

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

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



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Inhalants

OBJECTIVE SIGNS AND SYMPTOMS OF INHALANT INFLUENCE

EYES:

HGN PRESENT
VGN MAY BE PRESENT*
STRABISMUS*

NORMAL / POSSIBLE DILATED PUPILS

BLOODSHOT SCLERA

POSSIBLE DROOPY EYELIDS

PHYSICAL SIGNS:

SLURRED SPEECH
DRUNKEN APPEARANCE
FLUSHED APPEARANCE
POSSIBLE SWEATING

APPEARANCE:

UNCOORDINATED
LACK OF MUSCLE RIGIDITY

VITAL SIGNS:

ELEVATED PULSE RATE
ELEVATED BLOOD PRESSURE

OTHER SIGNS:

ALTERED SHAPES AND COLORS
DISTORTED TIME / SPACE
PERCEPTIONS
FLOATING SENSATIONS
EUPHORIA

BIZARRE THOUGHTS
DIZZINESS
NUMBNESS
NAUSEA / VOMITING
CONFUSION
INCOMPLETE VERBAL
RESPONSES

IRIS CORNERSTONES:

PULSE INCREASED

HGN PRESENT

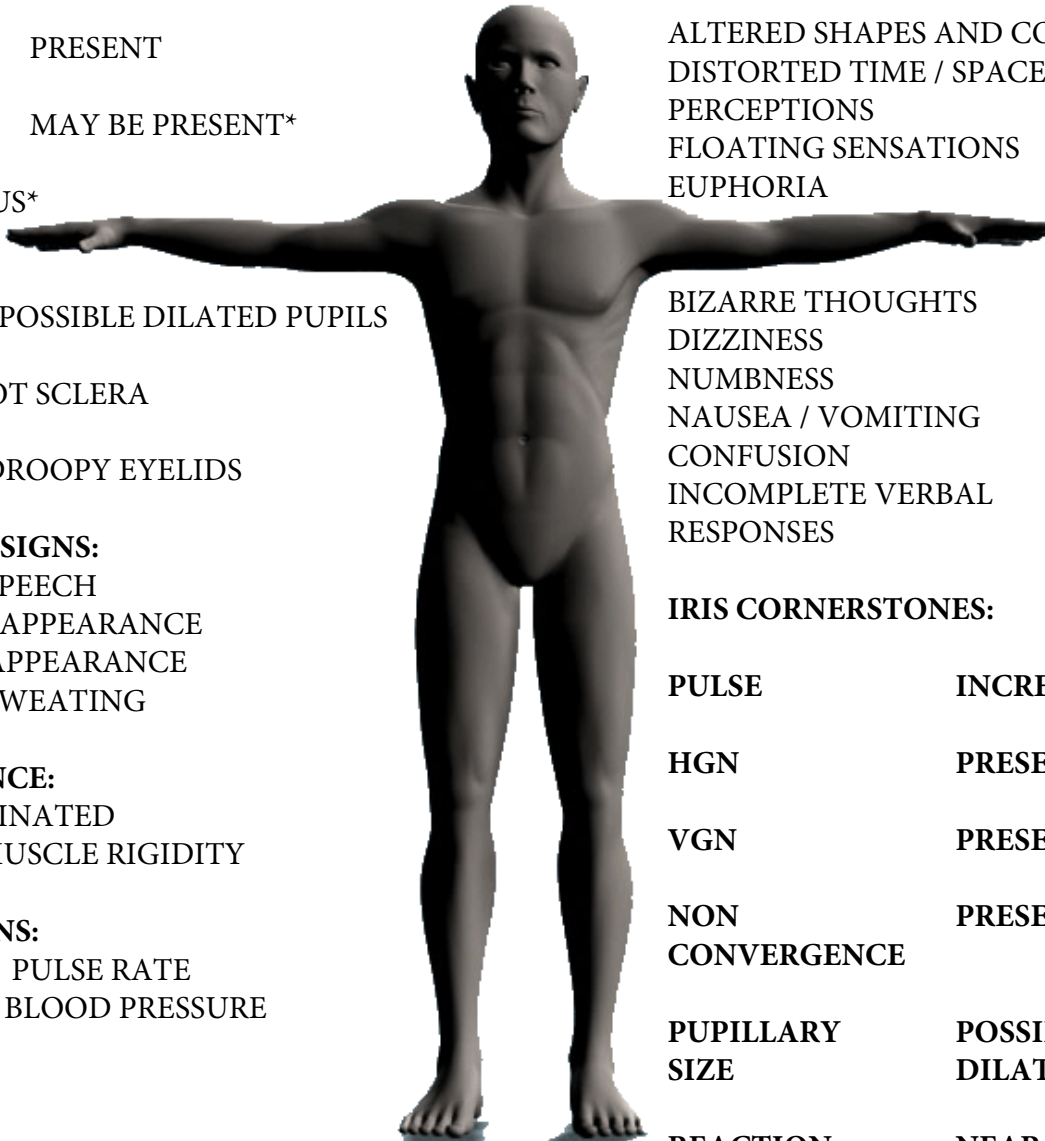
VGN PRESENT

NON PRESENT
CONVERGENCE

PUPILLARY POSSIBLE
SIZE DILATION

REACTION NEAR NORMAL

ROHMBERG INCREASED



ORGANIC SOLVENTS & SPRAYS

COMMON NAMES

ACTIVE INGREDIENTS

AIRPLANE GLUE

TOLUENE, ETHYL ACETATE

RUBBER CEMENT

TOLUENE, HEXANE, METHYL
CHLORIDE, ACETONE, METHYL ETHYL
KETONE, METHYL BUTYL KETONE

PVC CEMENT

TRICHLOROETHYLENE

PAINT SPRAYS

TOLUENE, BUTANE, PROPANE,
FLUOROCARBONS, HYDROCARBONS

HAIR SPRAYS

BUTANE, PROPANE, FLUOROCARBONS

DEODORANTS

LIGHTER FLUID

BUTANE, ISOPROPANE

FUEL GAS

BUTANE

DRY CLEANING FLUID

TETRACHLOROETHYLENE,
TRICHLOROETHANE

SPOT REMOVERS

CORRECTION FLUID

DEGREASERS

POLISH REMOVER

ACETONE

PAINT REMOVER/THINNERS

TOLUENE, METHYLENE CHLORIDE,
METHANOL

LOCAL ANESTHETIC

ETHYL CHLORIDE

ANALGESIC/ASTHMA SPRAYS

FLUOROCARBONS

GASOLINE

GASOLINE

OTHER ANESTHETICS:

CHLOROFORM

CHLOROFORM

ETHER

ETHER

VOLATILE NITRITES:

ROOM ODORIZERS

(ISO)AMYL NITRITE,

"LOCKER ROOM"

(ISO)BUTYL NITRITE,

"RUSH", "QUICKSILVER",

(ISO)PROPYL NITRITE

"BOLT", "POPPERS"

NITROUS OXIDE

NITROUS, NITROUS OXIDE
WHIPPED CREAM, PROPELLANT,
WHIPPETS, LAUGHING GAS,

Nitrous Oxide (N₂O)

Nitrous oxide was first discovered and prepared in 1793. For the first 40 years or so, nitrous oxide's primary use was for one of recreational enjoyment (nitrous oxide capers) and public show, leading to the first reference of it as "laughing gas".

Nitrous oxide is a colorless, almost odorless gas. When placed inside a tank it is a compressed gas. Being a compressed gas, when expelled from the tank it is extremely cold.

Tanks for Nitrous Oxide can vary in size from less than one foot tall to four feet tall.

People who abuse nitrous oxide will use / possess tanks of any color or size, sometimes using oxygen tanks, acetylene tanks, etc. People who use nitrous oxide legitimately will use / possess the proper tank.

Dentistry & Surgery

Nitrous oxide is a very safe and popular agent utilized by many dental practices. Nitrous oxide has both sedative and analgesic properties that can be utilized for procedures which tend to be more pain inducing or where local anesthetic effectiveness is diminished. Examples include oral surgery, periodontal surgery, procedures in areas of infection, or procedures where access to the pulp is necessary. In the pediatric population, nitrous oxide can be used to help aid behavior management in those children where more conventional measures have proven unsuccessful.

People who abuse nitrous oxide will sometimes obtain their tanks by theft from hospitals or dental offices. The tanks are used to fill balloons with nitrous oxide at parties, the balloons being sold from \$2 to \$5 per balloon.

Auto Racing

Nitrous oxide is also used in auto racing. It is injected into the carburetor of an engine, providing more oxygen for more fuel ignition and extra horsepower, while acting as a cooling agent at the same time. The tank that fits into the vehicle is relatively small, but larger tanks are used for nitrous oxide storage, and sales to refill the smaller tanks.

People who abuse nitrous oxide who possess tanks will get the tanks refilled at racing shops selling nitrous oxide. Many legitimate racing shops will have nitrous oxide. Racing shops purchase the nitrous oxide direct from a manufacturer. Some manufacturers add sulphur dioxide to the tank to discourage inhalation and abuse. Some manufacturers do not add the sulphur dioxide. Some racing shop's employees will fill tanks for friends. Again, the tanks are used to fill balloons with nitrous oxide at parties, the balloons being sold from \$2 to \$5 per balloon.

Whipped Cream Propellant

Nitrous oxide, being a compressed gas, is used as a safe propellant in several food products. The most common of these products is Readi-Whip whipped cream. If used properly, the buyer depresses the button on top of the can and the whipped cream is propelled out of the can by the nitrous oxide.

Whipped cream can also be purchased in bulk, with the nitrous oxide propellant purchased separately. Coffee shops and caterers will use the nitrous oxide to propel the whipped cream out of the containers and onto food products. The nitrous oxide used for this purpose is very commonly sold in small boxes of 10 (about \$15) or 25 (about \$25) metal canisters resembling CO₂ cartridges at food specialty stores. The canisters bare no markings indicating the contents. The box containing the canisters is usually marked "Whipped Cream Refillers" and may or may not indicate the contents as N₂O.

People who abuse nitrous oxide will purchase these canisters from the food specialty stores, or from pornography retail shops or “Head” shops, who also stock them. The latter two suppliers also sell plastic, brass, or metal two piece containers into which a single canister is placed. The container will have a hole punched in one end, with a spike protruding into the container to pierce the nitrous oxide cartridge. The user will place a balloon over the hole on the end of the device, screw the two parts of the device together, piercing the canister inside and filling the balloon with nitrous oxide. One cartridge will fill one 12” balloon. The user will then inhale the nitrous oxide from the balloon. One balloon has many doses.



Glass Chillers

Because nitrous oxide is a compressed gas and exits its container at a very cold temperature, the “Whipped Cream Refillers” are also used by people in the wine/champagne selling business to chill glasses rather than refrigerate the glass, then serve the wine or champagne in the chilled glass.

Because of its low cost and easy availability, nitrous oxide is popular with teenagers and young adults. The balloon containing the nitrous oxide is the most common item possessed by a user, although they may also possess the “Whipped Cream Refillers” and paraphernalia mentioned above. After an outdoor or underground Rave

party it is not uncommon to discover hundreds of the “Whipped Cream Refillers” boxes and canisters left behind on the ground.

The nitrous oxide is inhaled from the balloon. Depending on the size of the balloon (they will vary), a single balloon may contain between one and 20 doses.

Remembering that nitrous oxide is an anesthetic, the effects caused by its ingestion are those typical of anesthetics. Nitrous oxide, when abused, causes euphoria and dizziness, and a general state of CNS depression. Horizontal Gaze Nystagmus will be present, Vertical Nystagmus may be present, non-convergence will be present. Muscles will be relaxed. Lowered blood pressure, arrhythmias, and elevated pulse are common. Generally the person acts extremely anesthetized, sometimes becoming unconscious.

Onset of the effects are immediate, and generally last approximately 5 minutes, depending on the dose. After the drug wears off, the user inhales another lung full from the balloon with the nitrous oxide, for another 5 minutes of influence.

Chronic, long term abuse can lead to bone marrow depression. A resultant anemia-like state may develop causing peripheral numbness, tingling sensations, and uncoordination. In extreme cases, death can ensue.

Nitrous oxide diffuses into air-containing spaces 34 times faster than nitrogen can diffuse out, and can lead to potentially dangerous airspace expansion (pneumothorax, bowel obstruction, etc).

A Word of Caution

Nitrous oxide is an oxidizer, meaning it displaces oxygen. A number of deaths from inhaling nitrous oxide have occurred when users have rolled up the windows in their car and left the nitrous oxide tank on. All of the oxygen is displaced by the nitrous oxide, and the user dies from a lack of oxygen.



"HUFFING" KIT



NITROUS FILLED BALLOON



HUFFING AXE PROPELLANT



NITROUS OXIDE HUFFING KIT



**"CRACKER"
FOR NITROUS OXIDE**



NITROUS OXIDE



AMYL NITRATE
"POPPERS"



NITROUS OXIDE



NITROUS OXIDE



KIT FOR KITROUS OXIDE



NITROUS OXIDE



HUFFING MATERIALS