



NPS TECHNICAL SHEET

Nitrous Oxide

Based on Neptune guidance June 2016
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BACKGROUND:

Nitrous Oxide is a central nervous system (CNS) depressant, dissociative drug that is inhaled. It is used to inflate balloons and in cooking (for example to aerate cream) so is easily available.

Street names:

Laughing gas; hippie crack; whippets; chargers, bulbs etc

Legal status:

Nitrous Oxide (NO) is legal to sell to people over 18 when used in catering, for filling inflatables, etc. If it is sold for human consumption, it violates the Medicines Act and from May 2016 it is illegal to import or supply under the Psychoactive Substances Act (though use is not illegal).

How it works

Nitrous Oxide is not well understood. It may work mainly via the opiate system in the brain. It is rapidly absorbed via the pulmonary system, has a rapid onset, is short acting and is cleared from the body within a couple of hours.

Appearance

Nitrous Oxide is a gas that is inhaled.

Legitimate uses

Nitrous Oxide has been used as a medical anaesthetic for over 150 years and continues to be used in medical, dental and veterinary settings, including: ambulances; pain relief for pregnant women in labour; and during tooth extraction. Its short action is advantageous but it has side effects including post-operative nausea, vomiting and expansion of air-filled spaces. It has been shown to reduce cravings for alcohol and some drugs eg cannabis, nicotine and cocaine

Patterns of use

Nitrous Oxide use is typically episodic at social and music events where users may take multiple 'hits' or 'charges' over a few hours. In 2013/14 Crime Survey in England and Wales (CSEW) 2.3% of adults and 7.6% aged 16-24 (around one in 13) had

used Nitrous Oxide in the past year. Use at music festivals was reported as 'widespread' in 2014/15.

Desired effects

There is an immediate onset of euphoric effect after inhaling. Users typically experience laughing fits, relaxation, dizziness, auditory distortions and 'pleasant bodily feelings' e.g. floating and tingling. There is disagreement in published literature whether there are gender differences in effects.

Unwanted effects

Some users report accidents from falling, dizziness, nausea and headaches after use.

Harm

Risk of mortality (death)

A number of cases of death by asphyxiation have been associated with Nitrous Oxide. Deaths are typically due to people putting plastic bags over their heads to inhale the drug. Nitrous Oxide blunts the normal response to hypoxia (oxygen deficiency) by up to half.

Acute harm

One off or very irregular use of Nitrous Oxide has few negative short-term effects, except headaches and harms due to falling caused by dizziness can

result in accidental injury. Repeated dosing or acute exposure can irritate the respiratory tract resulting in coughing, excess salivation, and red irritated eyes. Nitrous Oxide replaces oxygen from the lungs and can cause irregular heartbeat. Nitrous Oxide use can also cause: nausea; fainting; and loss of control of movement (ataxia). Heavy use can cause depletion of vitamin B12 that can result in anemia (iron deficiency) and neuropathy (damage to nerves) and psychiatric symptoms.

Chronic harm

There are no reported cases of dependence on Nitrous Oxide.

Treatment & Management

Management of acute harm

No pharmacological support is recommended to treat Nitrous Oxide use. Vitamin B deficiency may require treatment. Psycho-education, screening and brief interventions may be provided for regular users of Nitrous Oxide to help them reduce risk of harm.

Staying Safe

Harm reduction messages for Nitrous Oxide users

- Always use a balloon to inhale. Inhaling directly from a dispenser, tube, or mask can be dangerous. Never inhale from a bag over the head.
- Be careful not to confuse Nitrous Oxide with another gas or volatile substance which can have greater risks.
- Do not inhale whilst standing up or where you could fall down and injure yourself (e.g. near a steep drop).
- If you have low blood pressure or mental health problems, Nitrous Oxide can make you ill.
- If you experience discomfort or negative effects or 'pins and needles' stop inhaling Nitrous Oxide.
- Regular use of Nitrous Oxide can cause Vitamin B12 deficiency, iron deficiency and nerve damage.