1975/08/07	10.98	M	1.00	1.00	1.00	1.00	
2	2	302	1986/07/31	1970/08/20	15.95	F	5.00	5.00			1.00
	4	302	1987/07/14	1970/08/20	16.90	F	5.00	5.00			1.00
1	2	303	1986/07/31	1969/02/18	17.45	F	5.00	3.00			1.00
3	2	304	1986/07/31	1973/01/19	13.53	F	2.00	2.00			0.00
	4	304	1987/07/14	1973/01/19	14.48	F	4.00	3.00			0.00
	6	304	1988/07/11	1973/01/19	15.47	F	4.00	4.00			0.00
2	2	305	1986/07/31	1968/09/06	17.90	F	5.00	5.00			1.00
	4	305	1987/07/14	1968/09/06	18.85	F	5.00	5.00			1.00
2	2	306	1986/07/31	1969/02/22	17.44	F	4.00	4.00			1.00
	4	306	1987/07/14	1969/02/22	18.39	F	4.00	4.00			1.00
4	2	307	1986/07/31	1971/04/24	15.27	F	3.00	3.00			0.00
	4	307	1987/07/14	1971/04/24	16.22	F	4.00	4.00			1.00
	6	307	1988/07/11	1971/04/24	17.21	F	4.00	4.00			1.00
	8	307	1989/07/11	1971/04/24	18.21	F	5.00	5.00			1.00
3	2	308	1986/07/31	1970/01/04	16.57	F	4.00	4.00			1.00
	4	308	1987/07/14	1970/01/04	17.52	F	4.00	4.00			1.00
	8	308	1989/07/11	1970/01/04	19.52	F	4.00	5.00			1.00
4	2	309	1986/07/31	1971/09/12	14.88	F	4.00	3.00			1.00
	4	309	1987/07/14	1971/09/12	15.84	F	4.00	2.00			1.00
	6	309	1988/07/11	1971/09/12	16.83	F	4.00	3.00			1.00
	8	309	1989/07/11	1971/09/12	17.83	F	4.00	4.00			1.00
4	2	310	1986/07/31	1972/11/11	13.72	F	2.00	2.00			0.00
	4	310	1987/07/14	1972/11/11	14.67	F	4.00	4.00			0.00
	6	310	1988/07/11	1972/11/11	15.66	F	4.00	4.00			0.00
	8	310	1989/07/11	1972/11/11	16.66	F	4.00	5.00			1.00

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
3	2	312	1986/07/31	1972/11/16	13.90	F	5.00	4.00			1.00
	4	312	1987/07/14	1972/09/04	14.86	F	5.00	5.00			1.00
	6	312	1988/07/11	1972/09/04	15.85	F	5.00	5.00			1.00
3	2	313	1986/07/31	1969/09/26	16.84	F	5.00	5.00			1.00
	4	313	1987/07/14	1969/09/26	17.80	F	5.00	5.00			1.00
	6	313	1988/07/11	1969/09/26	18.79	F	5.00	5.00			1.00
2	2	314	1986/07/31	1970/02/28	16.42	F	5.00	5.00			1.00
	4	314	1987/07/14	1970/02/28	17.37	F	5.00	4.00			1.00
3	2	315	1986/07/31	1966/04/06	20.32	F	3.00	3.00			1.00
	4	315	1987/07/14	1966/04/06	21.27	F	4.00	3.00			1.00
	6	315	1988/07/11	1966/04/06	22.26	F	4.00	3.00			1.00
3	2	316	1986/07/31	1970/01/05	16.57	F	3.00	3.00			1.00
	4	316	1987/07/14	1970/01/05	17.52	F	5.00	5.00			1.00
	6	316	1988/07/11	1970/01/05	18.51	F	5.00	5.00			1.00
4	2	317	1986/07/31	1970/06/20	16.11	F	4.00	4.00			1.00
	4	317	1987/07/14	1970/06/20	17.07	F	4.00	5.00			1.00
	6	317	1988/07/11	1970/06/20	18.06	F	4.00	5.00			1.00
	8	317	1989/07/11	1970/06/20	19.06	F	5.00	5.00			1.00
3	2	319	1986/07/31	1969/12/11	16.64	F	4.00	3.00			1.00
	4	319	1987/07/14	1969/12/11	17.59	F	5.00	5.00			1.00
	6	319	1988/07/11	1969/12/11	18.58	F	5.00	5.00			1.00
1	2	320	1986/07/31	1970/10/31	15.75	F	3.00	2.00			1.00
1	2	321	1986/07/31	1967/04/24	19.27	F	5.00	4.00			1.00
3	2	322	1986/07/31	1971/02/07	15.48	F	4.00	2.00			0.00
	4	322	1987/07/14	1971/02/07	16.43	F	5.00	3.00			1.00
	6	322	1988/07/11	1971/02/07	17.42	F	5.00	4.00			1.00
3	2	323	1986/07/31	1971/04/24	15.27	F	5.00	5.00			1.00
	4	323	1987/07/14	1971/04/24	16.22	F	5.00	5.00			1.00
	6	323	1988/07/11	1971/04/24	17.21	F	5.00	5.00			1.00

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
3	2	324	1986/07/31	1970/04/14	16.30	F	5.00	5.00			1.00
	4	324	1987/07/14	1970/04/14	17.25	F	5.00	5.00			1.00
	6	324	1988/07/11	1970/04/14	18.24	F	5.00	5.00			1.00
3	6	325	1988/07/11	1979/05/13	9.16	F	5.00	5.00			1.00
	8	325	1989/07/11	1979/05/13	10.16	F	5.00	5.00			1.00
	4	325	1987/07/14	1972/01/01	15.53	F	5.00	5.00			1.00
1	4	326	1987/07/14	1969/04/07	18.27	F	5.00	5.00			1.00
1	2	327	1986/07/31	1970/10/10	15.81	F	4.00	5.00			1.00
3	2	328	1986/07/31	1969/01/03	17.57	F	5.00	4.00			1.00
	4	328	1987/07/14	1969/01/03	18.53	F	5.00	4.00			1.00
	6	328	1988/07/11	1969/01/03	19.52	F	5.00	5.00			1.00
2	2	329	1986/07/31	1970/07/07	16.07	F	4.00	4.00			1.00
	4	329	1987/07/14	1970/07/07	17.02	F	5.00	5.00			1.00
3	2	330	1986/07/31	1972/09/02	13.91	F	4.00	4.00			1.00
	4	330	1987/07/14	1972/09/02	14.86	F	5.00	4.00			1.00
	8	330	1989/07/11	1972/09/02	16.86	F	4.00	5.00			1.00
1	2	332	1986/07/31	1968/10/16	17.79	F	5.00	5.00			1.00
3	2	333	1986/07/31	1971/03/04	15.41	F	3.00	4.00			1.00
	4	333	1987/07/14	1971/03/04	16.36	F	4.00	5.00			1.00
	6	333	1988/07/11	1971/03/04	17.35	F	5.00	5.00			1.00
4	2	334	1986/07/31	1966/06/04	20.16	F	5.00	5.00			1.00
	4	334	1987/07/14	1966/06/04	21.11	F	5.00	5.00			1.00
	6	334	1988/07/11	1966/06/04	22.10	F	5.00	5.00			1.00
	8	334	1989/07/11	1966/06/04	23.10	F	5.00	5.00			1.00
2	2	335	1986/07/31	1972/01/25	14.51	F	4.00	5.00			1.00
	4	335	1987/07/14	1972/01/25	15.47	F	5.00	5.00			1.00
1	2	336	1986/07/31	1969/03/03	17.41	M	5.00	5.00	15.00	15.00	
1	6	337	1988/07/11	1978/02/18	10.39	M	2.00	1.00	2.00	2.00	
1	4	337	1987/07/14	1976/01/13	11.50	M	1.00	1.00	2.00	2.00	

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
1	2	342	1986/07/31	1973/11/22	12.69	F	2.00	2.00			0.00
4	2	343	1986/07/31	1979/04/12	7.30	F	2.00	1.00			0.00
	4	343	1987/07/14	1979/04/12	8.26	F	1.00	1.00			0.00
	6	343	1988/07/12	1979/04/12	9.25	F	1.00	1.00			0.00
	8	343	1989/07/11	1979/04/12	10.25	F	1.00	1.00			0.00
2	4	346	1987/07/14	1979/11/26	7.63	F	1.00	1.00			0.00
	6	346	1988/07/11	1979/11/26	8.62	F	1.00	1.00			0.00
2	4	347	1987/07/14	1978/02/25	9.38	F	1.00	1.00			0.00
	6	347	1988/07/11	1978/02/25	10.37	F	1.00	1.00			0.00
2	4	348	1987/07/14	1980/04/29	7.21	F	1.00	1.00			0.00
	6	348	1988/07/11	1980/04/29	8.20	F	1.00	1.00			0.00
1	4	350	1987/07/14	1980/10/14	6.75	F	1.00	1.00			0.00
1	4	351	1987/07/14	1980/01/10	7.51	F	1.00	1.00			0.00
1	8	352	1989/07/11	1981/02/10	8.41	F	1.00	1.00			0.00
1	4	353	1987/07/14	1981/02/04	6.44	F	1.00	1.00			0.00
3	4	354	1987/07/14	1980/05/05	7.19	F	1.00	1.00			0.00
	6	354	1988/07/11	1980/05/05	8.18	F	1.00	1.00			0.00
	8	354	1989/07/11	1980/05/05	9.18	F	1.00	1.00			0.00
1	4	355	1987/07/14	1979/10/06	7.77	F	1.00	1.00			0.00
3	4	356	1987/07/14	1981/06/28	6.04	F	1.00	1.00			0.00
	6	356	1988/07/12	1981/06/28	7.04	F	1.00	1.00			0.00
	8	356	1989/07/11	1981/06/28	8.04	F	1.00	1.00			0.00
3	4	357	1987/07/14	1980/07/15	7.00	F	1.00	1.00			0.00
	6	357	1988/07/11	1980/07/15	7.99	F	1.00	1.00			0.00
	8	357	1989/07/11	1980/07/15	8.99	F	1.00	1.00			0.00
3	4	359	1987/07/14	1976/09/20	10.81	F	1.00	1.00			0.00
	6	359	1988/07/11	1976/09/20	11.81	F	1.00	1.00			0.00
	8	359	1989/07/11	1976/09/20	12.81	F	2.00	1.00			0.00
2	4	360	1987/07/14	1980/03/21	7.32	F	1.00	1.00			0.00
	6	360	1988/07/11	1980/03/21	8.31	F	3.00	2.00			0.00
3	4	362	1987/07/14	1979/11/12	7.67	F	1.00	1.00			0.00
	6	362	1988/07/11	1979/11/12	8.66	F	1.00	1.00			0.00
	8	362	1989/07/11	1979/11/12	9.66	F	1.00	1.00			0.00
2	4	364	1987/07/14	1980/10/03	6.78	F	1.00	1.00			0.00
	6	364	1988/07/11	1980/10/03	7.77	F	1.00	1.00			0.00
2	4	365	1987/07/14	1980/11/17	6.66	F	1.00	1.00			0.00
	8	365	1989/07/11	1980/11/17	8.65	F	1.00	1.00			0.00
1	8	366	1989/07/11	1979/10/02	9.77	F	1.00	1.00			0.00
2	4	368	1987/07/14	1980/10/18	6.74	M	1.00	1.00	1.00	1.00	
	8	368	1989/07/11	1980/10/18	8.73	M	3.00	2.00	2.00	2.00	
2	4	369	1987/07/14	1980/07/14	7.00	M	1.00	1.00	1.00	1.00	
	8	369	1989/07/11	1980/07/14	8.99	M	2.00	2.00	2.00	2.00	
2	4	370	1987/07/14	1981/04/26	6.22	M	1.00	1.00	1.00	1.00	
	6	370	1988/07/11	1981/04/26	7.21	M	2.00	1.00	1.00	1.00	
2	4	372	1987/07/14	1980/03/12	7.34	M	1.00	1.00	2.00	2.00	
	8	372	1989/07/11	1980/03/12	9.33	M	2.00	2.00	2.00	2.00	

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
2	4	373	1987/07/14	1980/09/24	6.80	M	1.00	1.00	2.00	2.00	
	8	373	1989/07/11	1980/09/24	8.79	M	2.00	2.00	2.00	2.00	
2	4	375	1987/07/14	1981/11/26	5.63	M	1.00	1.00	1.00	1.00	
	8	375	1989/07/11	1981/11/26	7.62	M	1.00	1.00	2.00	2.00	
1	4	376	1987/07/14	1980/10/17	6.74	M	1.00	1.00	2.00	2.00	
1	4	377	1987/07/14	1981/01/28	6.46	M	1.00	1.00	1.00	1.00	
1	6	378	1988/07/11	1978/02/10	10.41	M	1.00	1.00	1.00	1.00	
1	4	379	1987/07/14	1980/10/23	6.72	M	1.00	1.00	1.00	1.00	
3	4	381	1987/07/14	1981/03/11	6.34	M	1.00	1.00	1.00	1.00	
	6	381	1988/07/11	1981/03/11	7.33	M	2.00	1.00	1.00	1.00	
	8	381	1989/07/11	1981/03/11	8.33	M	2.00	1.00	1.00	1.00	
2	4	383	1987/07/14	1980/07/15	7.00	M	1.00	1.00	1.00	1.00	
	6	383	1988/07/11	1980/07/15	7.99	M	1.00	1.00	1.00	1.00	
2	4	384	1987/07/14	1979/11/28	7.63	M	1.00	1.00	1.00	1.00	
	6	384	1988/07/11	1979/11/28	8.62	M	2.00	1.00	1.00	1.00	
1	4	385	1987/07/14	1980/10/02	6.78	M	1.00	1.00	1.00	1.00	
3	4	386	1987/07/14	1981/04/28	6.21	M	1.00	1.00	1.00	1.00	
	6	386	1988/07/11	1981/04/28	7.20	M	1.00	1.00	1.00	1.00	
	8	386	1989/07/11	1981/04/28	8.20	M	2.00	1.00	1.00	1.00	
1	6	387	1988/07/11	1980/11/16	7.65	M	2.00	1.00	2.00	2.00	
2	6	388	1988/07/12	1981/10/04	6.77	F	1.00	1.00			0.00
	8	388	1989/07/11	1981/10/04	7.77	F	1.00	1.00			0.00
2	4	389	1987/07/14	1980/09/10	6.84	M	1.00	1.00	1.00	1.00	
	8	389	1989/07/11	1980/09/10	8.83	M	2.00	2.00	1.00	1.00	
3	4	391	1987/07/14	1980/11/09	6.68	M	1.00	1.00	1.00	1.00	
	6	391	1988/07/11	1980/11/09	7.67	M	2.00	1.00	1.00	1.00	
	8	391	1989/07/11	1980/11/09	8.67	M	2.00	2.00	2.00	2.00	
1	4	392	1987/07/14	1979/07/13	8.00	M	2.00	1.00	2.00	2.00	
1	8	393	1989/07/11	1980/10/30	8.70	M	1.00	2.00	2.00	2.00	
4	2	394	1986/07/31	1979/09/12	6.88	M	1.00	1.00	1.00	1.00	
	4	394	1987/07/14	1979/09/12	7.84	M	1.00	1.00	1.00	1.00	
	6	394	1988/07/11	1979/09/12	8.83	M	1.00	1.00	1.00	1.00	
	8	394	1989/07/11	1979/09/12	9.83	M	2.00	2.00	2.00	2.00	
3	2	395	1986/07/31	1978/02/22	8.44	M	1.00	1.00	1.00	1.00	
	4	395	1987/07/14	1978/02/22	9.39	M	1.00	1.00	1.00	1.00	
	6	395	1988/07/11	1978/02/22	10.38	M	2.00	1.00	4.00	5.00	
4	2	396	1986/07/31	1979/02/14	7.46	M	1.00	1.00	1.00	1.00	
	4	396	1987/07/14	1979/02/14	8.41	M	1.00	1.00	1.00	1.00	
	6	396	1988/07/12	1979/02/14	9.41	M	1.00	1.00	1.00	1.00	
	8	396	1989/07/11	1979/02/14	10.40	M	2.00	2.00	2.00	2.00	
4	2	398	1986/07/31	1970/09/06	15.90	M	2.00	2.00	9.00	10.00	
	4	398	1987/07/14	1970/09/06	16.85	M	4.00	4.00	12.00	12.00	
	6	398	1988/07/12	1970/09/06	17.85	M	4.00	4.00	12.00	12.00	
	8	398	1989/07/11	1970/09/06	18.84	M	5.00	5.00	19.00	20.00	
3	2	399	1986/07/31	1970/05/05	16.2	M	4.00	4.00	10.00	10.00	

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
					4						
	4	399	1987/07/14	1970/05/05	17.19	M	4.00	4.00	15.00	13.00	
	6	399	1988/07/11	1970/05/05	18.18	M	4.00	4.00	13.00	13.00	
3	4	403	1987/07/14	1976/02/12	11.42	M	1.00	1.00	0.00	2.00	
	6	403	1988/07/12	1976/02/12	12.41	M	1.00	2.00	1.00	1.00	
	8	403	1989/07/11	1976/02/12	13.41	M	3.00	3.00	2.00	2.00	
4	2	404	1986/07/31	1979/10/12	6.80	M	1.00	1.00	1.00	1.00	
	4	404	1987/07/14	1979/10/12	7.75	M	1.00	1.00	1.00	1.00	
	6	404	1988/07/11	1979/10/12	8.75	M	2.00	1.00	3.00	4.00	
	8	404	1989/07/11	1979/10/12	9.75	M	3.00	2.00	3.00	4.00	
2	2	405	1986/07/31	1974/03/19	12.37	M	2.00	2.00	4.00	4.00	
	4	405	1987/07/14	1974/03/19	13.32	M	1.00	1.00	3.00	3.00	
1	4	406	1987/07/14	1978/02/11	8.42	M	1.00	1.00	2.00	2.00	
3	2	408	1986/07/31	1976/10/11	9.80	M	1.00	1.00	1.00	1.00	
	4	408	1987/07/14	1976/10/11	10.76	M	1.00	1.00	1.00	1.00	
	8	408	1989/07/11	1976/10/11	12.75	M	3.00	3.00	3.00	3.00	
2	6	409	1988/07/11	1979/11/19	8.64	M	1.00	1.00	2.00	2.00	
	4	409	1987/07/14	1977/11/19	9.65	M	1.00	1.00	2.00	2.00	
3	2	411	1986/07/31	1967/07/28	19.01	F	5.00	5.00			1.00
	4	411	1987/07/14	1967/07/28	19.96	F	5.00	5.00			1.00
	6	411	1988/07/11	1967/07/28	20.95	F	5.00	5.00			1.00
2	2	412	1986/07/31	1967/02/15	19.46	F	5.00	4.00			1.00
	4	412	1987/07/14	1967/02/15	20.41	F	5.00	5.00			1.00
3	2	413	1986/07/31	1968/04/19	18.28	F	4.00	4.00			1.00
	4	413	1987/07/14	1968/04/19	19.24	F	5.00	5.00			1.00
	6	413	1988/07/11	1968/04/19	20.23	F	5.00	5.00			1.00
4	2	414	1986/07/31	1970/08/03	15.99	F	4.00	4.00			1.00
	4	414	1987/07/14	1970/08/03	16.95	F	5.00	5.00			1.00
	6	414	1988/07/11	1970/08/03	17.94	F	5.00	5.00			1.00
	8	414	1989/07/11	1970/08/03	18.94	F	5.00	5.00			1.00
4	2	415	1986/07/31	1971/01/02	15.58	F	5.00	2.00			1.00
	4	415	1987/07/14	1971/01/02	16.53	F	5.00	3.00			1.00
	6	415	1988/07/11	1971/01/02	17.5	F	5.00	3.00			1.00

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
					2						
	8	415	1989/07/11	1971/01/02	18.52	F	5.00	3.00			1.00
2	2	416	1986/07/31	1978/01/15	8.54	F	1.00	1.00			0.00
	4	416	1987/07/14	1978/01/15	9.49	F	1.00	1.00			0.00
3	2	417	1986/07/31	1979/10/11	6.80	F	1.00	1.00			0.00
	4	417	1987/07/14	1979/10/11	7.76	F	1.00	1.00			0.00
	8	417	1989/07/11	1979/10/11	9.75	F	1.00	1.00			0.00
2	2	418	1986/07/31	1979/02/14	7.46	F	1.00	1.00			0.00
	4	418	1987/07/14	1979/02/14	8.41	F	1.00	1.00			0.00
2	2	419	1986/07/31	1980/10/04	5.82	F	1.00	1.00			0.00
	4	419	1987/07/14	1980/10/04	6.78	F	1.00	1.00			0.00
3	2	420	1986/07/31	1980/09/05	5.90	F	1.00	1.00			0.00
	4	420	1987/07/14	1980/09/05	6.86	F	1.00	1.00			0.00
	6	420	1988/07/11	1980/09/05	7.85	F	1.00	1.00			0.00
4	2	421	1986/07/31	1979/07/01	7.08	F	1.00	1.00			0.00
	4	421	1987/07/14	1979/07/01	8.04	F	1.00	1.00			0.00
	6	421	1988/07/11	1979/07/01	9.03	F	1.00	1.00			0.00
	8	421	1989/07/11	1979/07/01	10.03	F	1.00	1.00			0.00
1	6	422	1988/07/11	1979/02/12	9.41	F	1.00	1.00			0.00
1	6	424	1988/07/11	1974/06/22	14.05	F	4.00	3.00			0.00
2	4	427	1987/07/14	1978/02/03	9.44	M	1.00	1.00	1.00	1.00	
	6	427	1988/07/12	1978/02/03	10.44	M	1.00	1.00	1.00	1.00	
1	4	428	1987/07/14	1978/07/09	9.01	M	1.00	1.00	1.00	1.00	
1	4	429	1987/07/14	1981/04/20	6.23	M	2.00	2.00	2.00	2.00	
4	2	430	1986/07/31	1972/12/12	13.63	F	3.00	1.00			0.00
	4	430	1987/07/14	1972/12/12	14.59	F	5.00	2.00			0.00
	6	430	1988/07/11	1972/12/12	15.58	F	5.00	4.00			1.00
	8	430	1989/07/11	1972/12/12	16.58	F	5.00	5.00			1.00
1	4	432	1987/07/14	1979/11/26	7.63	F	1.00	1.00			0.00
1	6	435	1988/07/12	1980/04/05	8.27	M	1.00	1.00	1.00	1.00	
2	2	439	1986/07/31	1972/09/28	13.84	M	3.00	3.00	15.00	15.00	
	4	439	1987/07/14	1972/09/28	14.79	M	4.00	4.00	12.00	12.00	
3	2	440	1986/07/31	1970/02/25	16.43	M	5.00	4.00	13.00	13.00	
	4	440	1987/07/14	1970/02/25	17.38	M	5.00	5.00	20.00	20.00	
	6	440	1988/07/11	1970/02/25	18.37	M	5.00	5.00	20.00	20.00	
1	4	441	1987/07/14	1981/03/14	6.34	F	1.00	1.00			0.00
2	2	442	1986/07/31	1980/01/15	6.54	F	1.00	1.00			0.00
	4	442	1987/07/14	1980/01/15	7.49	F	1.00	1.00			0.00
4	2	443	1986/07/31	1978/06/07	8.15	F	1.00	1.00			0.00
	4	443	1987/07/14	1978/06/07	9.10	F	1.00	1.00			0.00
	6	443	1988/07/11	1978/06/07	10.0	F	1.00	1.00			0.00

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
					9						
	8	443	1989/07/11	1978/06/07	11.09	F	1.00	1.00			0.00
1	6	445	1988/07/11	1970/12/01	17.61	M	5.00	5.00	25.00	25.00	
3	2	449	1986/07/31	1970/06/29	16.09	F	3.00	5.00			1.00
	4	449	1987/07/14	1970/06/29	17.04	F	4.00	5.00			1.00
	6	449	1988/07/11	1970/06/29	18.03	F	4.00	5.00			1.00
2	2	450	1986/07/31	1974/11/13	11.71	F	3.00	2.00			0.00
	4	450	1987/07/14	1974/11/13	12.67	F	5.00	4.00			0.00
	6	450	1988/07/11	1974/11/13	13.66	F	1.00	1.00			0.00
1	2	451	1986/07/31	1973/10/06	12.82	F	4.00	5.00			0.00
3	2	455	1986/07/31	1972/08/08	13.98	F	3.00	4.00			0.00
	4	455	1987/07/14	1972/08/08	14.93	F	5.00	5.00			1.00
	6	455	1988/07/11	1972/08/08	15.92	F	5.00	5.00			1.00
1	6	457	1988/07/11	1978/04/09	10.26	M	1.00	1.00	3.00	2.00	
2	4	468	1987/07/14	1978/11/03	8.69	F	1.00	1.00			0.00
	6	468	1988/07/11	1978/11/03	9.69	F	1.00	1.00			0.00
1	6	473	1988/07/11	1973/12/25	14.54	M	3.00	2.00	8.00	8.00	
1	6	474	1988/07/11	1970/06/26	18.04	M	3.00	4.00	15.00	15.00	
1	8	475	1989/07/11	1974/12/25	14.54	M	2.00	2.00	5.00	5.00	
2	6	476	1988/07/11	1976/08/01	11.94	M	1.00	1.00	2.00	2.00	
	8	476	1989/07/11	1976/08/01	12.94	M	3.00	2.00	5.00	5.00	
1	8	477	1989/07/11	1974/12/04	14.60	M	2.00	2.00	6.00	5.00	
1	8	478	1989/07/11	1974/08/12	14.91	M	2.00	2.00	6.00	6.00	
1	8	481	1989/07/11	1978/07/21	10.97	M	1.00	2.00	2.00	2.00	
2	6	482	1988/07/11	1977/01/13	11.49	M	1.00	1.00	3.00	3.00	
	8	482	1989/07/11	1977/01/13	12.49	M	2.00	2.00	6.00	6.00	
1	6	484	1988/07/11	1972/04/13	16.24	F	3.00	4.00			0.00
2	6	485	1988/07/11	1978/08/16	9.90	F	1.00	1.00			0.00
	8	485	1989/07/11	1978/08/16	10.90	F	3.00	1.00			0.00
2	6	486	1988/07/11	1978/03/02	10.36	F	1.00	1.00			0.00
	8	486	1989/07/11	1978/03/02	11.3	F	1.00	2.00			0.00

Visits	Vno	Study No.	Exam Dte	Birth Date	Age	Sex	Brstgnt	Pubhair	Testvl	Testvr	Menar
					6						
1	6	487	1988/07/11	1976/06/12	12.08	F	1.00	1.00			0.00
1	6	490	1988/07/11	1976/08/03	11.94	F	1.00	1.00			0.00
2	6	492	1988/07/11	1973/11/12	14.66	F	2.00	3.00			0.00
	8	492	1989/07/11	1973/11/12	15.66	F	3.00	5.00			0.00
2	6	494	1988/07/11	1974/01/01	14.52	F	1.00	1.00			0.00
	8	494	1989/07/11	1974/01/01	15.52	F	2.00	1.00			0.00
2	6	497	1988/07/11	1978/12/10	9.58	F	1.00	1.00			0.00
	8	497	1989/07/11	1978/12/10	10.58	F	1.00	1.00			0.00
1	6	498	1988/07/11	1980/02/13	8.41	F	1.00	1.00			0.00
2	6	499	1988/07/11	1976/05/11	12.17	F	1.00	1.00			0.00
	8	499	1989/07/11	1976/05/11	13.17	F	1.00	1.00			0.00
1	6	502	1988/07/11	1972/04/03	16.27	F	5.00	3.00			1.00
2	6	503	1988/07/11	1971/04/04	17.27	F	3.00	4.00			0.00
	8	503	1989/07/11	1971/04/04	18.27	F	4.00	5.00			1.00
2	6	504	1988/07/11	1976/09/20	11.81	F	2.00	2.00			0.00
	8	504	1989/07/11	1976/09/20	12.81	F	4.00	4.00			0.00
1	6	946	1988/07/12	1972/07/16	15.99	M	4.00	4.00	10.00	10.00	
1	8	947	1989/07/11	1974/09/09	14.84	F	1.00	1.00			0.00
1	8	948	1989/07/11	1979/06/28	10.04	F	1.00	1.00			0.00

APPENDIX C

TEMPLATE FOR WHO REFERENCE REPORT

Global Database on growth and nutritional status of school children and adolescents

Ref. No.:

Country:
Author:
Reference:
Administrative level:
Month and year of survey:

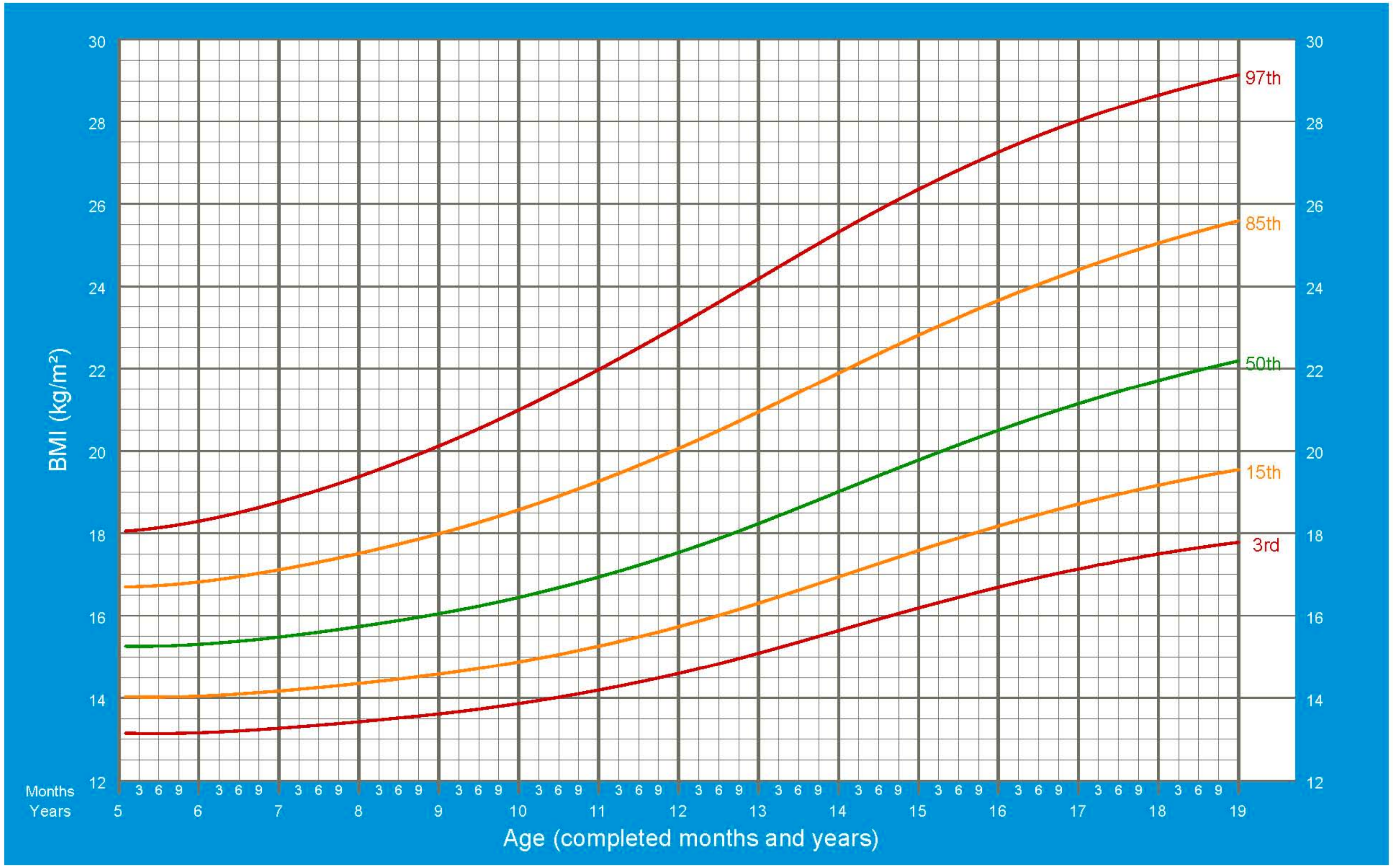
AGE GROUPS (Years)	N	WEIGHT/AGE (%)				HEIGHT/AGE (%)				BMI/AGE (%)							NOTES
		<-3 SD	<-2 SD [1]	Mean z-score	SD z-score	<-3 SD	<-2 SD [1]	Mean z-score	SD z-score	<-3 SD	<-2 SD [1]	>+1 SD [2]	>+2 SD [3]	>+3 SD	Mean z-score	SD z-score	
TOTAL (5-9)																	
TOTAL (10-14)		Not applicable															
TOTAL (15-19)																	
5																	
6																	
7																	
8																	
9																	
10		**Not applicable**: Weight-for-age reference data are not available beyond age 10 because this indicator does not distinguish between height and body mass in an age period where many children are experiencing the pubertal growth spurt and may appear as having excess weight (by weight-for-age) when in fact they are just tall.															
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	

AGE GROUPS (Years)	N	WEIGHT/AGE (%)				HEIGHT/AGE (%)				BMI/AGE (%)							NOTES
		<-3 SD	<-2 SD [1]	Mean z-score	SD z-score	<-3 SD	<-2 SD [1]	Mean z-score	SD z-score	<-3 SD	<-2 SD [1]	>+1 SD [2]	>+2 SD [3]	>+3 SD	Mean z-score	SD z-score	
Males (5-9)																	% spermarche
Males (10-14)		Not applicable															% spermarche
Males (15-19)																	% spermarche
5																	% spermarche
6																	% spermarche
7																	% spermarche
8																	% spermarche
9																	% spermarche
10		**Not applicable:** Weight-for-age reference data are not available beyond age 10 because this indicator does not distinguish between height and body mass in an age period where many children are experiencing the pubertal growth spurt and may appear as having excess weight (by weight-for-age) when in fact they are just tall.															% spermarche
11																	% spermarche
12																	% spermarche
13																	% spermarche
14																	% spermarche
15																	% spermarche
16																	% spermarche
17																	% spermarche
18																	% spermarche
19																	% spermarche

BMI-for-age BOYS

5 to 19 years (percentiles)

World Health Organization

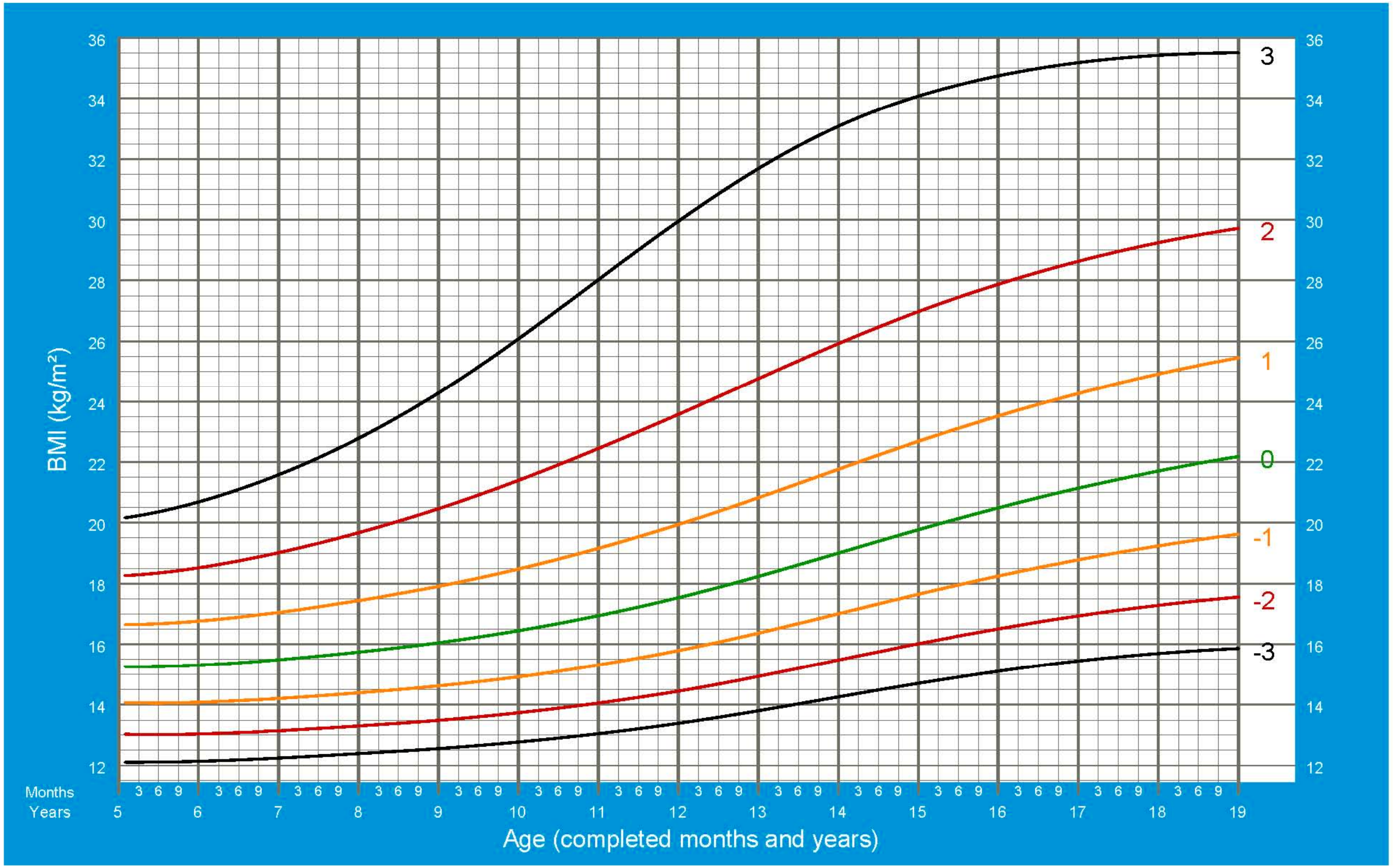


2007 WHO Reference

BMI-for-age BOYS

5 to 19 years (z-scores)

World Health Organization

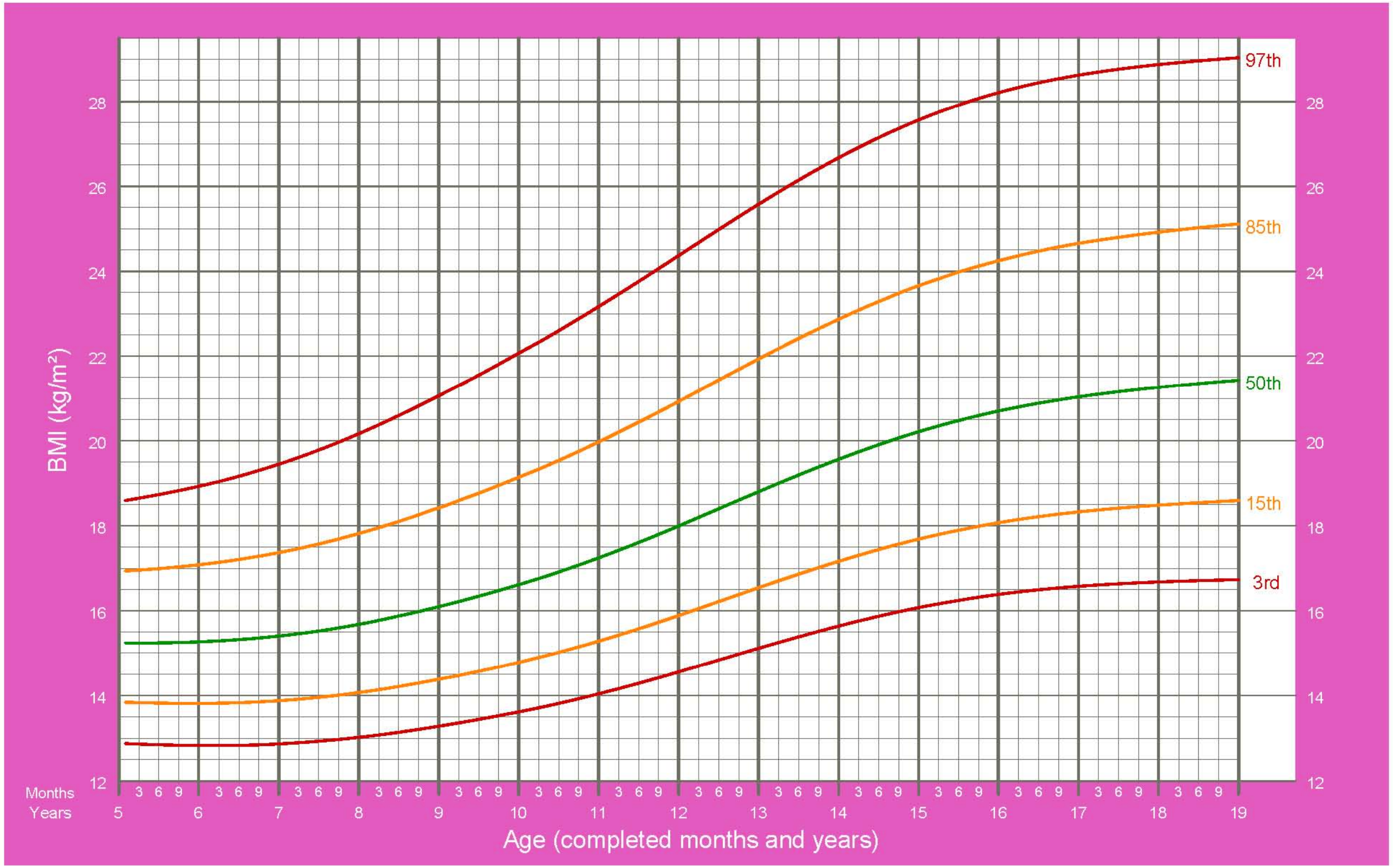


2007 WHO Reference

BMI-for-age GIRLS

5 to 19 years (percentiles)

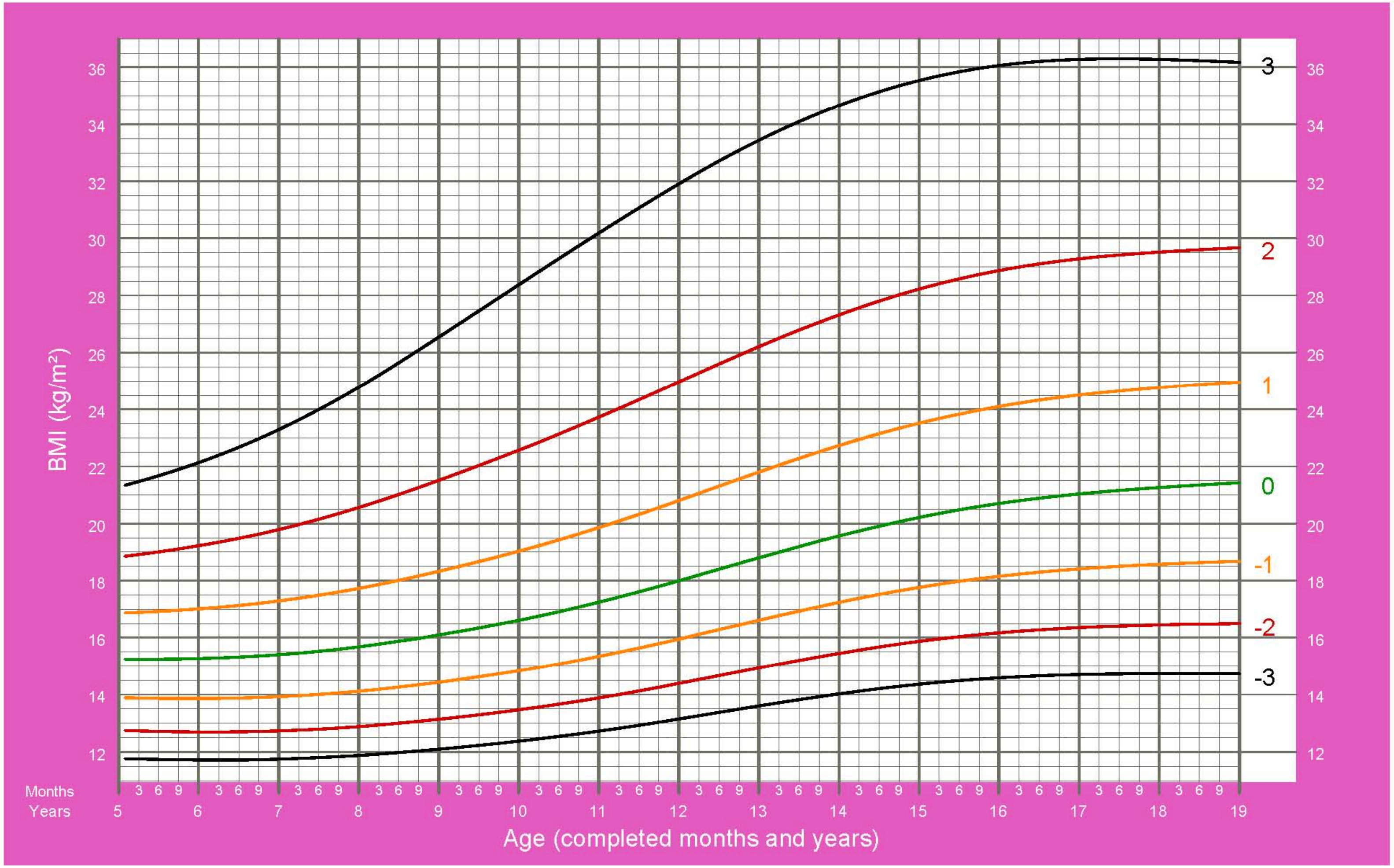
World Health Organization



2007 WHO Reference

BMI-for-age GIRLS

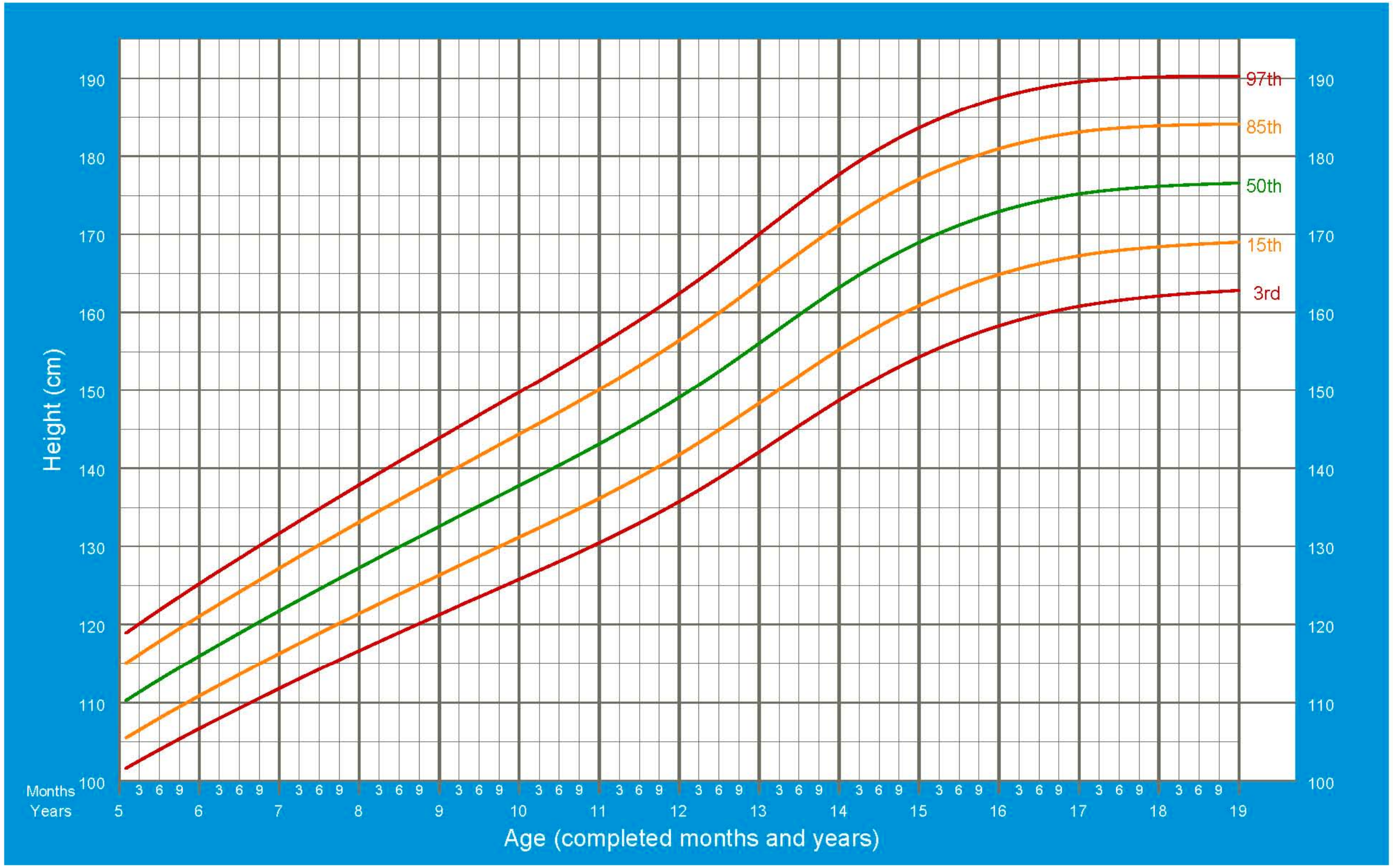
5 to 19 years (z-scores)



2007 WHO Reference

Height-for-age BOYS

5 to 19 years (percentiles)

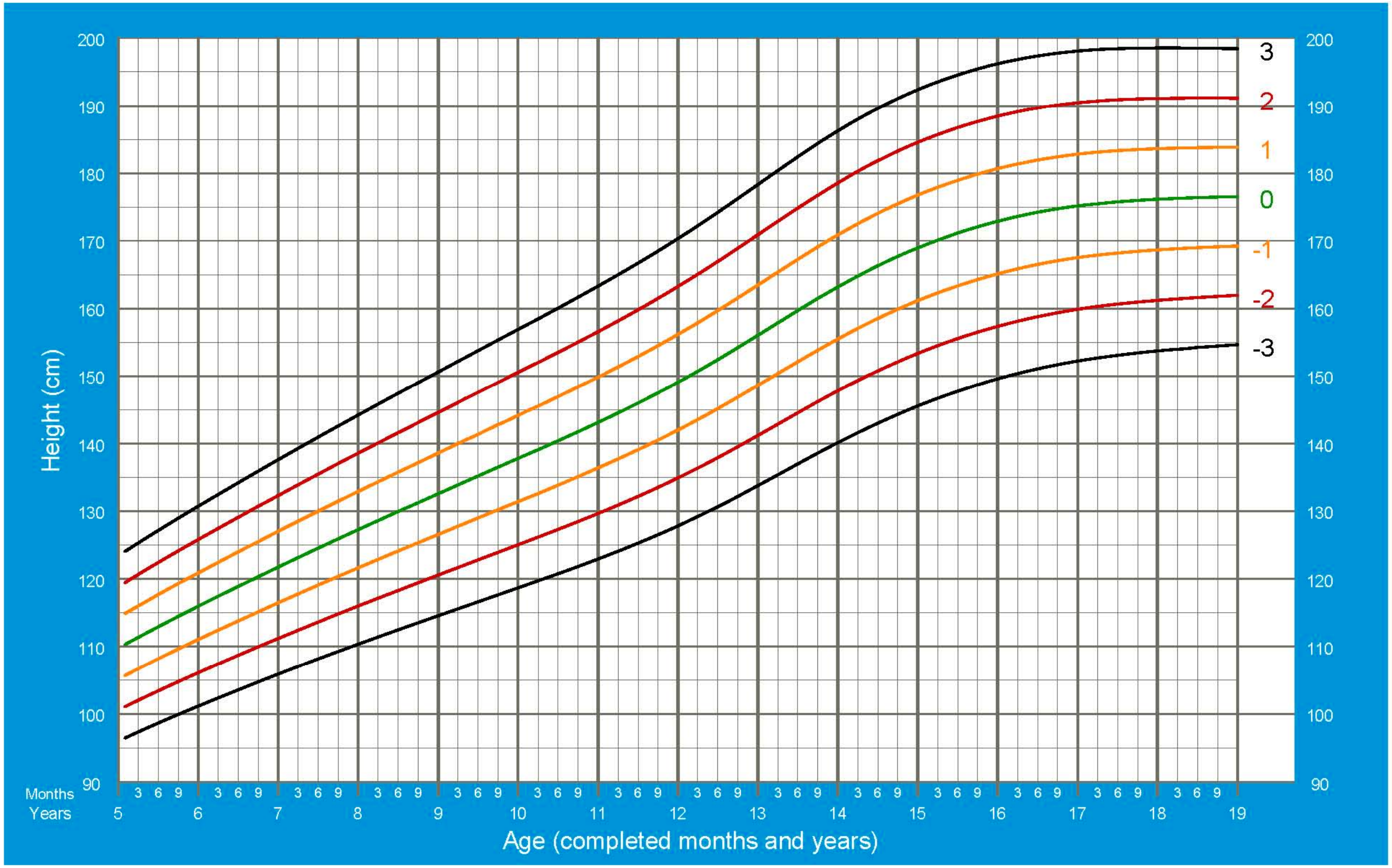


2007 WHO Reference

Height-for-age BOYS

5 to 19 years (z-scores)

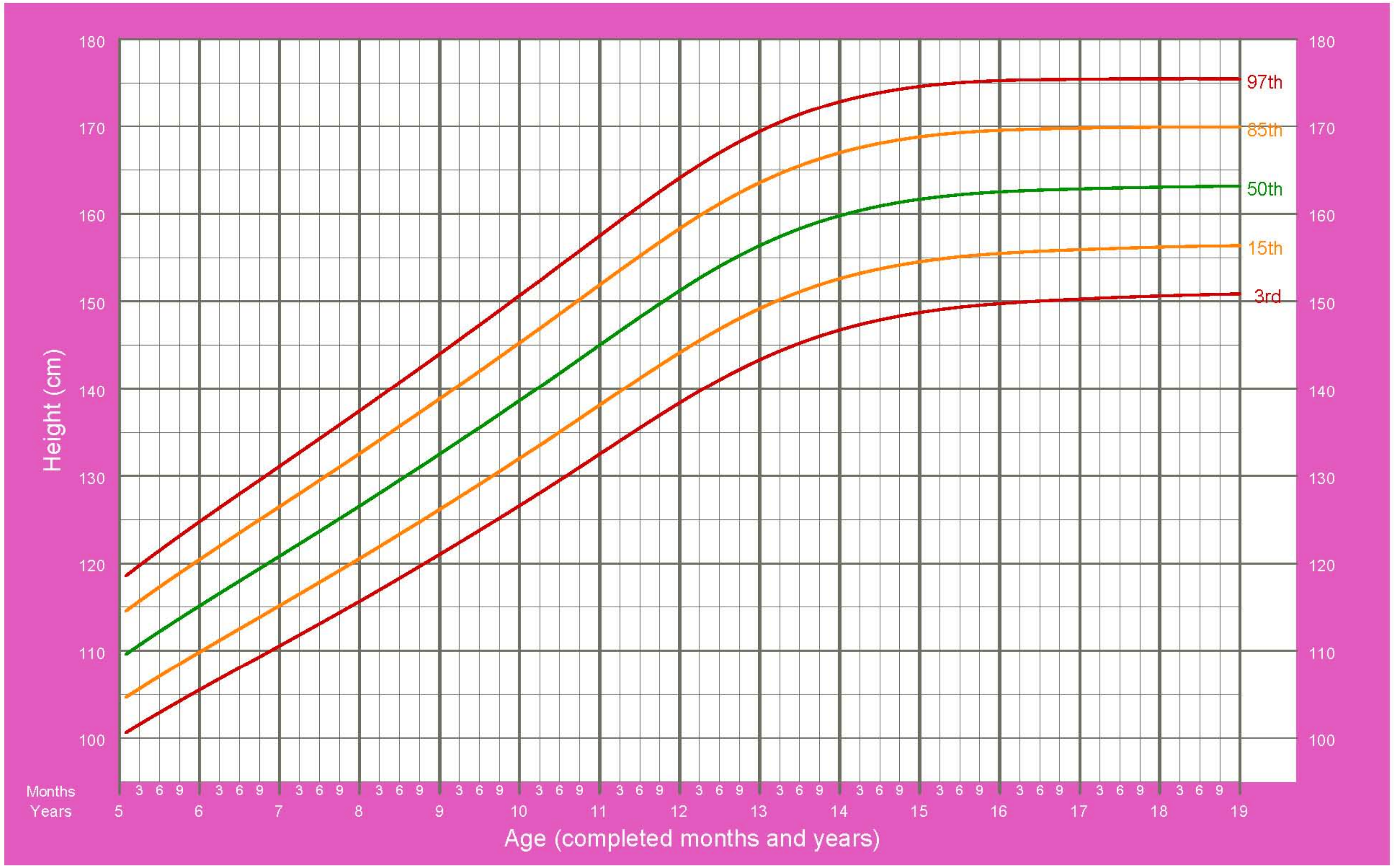
World Health Organization



2007 WHO Reference

Height-for-age GIRLS

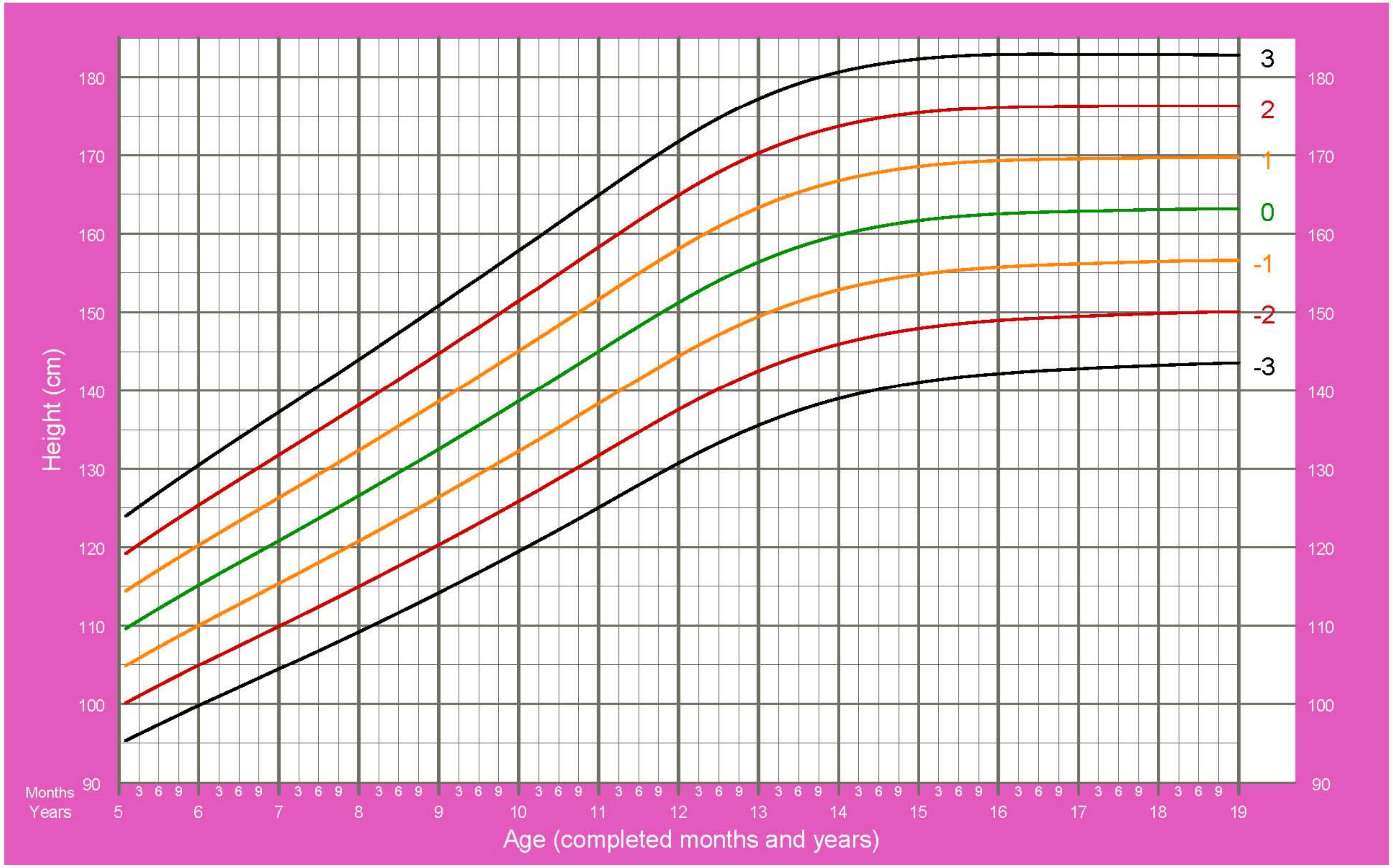
5 to 19 years (percentiles)



2007 WHO Reference

Height-for-age GIRLS

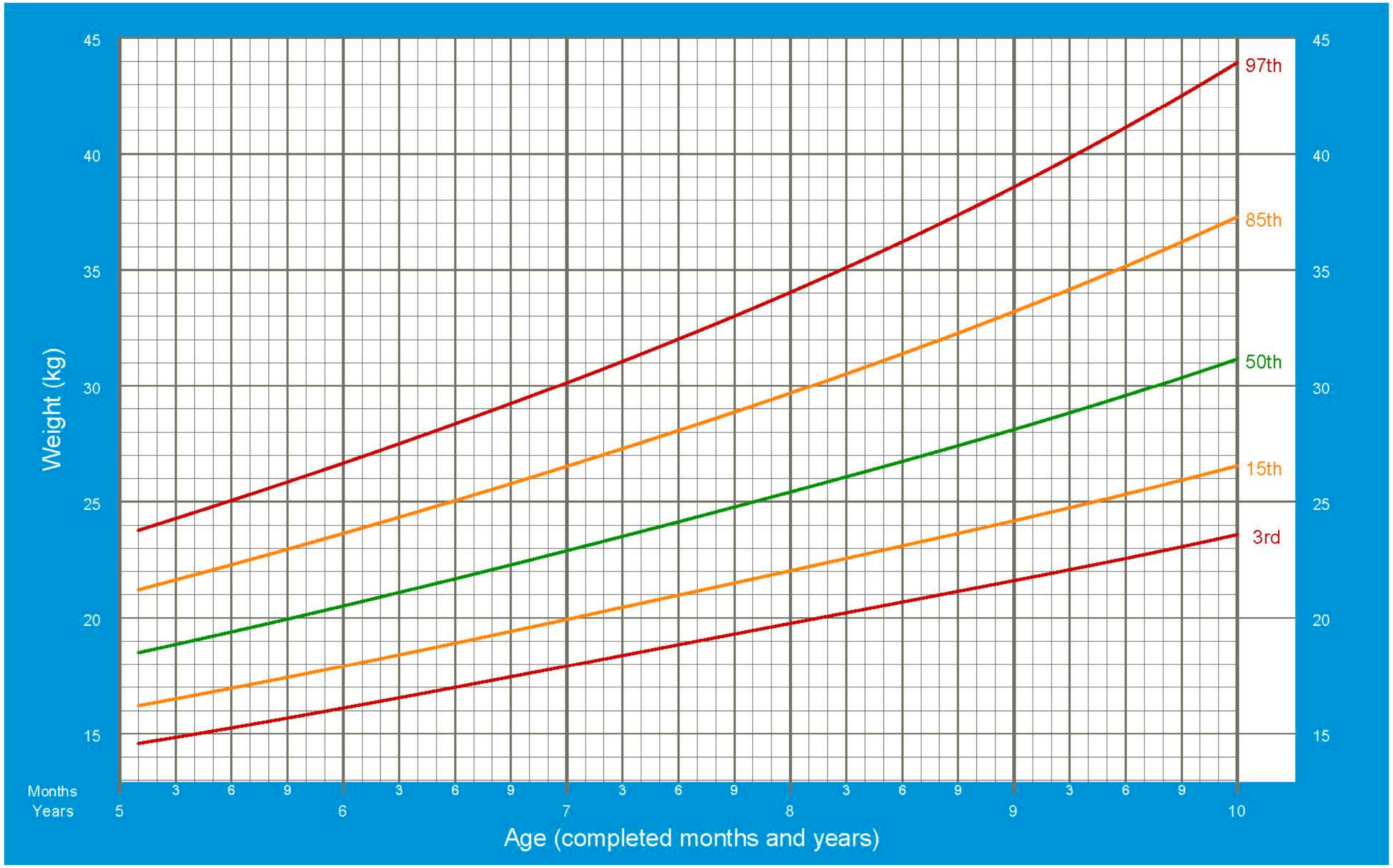
5 to 19 years (z-scores)



2007 WHO Reference

Weight-for-age BOYS

5 to 10 years (percentiles)

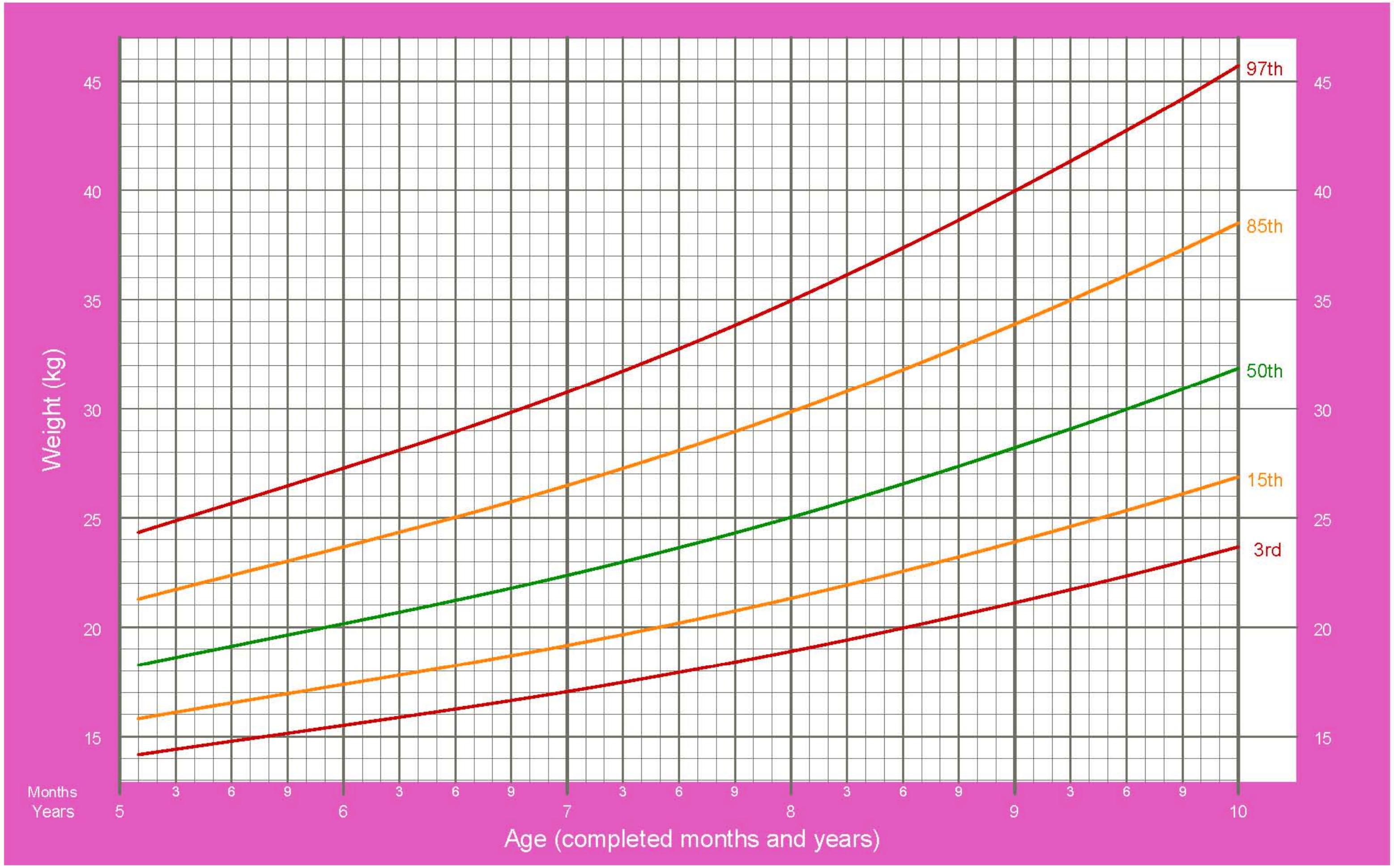


2007 WHO Reference

Weight-for-age GIRLS

5 to 10 years (percentiles)

World Health Organization

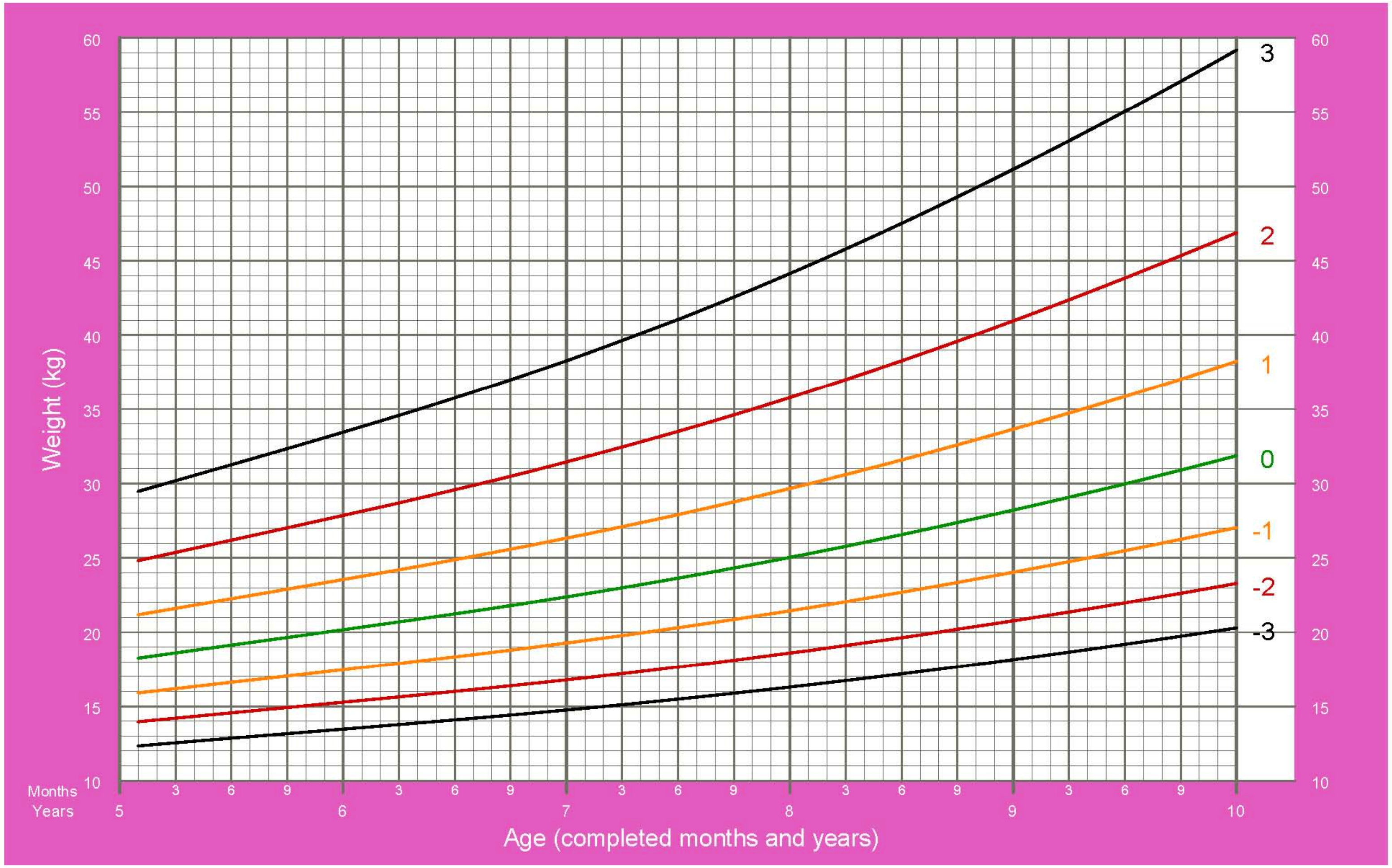


2007 WHO Reference

Weight-for-age GIRLS

5 to 10 years (z-scores)

World Health Organization



2007 WHO Reference

APPENDIX D

BODY MASS INDEX CUT OFFS (Cole et al. 2007): GIRLS

Body Mass Index (BMI) cut-off points for children and adolescents					
		Underweight		Overweight	Obese
Age (in years)	Adult cutoff point 16.00	Adult cutoff point 17.00	Adult cutoff point 18.50	Adult cutoff point 25.00	Adult cutoff point 30.00
			Girls		
5	12.5	13.09	13.94	17.15	19.17
5.5	12.4	12.99	13.86	17.2	19.34
6	12.32	12.93	13.82	17.34	19.65
6.5	12.28	12.9	13.82	17.53	20.08
7	12.26	12.91	13.86	17.75	20.51
7.5	12.27	12.95	13.93	18.03	21.01
8	12.31	13	14.02	18.35	21.57
8.5	12.37	13.08	14.14	18.69	22.18
9	12.44	13.18	14.28	19.07	22.81
9.5	12.53	13.29	14.43	19.45	23.46
10	12.64	13.43	14.61	19.86	24.11
10.5	12.78	13.59	14.81	20.29	24.77
11	12.95	13.79	15.05	20.74	25.42
11.5	13.15	14.01	15.32	21.2	26.05
12	13.39	14.28	15.62	21.68	26.67
12.5	13.65	14.56	15.93	22.14	27.24
13	13.92	14.85	16.26	22.58	27.76
13.5	14.2	15.14	16.57	22.98	28.2
14	14.48	15.43	16.88	23.34	28.57
14.5	14.75	15.72	17.18	23.66	28.87
15	15.01	15.98	17.45	23.94	29.11
15.5	15.25	16.22	17.69	24.17	29.29
16	15.46	16.44	17.91	24.37	29.43
16.5	15.63	16.62	18.09	24.54	29.56
17	15.78	16.77	18.25	24.7	29.69
17.5	15.9	16.89	18.38	24.85	29.84
18	16	17	18.5	25	30

BODY MASS INDEX CUT OFFS (Cole et al. 2007): BOYS

Body Mass Index (BMI) cut-off points for children and adolescents					
		Underweight		Overweight	Obese
Age (in years)	Adult cutoff point 16.00	Adult cutoff point 17.00	Adult cutoff point 18.50	Adult cutoff point 25.00	Adult cutoff point 30.00
Boys					
5	12.66	13.31	14.21	17.42	19.3
5.5	12.58	13.22	14.13	17.45	19.47
6	12.5	13.15	14.07	17.55	19.78
6.5	12.45	13.1	14.04	17.71	20.23
7	12.42	13.08	14.04	17.92	20.63
7.5	12.41	13.09	14.08	18.16	21.09
8	12.42	13.11	14.15	18.44	21.6
8.5	12.45	13.17	14.24	18.76	22.17
9	12.5	13.24	14.35	19.1	22.77
9.5	12.57	13.34	14.49	19.46	23.39
10	12.66	13.45	14.64	19.84	24
10.5	12.77	13.58	14.8	20.2	24.57
11	12.89	13.72	14.97	20.55	25.1
11.5	13.03	13.87	15.16	20.89	25.58
12	13.18	14.05	15.35	21.22	26.02
12.5	13.37	14.25	15.58	21.56	26.43
13	13.59	14.48	15.84	21.91	26.84
13.5	13.83	14.74	16.12	22.27	27.25
14	14.09	15.01	16.41	22.62	27.63
14.5	14.35	15.28	16.69	22.96	27.98
15	14.6	15.55	16.98	23.29	28.3
15.5	14.86	15.82	17.26	23.6	28.6
16	15.12	16.08	17.54	23.9	28.88
16.5	15.36	16.34	17.8	24.19	29.14
17	15.6	16.58	18.05	24.46	29.41
17.5	15.81	16.8	18.28	24.73	29.7
18	16	17	18.5	25	30