Do You Know...

Inhalants

Street names: glue, gas, sniff (solvents); whippets (nitrous oxide); poppers, snappers, room odourizers, aromas—some sold under "brand" names such as Rush, Bolt, Jungle Juice (nitrites)

What is it?

The term "inhalants" refers to chemical vapours or gases that produce a "high" when they are breathed in. Most of the substances used as inhalants, such as glue, gasoline, cleaning solvents and aerosols, have legitimate everyday uses, but they were never meant for human consumption. Inhalants are cheap, legal and easy to get. They have a high potential for abuse—especially by children and young adults.

There are hundreds of different kinds of inhalants, roughly dividing into four different types:

- Volatile solvents: These are the most commonly abused type of inhalants. "Volatile" means they evaporate when exposed to air, and "solvent" means they dissolve many other substances.

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Examples of solvents used as inhalants include benzene, toluene, xylene, acetone, naptha and hexane. Products such as gasoline,cleaning fluids, paint thinners, hobby glue, correction fluid and felt-tip markers contain a mixture of different types of solvents.

- Aerosol or spray cans: Hair spray, spray paint, cooking spray and other aerosol products contain pressurized liquids or gases such as fluorocarbon and butane. Some aerosol products also contain solvents.
- Gases: This includes some medical anesthetics, such as nitrous oxide ("laughing gas"), chloroform, halothane and ether, as well as gases found in commercially available products, such as butane lighters and propane tanks.
- Nitrites: Amyl nitrite, butyl nitrite and cyclohexyl nitrite (also known as "poppers") are different from other inhalants in effect and availability.

Where do inhalants come from?

Many inhalants are widely available as commercial products. It is hard to prevent their use because these products are found in many homes and workplaces. Some manufacturers taint their products to try to make them less appealing to use as inhalants, but this has not prevented use. Stores may refuse to sell certain products to minors or people who are intoxicated, but there are no laws that enforce this in Ontario.

What do inhalants look like, and how are they used?

Solvent and aerosol products—on the store shelf, in the kitchen cupboard or in the workshop—would not be noticed by most people as dangerous drugs.

When solvents are used as drugs, they are either inhaled directly from the container ("sniffed"), from a soaked rag held to the face ("huffed") or from a bag ("bagged"). Sometimes people spray aerosols into a bag or balloon and then inhale the gas.

Nitrous oxide or other anesthetic gases intended for medical use are contained in a gas tank; nitrous oxide is also found in whipped cream dispensers. Because nitrous oxide is pressurized and can be very cold, it is often inhaled from a balloon.

Nitrites are clear yellow liquids that are inhaled directly from the bottle or from a cloth.

Who uses inhalants?

Most of the people who use solvents and aerosols are young—between 10 and 16 years old. Many try inhalants only once or twice, or use them only on occasion. But some people use heavily and may continue using into adulthood. Chronic solvent users are usually in their 20s. Solvent use is associated with poverty, difficulty at school, lack of opportunity, problems at home and a high incidence of substance use in the family. A 2011 survey of Ontario students in grades 7 to 12 reported that 5.6 per cent had sniffed glue or solvents at least once in the past year. This same study showed the highest rate of use, 12.2 per cent, by students in grade 7. A 2004 survey of Canadians (age 15+) reported that 1.3 per cent had used inhalants at least once in their lifetime.

Nitrous oxide is a drug of abuse available to many health care workers.

Nitrite use is most common among gay men.

How do inhalants make you feel?

How inhalants, or any drugs, affect you depends on a number of factors:

- your age
- how sensitive you are to the drug
- how much you use
- how long and how often you've been using it
- the method you use to take the drug
- the environment you're in
- whether or not you have certain pre-existing medical or psychiatric conditions
- if you've taken any alcohol or other drugs (illicit, prescription, over-the-counter or herbal).

All inhalants are absorbed through the lungs and travel

quickly in the blood to the brain. This produces an immediate and brief intoxication. Different types of inhalants produce different effects.

Inhaled solvents usually produce an alcohol-like effect, but with more distortion of perception, such as the shape, size and colour of objects, and distortion of time and space. New users may be initially excited, then become drowsy and fall asleep. People who use solvents more often may feel euphoric, exhilarated and have vivid fantasies. Some feel giddy, outgoing and confident. Physical effects may include dizziness, nausea, vomiting, blurred vision, sneezing and coughing, staggering, slow reflexes and sensitivity to light.

Nitrous oxide produces a dreamy mental state, loss of motor control, hallucinations and an increased threshold for pain.

Nitrites dilate blood vessels and relax muscles. The heartbeat quickens and blood rushes to the head, creating a "rush." Nitrites also cause headaches, dizziness, nausea and flushing. Some men use nitrites during sex for the drugs' capacity to relax muscles and promote blood flow.

How long does the feeling last?

Several breaths of solvents will produce a high within a few minutes of use. This high may last up to 45 minutes, if no more breaths are taken. Some people continue to take additional breaths to sustain the effects for several hours. As the effects wear off, the person may feel drowsy and have a hangover with a mild-to-severe headache for up to several days.

The effects of nitrous oxide and nitrites are immediate, and wear off within a few minutes.

Are inhalants dangerous?

Yes. Inhalant use is dangerous in many ways. Most inhalants are highly flammable; recklessness with lit cigarettes and flames while using inhalants has caused tragic accidents. The different types of inhalants carry other specific dangers:

SOLVENTS AND AEROSOLS

- Suffocation: Solvents are often sniffed from a plastic bag, which is held firmly around the nose and mouth. People who use solvents sometimes pass out with the bag still in place, and suffocate due to lack of oxygen. Choking on vomit when unconscious is also a cause of inhalant-related death.
- Recklessness: Sniffing reduces inhibition and affects the way people feel about themselves and the world around them. It makes some people feel powerful, which has led to dangerous and destructive behaviour that caused serious harm. Others don't get "high" when they sniff; they get depressed. Self-destructive or suicidal behaviour are common among people who use solvents.
- Sudden sniffing death (SSD): Prolonged sniffing of highly concentrated inhalants can cause a rapid and irregular heartbeat, leading to death from heart failure. SSD can occur after only one sniffing session, and when stress or strenuous exercise follows several deep inhalations.
- Serious health problems: People who use solvents regularly for a long time can damage their liver, kidneys, lungs, heart, brain, bones and blood. Sometimes this damage heals when drug use is stopped; sometimes it is permanent.
- Fetal solvent syndrome: Use of solvents during pregnancy, especially chronic use, can result in premature birth, birth defects or stillbirth.

NITROUS OXIDE

- Lack of oxygen: Sniffing pure nitrous oxide starves the body of oxygen. Some people have died this way.
- Loss of motor control: People who use nitrous oxide while standing can fall and hurt themselves.

- Frostbite: The gas is extremely cold as it is released from the cylinder and can freeze skin. In addition, pressure in the tank can damage the lungs.
- Nerve damage: High levels of nitrous oxide use, even with adequate oxygen, has been shown to damage nerves. This can cause numbness, weakness and loss of balance.

NITRITES

- Unsafe sexual practices: An increased risk of contracting HIV and hepatitis is associated with nitrite use.
- Weakened immune system: Recent animal research shows that nitrites may impair the immune system that protects against infectious diseases.

Are inhalants addictive?

They can be.

Most inhalant use is experimental and occasional. However, people who use inhalants regularly can develop tolerance. This means that more and more of the substance is needed to produce the same effects. Regular use also leads to a persistent craving for the high, which makes it hard to stop using. When regular use is stopped, withdrawal symptoms may include nausea, loss of appetite, tremors, anxiety, depression and paranoia.

What are the long-term effects of using inhalants?

People who use inhalants over a long time may have bloodshot eyes, sores on the nose and mouth, nosebleeds, pale skin, excessive thirst and weight loss. They may also have trouble concentrating, remembering and thinking clearly. Other possible effects include tiredness, depression, irritability, hostility and paranoia. The long-term effects of inhalants vary depending on which inhalant is used. Heavy solvent use can result in numbness, weakness, tremors and a lack of co-ordination in the arms and legs.

Some long-term effects may go away when people stop using, but othersare permanent. When inhaled, solvents are carried by the blood and stored in fat tissue in the body. Internal organs that have high blood circulation and that are rich in fat tissue, such as the brain, liver and kidney, are particularly affected. If inhalant use is stopped, damage to the liver and kidneys may heal, but damage to the brain is almost always permanent. Studies using scans of people's brains after chronic long-term solvent use show that solvent use can cause the brain to atrophy, or shrink, which can severely affect thinking, memory and movement control. Long-term use of solvents such as toluene or naphthalene has also been shown to damage nerve fibres in the brain resulting in a neurological condition similar to multiple sclerosis.

Inhalant use can also result in permanent hearing loss and damage to bone marrow.

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