

**Substance Abuse
&
Hazard Recognition in the Home:**

**A Special Presentation to
Sacramento County Social Services**



**Presented By:
Jackie Long, MSET
In Conjunction With:
University of California, Davis
Northern California Training Academy**

Neurotransmitters and the Human Brain

THE TEN SYSTEMS OF THE HUMAN BODY

NERVOUS SYSTEM
BRAIN, SPINAL CORD,
NERVES, EYES AND EARS

RESPIRATORY SYSTEM
NOSE, THROAT, AND
BREATHING SYSTEMS

ENDOCRINE SYSTEM
HORMONE PRODUCING
GLANDS

CIRCULATORY SYSTEM
HEART, BLOOD VESSELS
AND BLOOD

MUSCULAR SYSTEM
SKELETAL MUSCLES
AND TENDONS

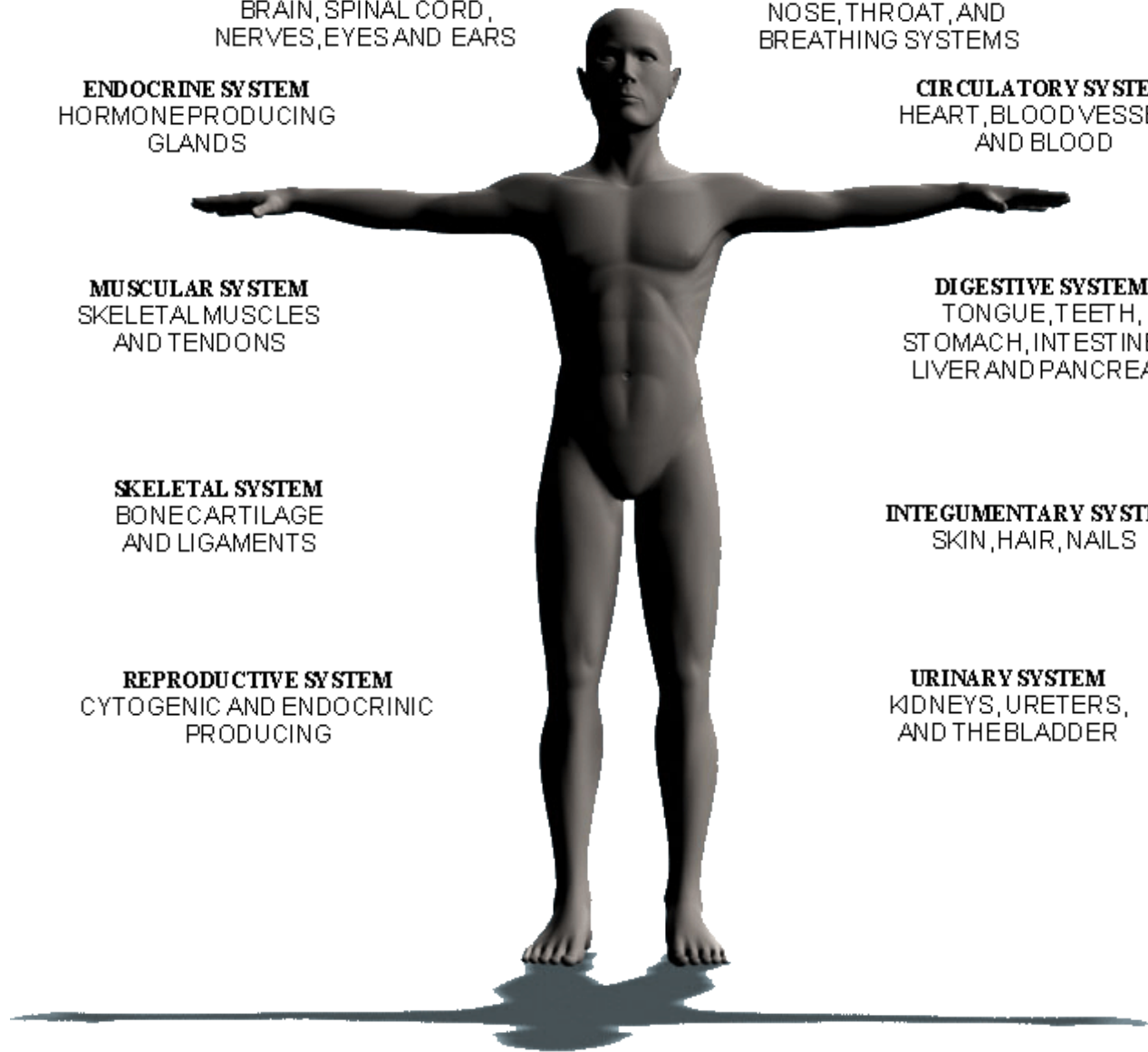
DIGESTIVE SYSTEM
TONGUE, TEETH,
STOMACH, INTESTINES,
LIVER AND PANCREAS

SKELETAL SYSTEM
BONE, CARTILAGE
AND LIGAMENTS

INTEGUMENTARY SYSTEM
SKIN, HAIR, NAILS

REPRODUCTIVE SYSTEM
CYTOGENIC AND ENDOCRINE
PRODUCING

URINARY SYSTEM
KIDNEYS, URETERS,
AND THE BLADDER



ALL OF THESE SYSTEMS INTERACT TO MAINTAIN A DYNAMIC BALANCE INVOLVING THE LEVELS OF SALTS, WATER, SUGARS, AND OTHER MATERIALS IN THE BODY FLUIDS. EACH SYSTEM PLAYS AN IMPORTANT ROLE IN MAINTAINING THE INTRICATE BALANCES OF THE BODY. THIS BALANCE IS KNOWN AS HOMEOSTASIS.

THESE SYSTEMS ARE REGULATED BY THE BRAIN IN TWO WAYS:

1. RELEASE OF CHEMICAL MESSENGERS VIA THE BLOODSTREAM. (NEUROHORMONES).
2. RELEASE OF ELECTRICAL/CHEMICAL MESSENGERS IN THE NERVOUS SYSTEM. (NEUROTRANSMITTERS)

THE NERVOUS SYSTEM

THERE ARE TWO TYPES OF NERVES IN THE HUMAN BODY:

MOTOR NERVES:

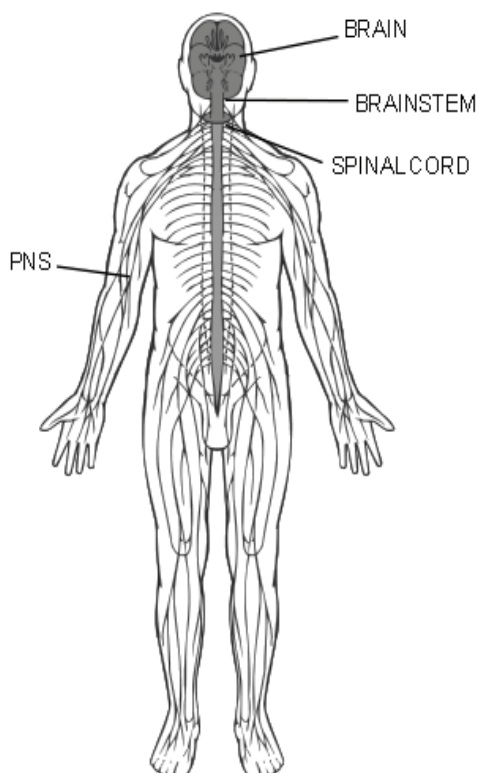
CARRY MESSAGES AWAY FROM THE BRAIN.

SENSORY NERVES:

BRING MESSAGES TO THE BRAIN.

IN THE HUMAN BODY, THE NERVOUS SYSTEM IS IDENTIFIED IN TWO MAJOR SYSTEMS:

1. **THE CENTRAL NERVOUS SYSTEM (CNS) CONSISTS OF:**
 - A. **THE BRAIN**
 - B. **BRAIN STEM**
 - C. **SPINAL CORD**



THIS IS THE BODY'S CONTROL CENTER. IT RECEIVES AND TRANSMITS INFORMATION VIA THE PERIPHERAL NERVOUS SYSTEM.

2. **THE PERIPHERAL NERVOUS SYSTEM (PNS)**

THIS REFERS TO THE TWELVE PAIRS OF CRANIAL NERVES THAT PROJECT FROM THE BRAIN, AND THE 31 PAIRS OF NERVES THAT ARE ROOTED IN THE SPINAL CORD. THE PERIPHERAL NERVES ARE DIVIDED INTO TWO MAIN GROUPS:

SOMATIC AND AUTONOMIC

THE SOMATIC (BODILY) NERVOUS SYSTEM:

THE SOMATIC SYSTEM CONTAINS TWO KINDS OF NERVES, THE MOTOR AND SENSORY NERVES. THE MOTOR NERVES BRANCH FROM THE CENTRAL NERVOUS SYSTEM AND REGULATE THE MUSCLES ACTION BY ORDERS FROM THE BRAIN OR SPINAL CORD. THE SENSORY NERVES TAKE THE STIMULUS SIGNALS FROM THE SKIN, EYES, TONGUE, NOSTRILS, JOINTS AND MUSCLES TO THE CENTRAL NERVOUS SYSTEM.

THE AUTONOMIC (SELF REGULATING) NERVOUS SYSTEM:

THE AUTONOMIC SYSTEM AUTOMATICALLY CONTROLS THE GLANDS AND ORGANS LIKE THE LUNGS, HEART, BLOOD VESSELS AND PUPILS OF THE EYES. THIS SYSTEM IS CONNECTED TO THE CENTRAL NERVOUS SYSTEM AND CONSISTS OF TWO SUBSYSTEMS.

THESE TWO SYSTEMS WORK IN OPPOSITION OF EACH OTHER IN ORDER TO MAINTAIN HOMEOSTASIS. THESE SUBSYSTEMS ARE:

THE SYMPATHETIC NERVOUS SYSTEM:

THE SYMPATHETIC NERVOUS SYSTEM INCREASES THE BODY'S INTERNAL ACTIVITY, INCREASING HEART RATE, DILATING PUPILS, AND CHANGING THE BLOOD FLOW FROM THE DIGESTIVE TRACTS TO THE BRAIN AND LARGE MUSCLE GROUPS. (FIGHT OR FLIGHT)

DRUGS THAT AFFECT THIS SYSTEM ARE KNOWN AS SYMPATHOMIMETIC. THEY CAUSE EXCITEMENT AND STIMULATION.

STIMULANTS, HALLUCINOGENS, CANNABIS, HALLUCINOGENIC STIMULANTS, DISSOCIATIVE ANESTHETICS, INHALANTS, AND MANY OF THE NEW DESIGNER DRUGS MEET THIS CLASSIFICATION.

THE PARASYMPATHETIC NERVOUS SYSTEM:

THE PARASYMPATHETIC NERVOUS SYSTEM REVERSES THE EFFECTS OF THE SYMPATHETIC SYSTEM IN THAT IT SLOWS HEART RATE, CONSTRICTS PUPILS, AND RETURNS THE BLOOD FLOW BACK TO THE INTESTINES.

DRUGS THAT AFFECT THIS SYSTEM ARE KNOWN AS PARASYMPATHOMIMETIC. THEY CAUSE DROWSINESS, MUSCLE RELAXATION, AND LOWER BLOOD PRESSURE.

OPIATES AND DEPRESSANTS MEET THIS CLASSIFICATION.

THE NEURON

THE METHOD IN WHICH THESE MESSAGES ARE TRANSMITTED THROUGH THE NERVOUS SYSTEM IS CONDUCTED VIA ELECTRICAL AND CHEMICAL IMPULSES THROUGH NEURONS.

EACH NEURON CONSISTS OF A SOMA (CELL BODY), DENDRITES (RECEIVE IMPULSES) AND AN AXON (TRANSMITS IMPULSES). BETWEEN THE AXON AND DENDRITE IS A GAP KNOWN AS A **"SYNAPSE."**

NEUROTRANSMITTERS ARE RELEASED VIA A ELECTRICAL IMPULSE FROM THE PRESYNAPTIC AXON (FIRING CELL) AND TRAVEL TO THE RECEPTOR SITE OF THE POST SYNAPTIC DENDRITE (CHEMICAL IMPULSE). FROM THERE THE ELECTRICAL IMPULSE IS CARRIED ON TO THE NEXT NEURON.

RECEPTOR SITES:

THESE ARE AREAS IN THE BRAIN AND NERVOUS SYSTEM WHERE EITHER A NEUROTRANSMITTER OR NEUROHORMONE ATTACHES ITSELF TO A RECEPTOR SITE AND THE NERVE PERFORMS ITS INTENDED FUNCTION. SOME OF THESE SITES ARE KNOWN TO AFFECT:

- STIMULATION
- RELAXATION
- PAIN RELIEF
- STRESS CONTROL
- EUPHORIA
- MEMORY
- BREATH RATE

BIOCHEMICALS:

THE VARIOUS BIOCHEMICALS IN THE BODY HAVE FUNCTIONS INSIDE AND OUTSIDE OF THE NERVOUS SYSTEM.

NEUROHORMONES:

CHEMICALS THAT ARE PRODUCED IN A GLAND AND ACT ON NERVOUS TISSUE OR OTHER GLANDS. MANY ARE PRODUCED IN THE PITUITARY GLAND.

EXAMPLES OF NEUROHORMONES:

ENDORPHIN
ADRENALCORTICOTROPIN (ACTH)
FOLLICLE STIMULATING (FSH)
LEUTEINIZING (LH)
PROLACTIN

NEUROCHEMICAL:

A BIOCHEMICAL THAT IS ACTIVE INSIDE
THE NERVOUS SYSTEM.

NEUROTRANSMITTER:

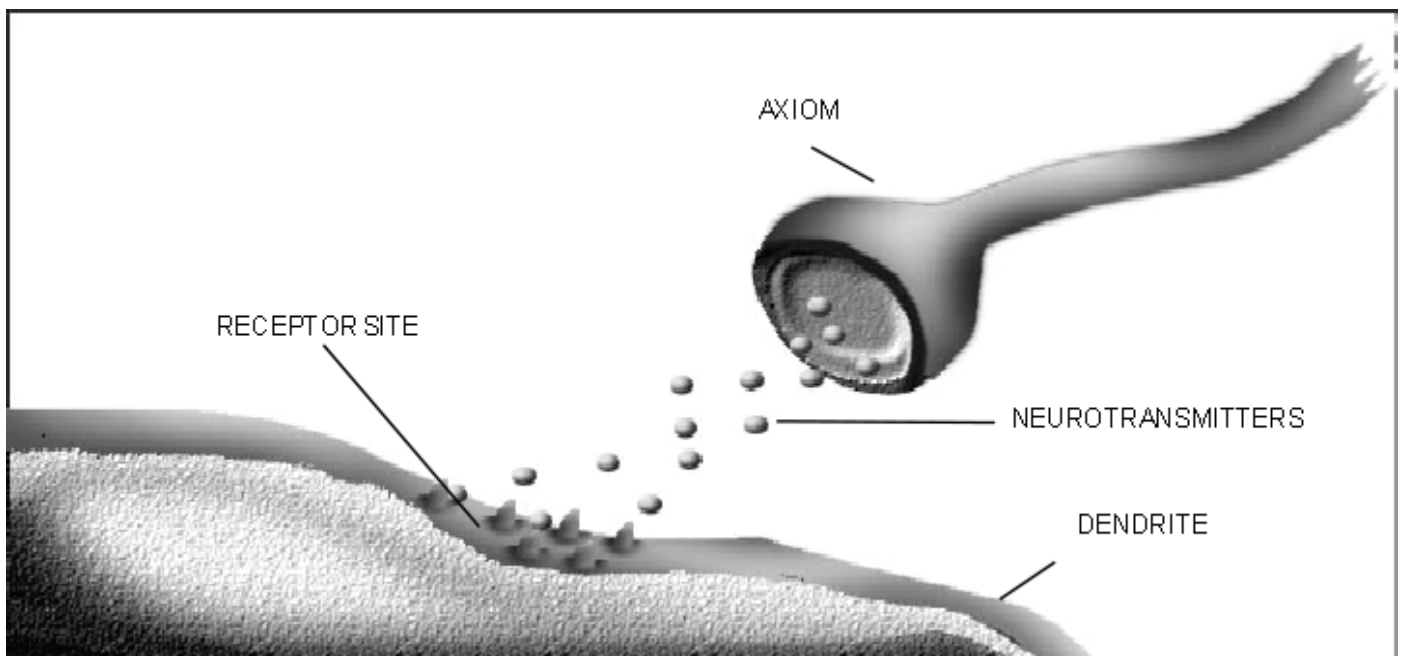
A BIOCHEMICAL WHICH TRANSMITS
ACROSS THE SYNAPTIC GAP.

EXAMPLES OF NEUROTRANSMITTERS:

DOPAMINE
SEROTONIN
NOREPINEPHRINE
GAMMA AMINO BUTYRIC ACID
(GABA)

LIGAND:

BIOCHEMICAL STORED IN THE BRAIN
THAT ATTACHES TO A RECEPTOR.

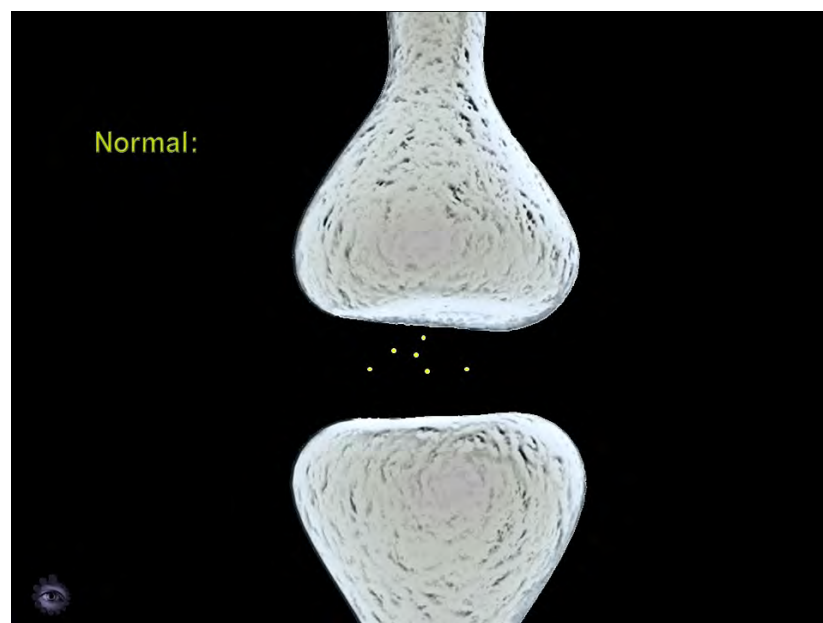


KEY CONCEPT:

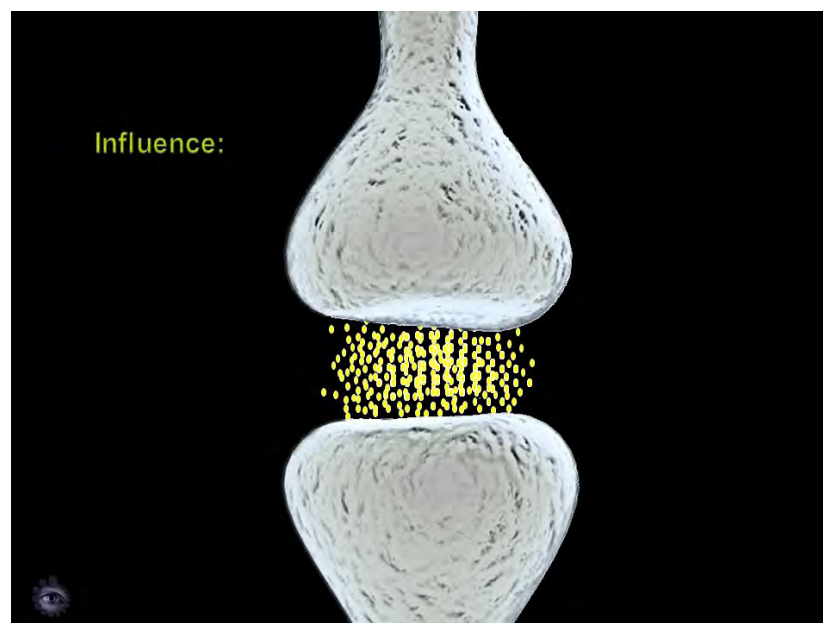
THE THREE FOLLOWING VIDEOS DEPICT THE NEUROCHEMICALS OF DOPAMINE BEING RELEASED AT THE SYNAPTIC CAP IN THREE MODELS; NORMAL TRANSMISSION, TRANSMISSION BY DRUG USE (UNDER THE INFLUENCE), AND TRANSMISSION DURING WITHDRAWAL OR AFTER NEUROADAPTATION HAS TAKEN PLACE.

CLICK ON EACH VIDEO TO WATCH THE DEMONSTRATION.

HOW WOULD THE PERSON IN THE THIRD MODEL VIDEO FEEL AS COMPARED TO THE PERSON IN EITHER OF THE MODELS ONE AND TWO?



VIDEO MODEL ONE: NORMAL TRANSMISSION



VIDEO MODEL TWO: INFLUENCE TRANSMISSION



VIDEO MODEL THREE: NEUROADAPTATION/WITHDRAWAL TRANSMISSION

Major Neurotransmitters Depleted By Drug Use

NEUROTRANSMITTER	MAJOR FUNCTIONS	DRUGS THAT DEplete
ENDORPHIN	PAIN RELIEF, ENDURANCE	HEROIN, CANNABIS, DISSOCIATIVE ANESTHETICS (D/A)
DOPAMINE	MUSCLE TONE, ENERGY	NICOTINE, CAFFEINE,
NOREPINEPHRINE	STIMULATION, EATING, MOTIVATION, PLEASURE, ATTENTION SPAN	COCAINE, METHAMPHETAMINE
SEROTONIN	MENTAL STABILITY, APPETITE, SLEEP CONTROL, SELF-ESTEEM	ALCOHOL, NICOTINE, COCAINE, D/A
GAMMA AMINO BUTYRIC ACID	MUSCLE RELAXANT, TRANQUILIZER	ALCOHOL, NICOTINE, CANNABIS, GHB
ACETYLCHOLINE	MEMORY, LEARNING, REFLEXES	CANNABIS, NICOTINE
CORTISONE, CORTICOTROPIN	IMMUNE SYSTEM, HEALING, STRESS	HEROIN, ANABOLIC STEROIDS, COCAINE

METHODS OF INGESTION

USABLE FORMS OF DRUGS:

“HCL” - HYDROCHLORIDE - WATER SOLUBLE

“BASE” - NON-WATER SOLUBLE, SMOKABLE FORM ONLY

PRIMARY INGESTION ROUTES:

ORAL (SWALLOW)

20 TO 40 MINUTES

NASAL (SNORT/INHALATION)

1 TO 5 MINUTES

INJECTION (KNOWN AS THE “**RUSH**”)

INTRAVENOUS (I.V.)

4 TO 7 SECONDS

INTRAMUSCULAR (I.M.)

1 TO 5 MINUTES

SUBCUTANEOUS (S.C.)

1 TO 5 MINUTES

SMOKING (KNOWN AS THE “**BLAST**”)

3 TO 6 SECONDS

THE PERSON USING A DRUG WANTS THE GREATEST EFFECT. THEREFORE, ORAL INGESTION IS THE LEAST PLEASURABLE METHOD. SMOKING IS THE METHOD THAT PRODUCES THE MOST PLEASURE TO THE BRAIN.

NOT ALL DRUGS CAN BE SMOKED. BUT FOR THE FIRST TIME IN THE HISTORY OF THE HUMAN RACE THE MOST ADDICTIVE DRUGS ARE IN A SMOKED FORM; HEROIN, COCAINE, METHAMPHETAMINE, AND CANNABIS/SYNTHETIC CANNABIS.

WEIGHTS AND MEASURES

KILOGRAM - 1000 GRAMS - 2.2 POUNDS

POUND - 454 GRAMS - 16 OUNCES

OUNCE - 28.5 GRAMS

“PIECE” - 22 TO 25 GRAMS

1/2 OUNCE - 14.25 GRAMS

1/4 OUNCE - 7 GRAMS

1/8 OUNCE - 3.5 GRAMS “EIGHT BALL”

1/16 OUNCE - 1.75 GRAMS “TEENA”

1 GRAM - (CONTENTS IN SWEET N LOW)

1/10 GRAM - KNOWN AS A “POINT”
THIS IS THE DOSAGE AMOUNT FOR MOST DRUGS

MILLIGRAM - 1/1000 TH OF A GRAM

MICROGRAM - 1/1,000,000 TH OF A GRAM





ONE GRAM QUANTITY



ONE GRAM = 1,000 MILLIGRAMS



(2) HALF GRAMS - 500 MILLIGRAMS



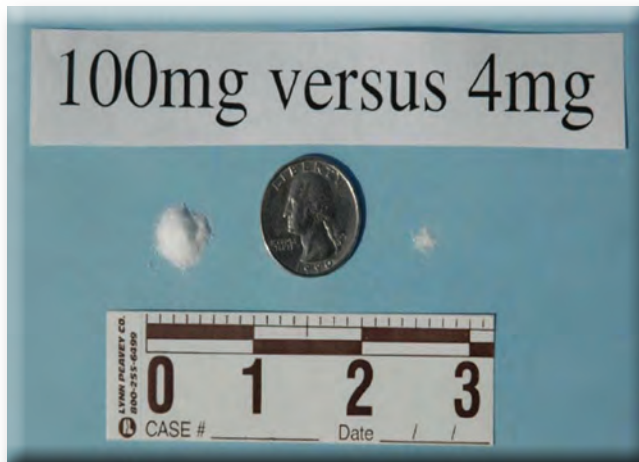
(4) QUARTER GRAMS - 250 MILLIGRAMS



(10) 100 MILLIGRAMS - EACH IS A STREET DOSE



(9) 100 MILLIGRAMS, (5) 20 MILLIGRAMS



**100 MILLIGRAMS COMPARED TO
4 MILLIGRAMS**



**125 MICROGRAMS:
1 GRAM = 1,000,000 MICROGRAMS**



(1) 80 MILLIGRAM PILL = (16) 5 MILLIGRAM PILLS

CLASSES OF DRUGS:

THERE ARE THOUSANDS OF COMPOUNDS THAT, WHEN TAKEN INTO THE BODY, PRODUCE CHANGES IN HOW THE BODY AND MIND FUNCTION. "PSYCHOACTIVE DRUGS" ARE THOSE FOR WHOM THE PRIMARY EFFECTS ARE ON BRAIN FUNCTION, ESPECIALLY THOSE THAT AFFECT THOUGHT PROCESSES, MOOD, ALERTNESS, PERCEPTIONS, AND BEHAVIOR. OF PSYCHOACTIVE DRUGS, SOME ARE KNOWN TO LEAD TO ADDICTION. NOT ALL DRUGS THAT WORK ON THE BRAIN ARE ADDICTING; FOR EXAMPLE, MEDICATIONS SUCH AS ANTIDEPRESSANTS WORK ON SEVERAL BRAIN FUNCTIONS AND DON'T PRODUCE INTOXICATION OR ADDICTION. HOWEVER, SOME MEDICATIONS WITH LEGITIMATE AND VALUABLE USES IN MEDICINE CAN READILY LEAD TO ADDICTION IF USED IMPROPERLY.

A PROPERTY THAT SEVERAL DRUGS HAVE IN COMMON IS THEIR ABILITY TO LEAD TO "**PHYSICAL DEPENDENCE**." THIS MEANS THAT THE DRUG HAS BEEN TAKEN LONG ENOUGH FOR "TOLERANCE" TO DEVELOP, AND THESE USERS WILL BECOME SICK WHEN THEY STOP USING. PHYSICAL DEPENDENCE PRODUCING SERIOUS ILLNESS DEVELOPS WITH USE OF TRANQUILIZERS AND PAIN MEDICINE IF USED FOR A LONG ENOUGH TIME (AS SHORT AS WITHIN 2 WEEKS). PHYSICAL DEPENDENCE IS SHARED IN COMMON BETWEEN BOTH PAIN MANAGEMENT AND ADDICTION. OTHER WORDS FOR "PHYSICAL DEPENDENCE" ARE "HABIT FORMING" AND "PHYSICALLY ADDICTING." BOTH TERMS REFLECT THESE DRUGS ABILITY TO CAUSE ILLNESS ON CESSATION OF USE BY TOLERANT INDIVIDUALS.

PSYCHEDELIC DRUGS:

PSYCHEDELICS CAN PRODUCE HIGH DEGREES OF INTOXICATION, BASED ON THEIR ABILITY TO REDUCE THE "FILTERING" PROPERTIES OF THE BRAIN, FLOODING CONSCIOUSNESS WITH HEIGHTENED SENSATION, EMOTION, AND INTENSE THOUGHT. THE QUALITY OF THE "TRIP" IS DEPENDENT ON THE MINDSET OF THE USER (GOOD MOOD OR BAD MOOD), AND THE SETTING IN WHICH THE DRUG IS TAKEN (A POSITIVE, HAPPY ENVIRONMENT INCREASES THE CHANCE THAT A "GOOD TRIP" WILL OCCUR). THE EXPECTATIONS AND PREVIOUS EXPERIENCES WITH THE DRUG STRONGLY INFLUENCE THE QUALITY OF PSYCHEDELIC INTOXICATION. IF THE USER EXPECTS A GOOD EXPERIENCE, THE CHANCES OF A GOOD EXPERIENCE INCREASE. IF THE USER HAS PREVIOUSLY HAD A BAD EXPERIENCE, OR HAS UNCERTAINTY AND APPREHENSION ABOUT WHAT TO EXPECT, A VERY BAD EXPERIENCE CAN RESULT. INVARIABLY, IF THE MOOD CHANGES OR THREAT ENTERS THE SETTING, A CATASTROPHIC AND TERRIFYING "BAD TRIP" CAN READILY OCCUR. PLEASURE AND EUPHORIA THAT DEVELOP WITH USE IS INDIRECTLY PRODUCED, BY MAGNIFICATION OF WHATEVER PLEASURABLE EXPERIENCES ARE IN THE ENVIRONMENT. SIMILARLY, TERROR AND FRIGHTENING HALLUCINATIONS CAN APPEAR SUDDENLY IF THE ENVIRONMENT CHANGES DRASTICALLY. PSYCHEDELIC DRUGS ARE NOT "ADDICTING." HOWEVER, "ECSTASY", MDMA, IS A HYBRID DRUG WITH PROPERTIES OF BOTH A PSYCHEDELIC DRUG AND METHAMPHETAMINE; THOSE WHO USE IN A CONTINUOUS PATTERN ("ROLLING E", "THIZZING", AND "MOLLY"), CAN BECOME ADDICTED TO IT AND SUFFER FROM LOW SEROTONIN PRODUCTION WHICH CAN PRODUCE DEPRESSION AND WILL REQUIRE MEDICAL TREATMENT.

PSYCHEDELICS SAMPLE LIST

ACID (LSD)	MUSHROOMS (PSILOCYBIN)
DMT	2CB
PEYOTE	MDMA

GLUTAMATE BLOCKERS:

SIMILAR TO PSYCHEDELICS IN THEIR ABILITY TO PRODUCE A PLEASURABLE “HIGH” ONLY BY INDIRECT MEANS IS A SMALL GROUP OF DRUGS SOMETIMES FOUND AMONG DRUG ABUSERS AND PARTY GOERS, INCLUDING PHENCYCLIDINE (PCP, ANGEL DUST), KETAMINE (A DISSOCIATIVE ANESTHETIC DRUG USED IN MEDICINE), AND DEXTROMETHORPHAN (DXM, COUGH SYRUP, IN VERY HIGH DOSES). MOST USERS DO NOT FIND INTOXICATION FROM THESE DRUGS PARTICULARLY ENJOYABLE, BUT THEY CAN PRODUCE TERRIFYING HALLUCINATIONS AND DEATH.

IN THIS CURRICULUM, THE WORD “DRUGS” REFERS TO DRUGS THAT INTERACT WITH THE BRAIN’S PLEASURE CHEMISTRY TO CAUSE THE SENSATION OF BEING “HIGH.” THESE ARE CALLED “ADDICTING DRUGS.” THESE DRUGS ARE CLASSIFIED INTO DIFFERENT GROUPS:

OPIATES:

PAIN MEDICATIONS ARE POWERFUL DRUGS THAT HAVE ESSENTIAL MEDICAL USES IN THE TREATMENT OF PAIN. ALL OPIATES WORK ON THE SAME BRAIN REGION, AND VARY PRIMARILY ON HOW STRONG AN EFFECT THEY PRODUCE (POTENCY), AND FAST OR SLOWLY THEY ENTER THE BRAIN AND PRODUCE THEIR EFFECTS.

BEGINNING IN THE EARLY 2000S, AN EPIDEMIC OF OPIATE DRUG MISUSE BEGAN, PRIMARILY AFFECTING TEENAGERS AND YOUNG ADULTS. ADDICTION TO OPIATES DEVELOPS QUICKLY AND ONCE ESTABLISHED, UP TO 20% WILL DIE. MANY YOUNG USERS, UNABLE TO AFFORD THE INCREASING COST OF THE DRUGS SWITCH TO USE OF HEROIN, THE MOST POTENT AND DEADLY OF ALL THE OPIATES.

METHADONE AND BUPRENORPHINE (SUBOXONE) WERE DEVELOPED TO TREAT OPIATE ADDICTION, AND BOTH ARE HIGHLY SUCCESSFUL IN REDUCING FATALITIES. BUPRENORPHINE DOES NOT PRODUCE A HIGH IN TOLERANT USERS, AND IS DIFFICULT TO ABUSE BECAUSE IT PRODUCES WITHDRAWAL SYMPTOMS IF THE DOSE TAKEN IS TOO HIGH. IT IS SAFE AND EFFECTIVE FOR LONG TERM USE, WHEREAS CESSATION OF SUBSTITUTION THERAPY WITH SUBOXONE LEADS TO HIGH RATES OF RELAPSE AND DEATH.

Opiate Effects	Opiate Withdrawal	Opiate Sample List
EFFECTS • Analgesia • Euphoria • Anxiolytic- calming • Sleep Inducing • Sensation of warmth • Constipation • Dry mucous membranes • Pupils constrict (pinpoint pupils) • Sedation/Sleepiness (nodding) • Depresses respiration	WITHDRAWAL • Pain • Dysphoria • Anxiety • Insomnia • Diarrhea • Rhinorrhea (runny nose) • Chills • Pupils dilate • Increases heart rate & blood pressure	• Opium • Heroin • Oxycontin • Vicodin • Fentanyl • Tramadol (Ultraam) • Dilaudid • Percodan • Methadone

Prescription Opiates - Generic: Brand Names	
• Codeine with acetaminophen • Hydrocodone: Vicodin, Lortab, Norco • Hydromorphone: Dilaudid • Oxycodone: Percodan, OxyContin	• Morphine sulfate: MS Contin • Fentanyl: Duragesic (transdermal), Actiq • Methadone: Methadose • Buprenorphine: Suboxone, Subutex

SEDATIVE-HYPNOTICS:

THESE ARE ALL CALMING DRUGS AND THEY INCLUDE ALCOHOL, TRANQUILIZERS, MUSCLE RELAXERS AND SOME SLEEPING MEDICINE. THERE ARE SIGNIFICANT MEDICAL USES FOR SEDATIVE-HYPNOTIC DRUGS, ESPECIALLY FOR THE SHORT TERM (LESS THAN 2 WEEKS) TREATMENT OF ANXIETY AND PANIC. THESE DRUGS PRODUCE DANGEROUS WITHDRAWAL SYNDROMES IN TOLERANT USERS.

Sedative-Hypnotic Effects	Sedative-Hypnotic Withdrawal	Sedative-Hypnotic Sample List
EFFECTS	WITHDRAWAL	
•Calm euphoria	• Dysphoria*	• Alcohol
• Release of inhibitions	• Anxiety*	• Barbiturates
• Sleep inducing	• Insomnia*	• Tranquilizers (xanax, ativan)
• Sedation / Sleepiness	• Sweating (Diaphoresis)*	• GHB
• Slurred Speech	• Tremor	• Somal
• Unsteady gait (Ataxia)	• Tachycardia (↑heart rate)	• Ambien
• Confusion	• Hypertension (↑blood pressure)	
• Forgetfulness	• Hyperventilation(↑breathing)	
• Slows heart rate	• Elevated temperature	
• Decreases blood pressure	• Hallucinations	
	• Seizures	
	• Delirium tremens	

STIMULANTS:

“UPPER” DRUGS THAT STIMULATE THE PARTS OF THE BRAIN THAT LEAD TO ALERTNESS, INCREASED ENERGY, AND PLEASURE. COCAINE AND AMPHETAMINE ARE COMMON EXAMPLES OF STIMULANTS AND THEY PRODUCE TOLERANCE AND SEVERE ADDICTION. IN THE PERIOD IMMEDIATELY AFTER CESSATION OF USE, PHYSIOLOGIC SYMPTOMS SUCH AS FATIGUE AND LOW BLOOD PRESSURE CAN APPEAR. ADDITIONALLY, PSYCHOLOGIC SYMPTOMS SUCH AS ANXIETY, DEPRESSION, CONFUSION, AND A STRONG NEED TO SLEEP ARE COMMON. ONCE A STIMULANT USER HAS FINALLY CAUGHT UP ON THEIR SLEEP, SERIOUS INSOMNIA APPEARS WHICH CAN PERSIST FOR MONTHS, AS CAN ALL OF THE OTHER PSYCHOLOGIC SYMPTOMS. STIMULANTS ARE SOMETIMES REFERRED TO “PSYCHOLOGICALLY ADDICTING”. HOWEVER, THE MECHANISMS THAT PRODUCE PHYSICAL DEPENDENCE ARE THE SAME AS THOSE THAT PRODUCE PSYCHOLOGIC DEPENDENCE; THEY ARE ON A CONTINUUM OF CHANGES IN THE FUNCTION OF BOTH THE BODY AND MIND.

METHAMPHETAMINE IS THE MOST POWERFUL IN THE STIMULANT CLASS, AND PRODUCES DANGEROUS LEVELS OF INTOXICATION AND ADDICTION. A CLOSE COUSIN TO IT IS ADDERALL, A MIXTURE OF AMPHETAMINES INTENDED TO TREAT ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD). IT IS EASILY ABUSED, AND SOME INDIVIDUALS HAVE PROGRESSED TO USING OVER 10 TIMES THE SAFE RECOMMENDED DOSE. STIMULANTS INCREASE IN THEIR PSYCHOACTIVE EFFECTS AND DANGER WHEN SMOKED OR INJECTED INTRAVENOUSLY.

CANNABIS:

CANNABIS IS IN A UNIQUE CLASS OF DRUGS WHICH WORKS THROUGH ITS OWN UNIQUE BRAIN RECEPTORS. THERE IS WIDESPREAD MISUNDERSTANDING ON WHETHER CANNABIS IS "HABIT FORMING" OR "ADDICTING." IN FACT, CESSATION OF USE BY SOMEONE WHO IS TOLERANT TO IT WILL ALWAYS PRODUCE SYMPTOMS THAT IMPAIR BOTH BODY FUNCTION AND MIND FUNCTION. PROMINENT SYMPTOMS OF IRRITABILITY, IMPAIRED CONCENTRATION, MEMORY IMPAIRMENT, AND SLEEP DISORDER ARE COMMONLY SEEN. ADDICTION TO CANNABIS IS COMMON (INABILITY TO STOP USING OR STAY STOPPED), AND CAUSES SERIOUS IMPAIRMENT IN CONCENTRATION, MEMORY, MOOD AND SLEEP. THE UNCOMFORTABLE SYMPTOMS OF CANNABIS WITHDRAWAL CAN PERSIST FOR SEVERAL MONTHS AFTER CESSATION OF USE. APPEARANCE OF THESE SYMPTOMS INCREASES CRAVING FOR THE DRUG, AND ARE MAJOR BARRIERS TO STAYING SOBER.

Cannabis Effects	Cannabis Withdrawal
EFFECTS	WITHDRAWAL
• Sleep inducing	• Insomnia / nightmares
• Appetite stimulation	• Anorexia / weight loss
• Induces calm	• Restlessness, extreme irritability
• Induces "mellow" feelings	• Depressed mood, anger outbursts
• Elevates mood	• Shakiness / sweating
• Reduces muscle tone	• Stomach pain / physical discomfort
• Produces pleasure, interest	• Boredom

TOBACCO:

THIS DRUG CONTAINS NICOTINE WHICH ACTIVATES ONE OF THE MAIN REGULATING SYSTEMS OF THE BODY AND MIND, THE ACETYLCHOLINE RECEPTOR IN THE "PARASYMPATHETIC NERVOUS SYSTEM." THIS KEY REGULATORY SYSTEM COUNTERACTS THE "FLIGHT OR FIGHT" ACTIVITY OF THE "SYMPATHETIC NERVOUS SYSTEM". NICOTINE PRODUCES SLIGHT INCREASES IN PLEASURE, BUT IS USED FOR ITS CALMING AND ALERTING EFFECTS. BECAUSE THE DOSE CAN BE "FINE-TUNED" TO SUIT THE USER, IT IS ONE OF THE MOST ADDICTING SUBSTANCES IN THE WORLD.

INHALANTS:

THIS IS A CLASS OF DRUGS OFTEN ABUSED BY INHALING FUMES OR GASES THAT COME FROM A SOLID, A LIQUID OR ARE OTHERWISE EXPELLED FROM A CANISTER OR CONTAINER. THERE ARE NO KNOWN MEDICINAL USES FOR ANY SUBSTANCE THAT IS ABUSED IN THIS MANNER THAT LEADS TO ADDICTION. IT APPEARS THAT ANY "HIGH" THAT MAY COME FROM USING THESE SUBSTANCES CANNOT BE SEPARATED FROM THE DAMAGE THEY CAUSE THE BRAIN AND BODY. THE SENSATION PRODUCED BY INHALANTS IS SIMILAR TO THE GIDDINESS THAT IS EXPERIENCED AFTER A PERIOD OF TWIRLING AND SPINNING UNTIL FALLING.

IT IS OFTEN DIFFICULT TO FIND ACCURATE, UNBIASED INFORMATION ABOUT DRUGS. IN THE WEBLIOGRAPHY YOU CAN FIND MANY AUTHORITATIVE SOURCES FOR FINDING OUT ABOUT DRUGS AND HOW THEY WORK, AND HOW DRUG ABUSE LEADS TO HIGH COSTS TO THE INDIVIDUAL AND THE COMMUNITY. "EROWID.ORG" IS A COMPENDIUM OF DRUGS AND THEIR EFFECTS, WITH SCIENTIFIC INFORMATION AND USER EXPERIENCES LISTED FOR HUNDREDS OF DIFFERENT DRUGS.