

Nitrous oxide and its health effects

Fact sheet for the community

Key messages



Nitrous oxide is a gas that can alter your mood and senses when inhaled. Medical forms of nitrous oxide can be used for pain relief under supervision.



Regular nitrous oxide use can affect mental health and lead to psychological dependence and tolerance.



Nitrous Oxide can cause serious short-term health effects, such as overdose or injury, and serious long-term health effects, such as brain and spinal cord damage, which may result in permanent disability.



Mixing nitrous oxide with alcohol or other drugs increases the risk of harm from these substances.



Nitrous oxide is kept under high pressure in canisters and when released, the pressure and unexpected freezing temperature of the gas can result in cold burns and injuries.



Nitrous oxide sold in the community is not made to be inhaled and can be harmful to health, especially when used frequently or in large volumes.



If nitrous oxide use is affecting your health, seek help and support from your GP. Alternatively, if you or someone you know needs help with alcohol or drug use, contact [DirectLine](http://www.directline.org.au) <www.directline.org.au> on 1800 888 236 for information and support to access treatment.

What is nitrous oxide?

Nitrous oxide is a colourless, odourless gas that has various uses, such as:

- in the food industry as an additive for whipped cream
- in the automotive industry to enhance engine performance
- in the medical setting as a pain relief medication.

Some people deliberately inhale nitrous oxide for its sense and mood-altering effects. However, its recreational use can be harmful to health.

Nitrous oxide is also known as “laughing gas”, “nangs”, “whippets”, “bulbs”, “balloons”, “nitro”, “NOS” or “N2O”.

Nitrous oxide is usually stored in a metal canister, cylinder or tank under high pressure. For recreational use, it is commonly inhaled by releasing the gas into another object such as a balloon.

Inhaling the gas directly into the mouth comes with a higher risk of injuries such as cold burns.

In Victoria, it is illegal to sell or supply nitrous oxide products to the general public for inhalational use.

What are the health effects?

Short-term effects

Nitrous oxide can make people feel “high” or euphoric, giddy, dizzy, lightheaded, unusually tired or weak and cause numbness or tingling. It can also make people feel “dissociated”, which means feeling disconnected or separated from your body or surroundings. These effects may be felt immediately and last for several minutes.

Inhaling a large amount of nitrous oxide can cause low blood pressure, fainting, heart attack, low oxygen (hypoxia) and seizures. In severe cases, this can be fatal. Mixing nitrous oxide with alcohol or other drugs increases the risk of harm from these substances.

Releasing nitrous oxide gas from cannisters can lead to serious injuries, such as:

- cold burns and frostbite to the mouth, nose, lips, throat (including vocal cords) and other body parts, which may not be immediately noticeable
- severe pressure damage to the lungs and injuries from explosions when using pressurised gas.

Long-term effects

Frequent, high volume and long-term nitrous oxide use can lead to serious health effects which may result in permanent disability. These include:

- brain and spinal cord damage
- persistent numbness or tingling in the hands or feet
- poor balance, coordination or mobility
- muscle weakness or spasms
- memory loss
- incontinence
- anaemia
- weakened immune system
- reduced fertility
- increased risk of miscarriage and birth defects in pregnancy.

Many of the harmful effects are due to nitrous oxide inactivating vitamin B12 in the body, resulting in a vitamin B12 deficiency-like syndrome. Taking vitamin B12 supplements does not prevent these effects.

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Effects on mental health and dependence

Regular use of nitrous oxide can negatively impact mental health and may lead to depression, psychosis and psychological dependence. Some people may also develop “tolerance” which means they need to use larger amounts of nitrous oxide to feel the same effects.

Who is at risk?

While all nitrous oxide use comes with risks, the following groups are at increased risk of harm from its use:

- people who inhale nitrous oxide frequently or in large volumes
- people with diets or pre-existing medical conditions that predispose them to vitamin B12 deficiency
- people who concurrently use alcohol and other drugs or have pre-existing mental health conditions.

Where to get information and support?

- In a life-threatening situation and you need emergency care immediately, call triple zero (000)
- If you experience non-life-threatening harmful effects following nitrous oxide use, contact the Victorian Poisons Information Centre on 13 11 26 for advice
- Speak to your GP if you think nitrous oxide is affecting your health
- If you or someone you know needs help with alcohol or drug use, contact [DirectLine](http://www.directline.org.au) <www.directline.org.au> on 1800 888 236 for information and support to access treatment
- Access the [Alcohol and Drug Foundation’s Drug Facts webpage](https://adf.org.au/drug-facts/) <https://adf.org.au/drug-facts/> for non-judgemental information about drugs and how to reduce your risk of harm.

For more information on nitrous oxide, see the [Alcohol and Drug Foundation webpage](https://adf.org.au/drug-facts/nitrous-oxide/) <https://adf.org.au/drug-facts/nitrous-oxide>.

For more information, scan the QR code or [visit the website](https://www.betterhealth.vic.gov.au/healthyliving/drugs/nitrous-oxide) <https://www.betterhealth.vic.gov.au/healthyliving/drugs/nitrous-oxide>.

