Nitrous oxide - an emerging recreational drug of abuse in New South Wales.

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Case study

- 20F Chinese student presents with inability to walk after abusing more than 360 bulbs nitrous oxide per week for 1 year or so.

Introduction

- Nitrous oxide, known as “Nangs” can cause neurological deficits if used as an abuse agent.
- A recent survey in NSW showed an increase in the reported use from 20% in 2012 to 75% in 2018.
- 24/7 delivery of large quantities, as whipping cream.
- Nitrous oxide use can bring a brief rush of euphoria, relaxation and dissociation.

Introduction

- In small amounts, nitrous oxide poses low risks to health.
- Immediate risks include injury from loss of balance and coordination, and lip or lung injury from inhaling the cold, pressurised gas directly from a canister.
- Heavy use can cause hypotension, syncope, hypoxia, and respiratory or cardiac arrest.

Introduction

- Prolonged heavy use can cause permanent neurological damage manifested as peripheral neuropathy, limb spasms, ataxia and incontinence.
- Nitrous oxide may be used concurrently with other drugs & associated with mental health issues.

Doctors warn of dangerous rise in use of 'nangs'

7.30 By the National Reporting Team's James Thomas and Ruby Jones

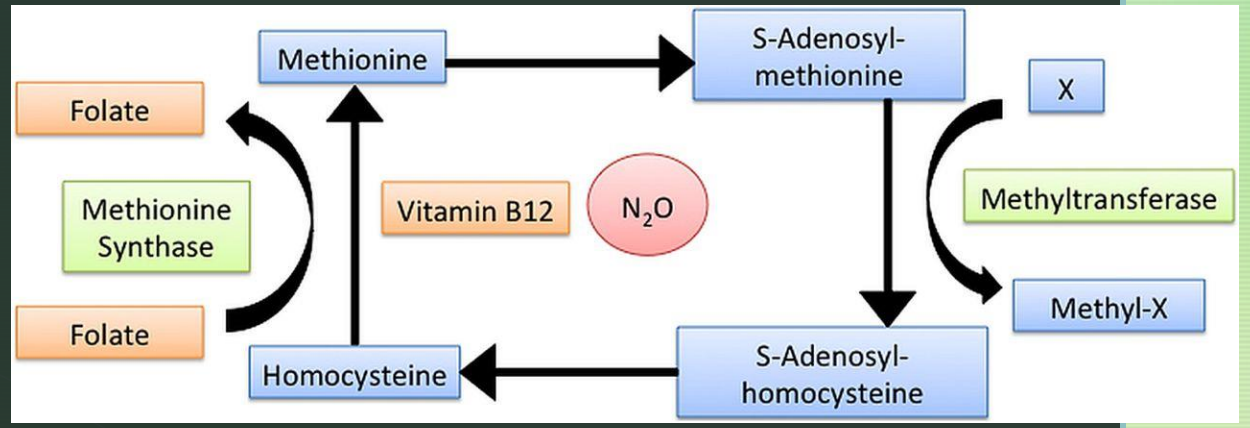
Updated 19 Oct 2017, 2:21pm

A girl in her 20s struggles to walk. She has nerve damage to her spinal cord and may never recover.

RELATED STORY: Inside Australia's underground party scene

Pathophysiology

- N_2O irreversibly oxidises cobalt in vit B12 and inhibits methylcobalamin as a coenzyme of methionine synthase, blocking the production of methionine and resulting in demyelination.
- Pigmentation due to B12 deficiency.



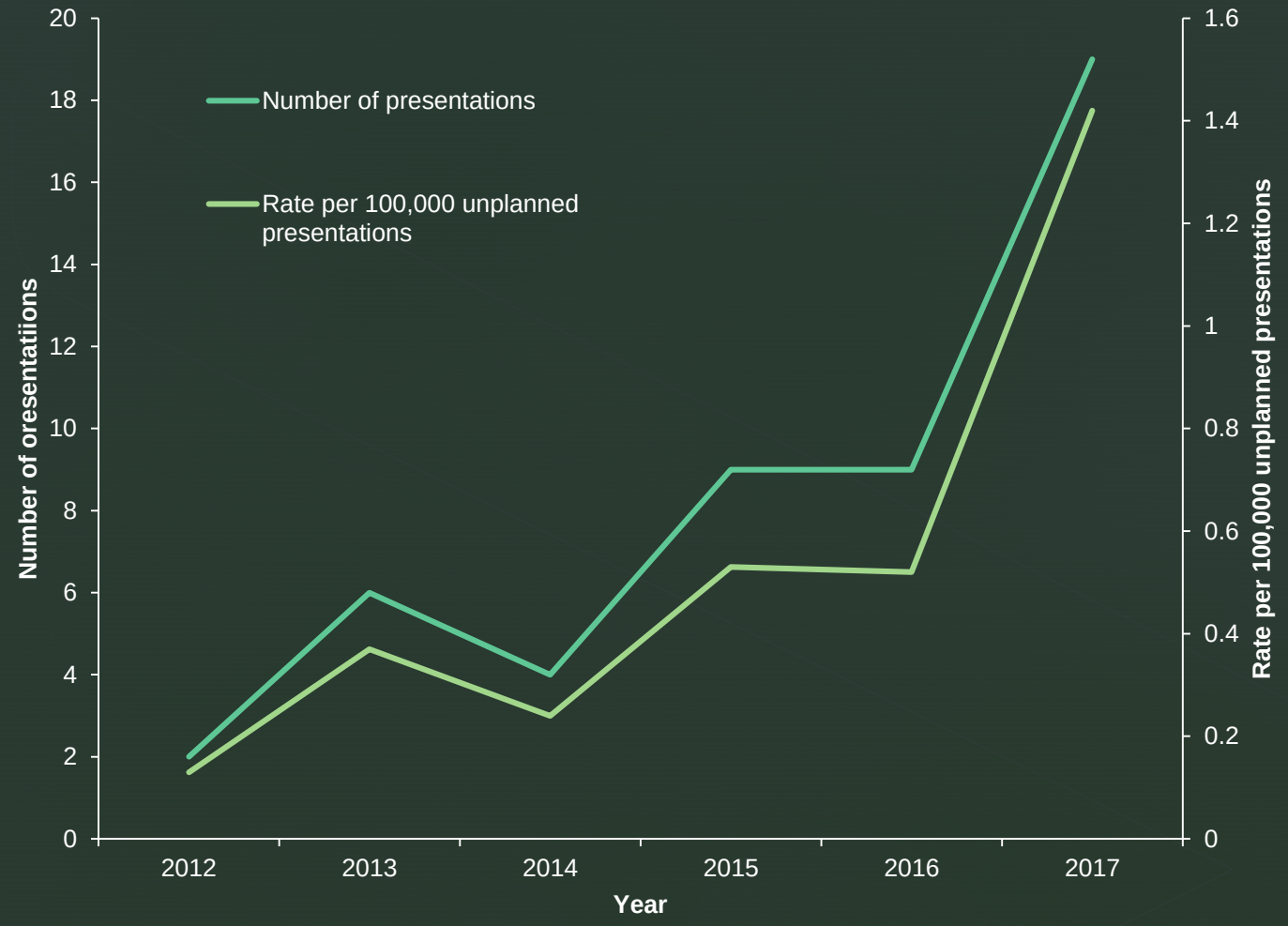
Objectives & Methods

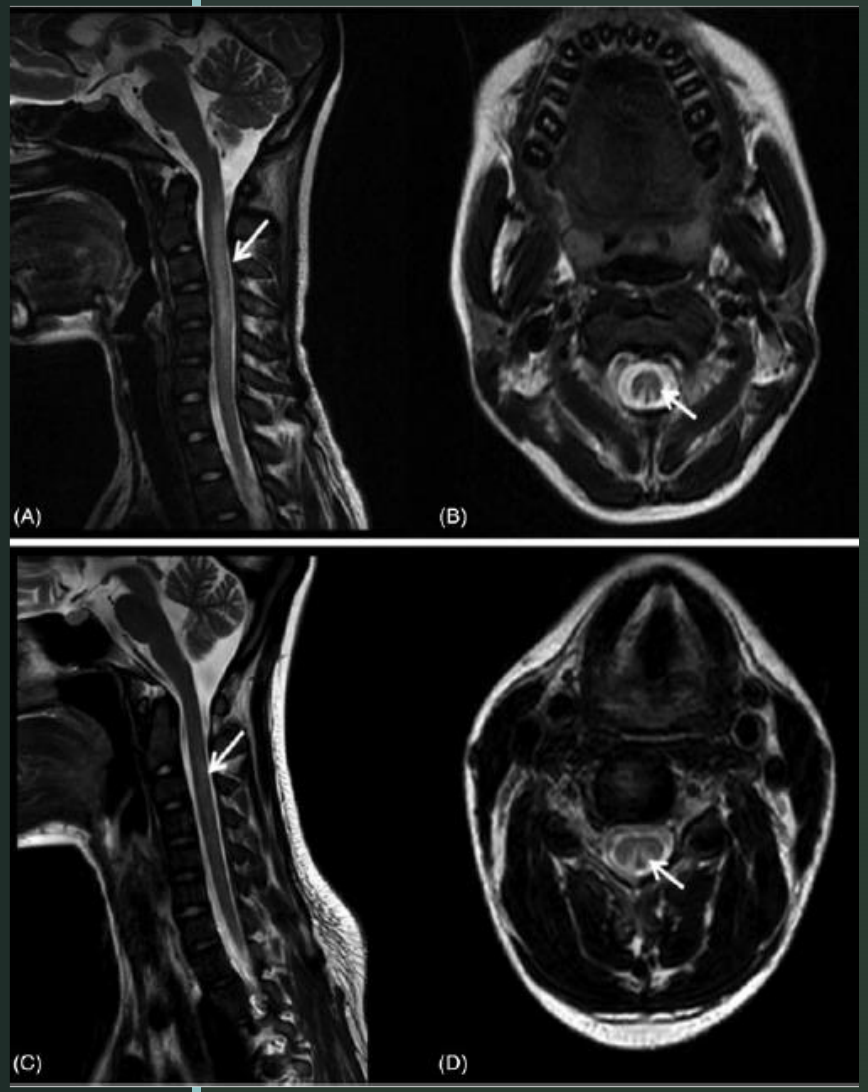
- To assess the trends in the recreational use of nitrous oxide.
- A retrospective review ≥ 16 years to 60 Emergency Department (ED) from Jan 2012 to Dec 2018 across New South Wales.
- Records were extracted from the Rapid Emergency Dept Data for Surveillance (REDDS)
- Under NSW Health Administration Act 1982.

Results

- An increase in the number of ED presentations, particularly from 2016 to 2018.
- N=118
- Median age was 23 years (range: 16-51) and 56% were males.
- 46% admitted to poly drug use and 24% indicated chronic or heavy use of nitrous oxide.

Emergency department presentations in NSW in which the patient reported intentionally inhaling nitrous oxide outside of a therapeutic setting, Jan 2012 – Sept 2017.





Diagnosis

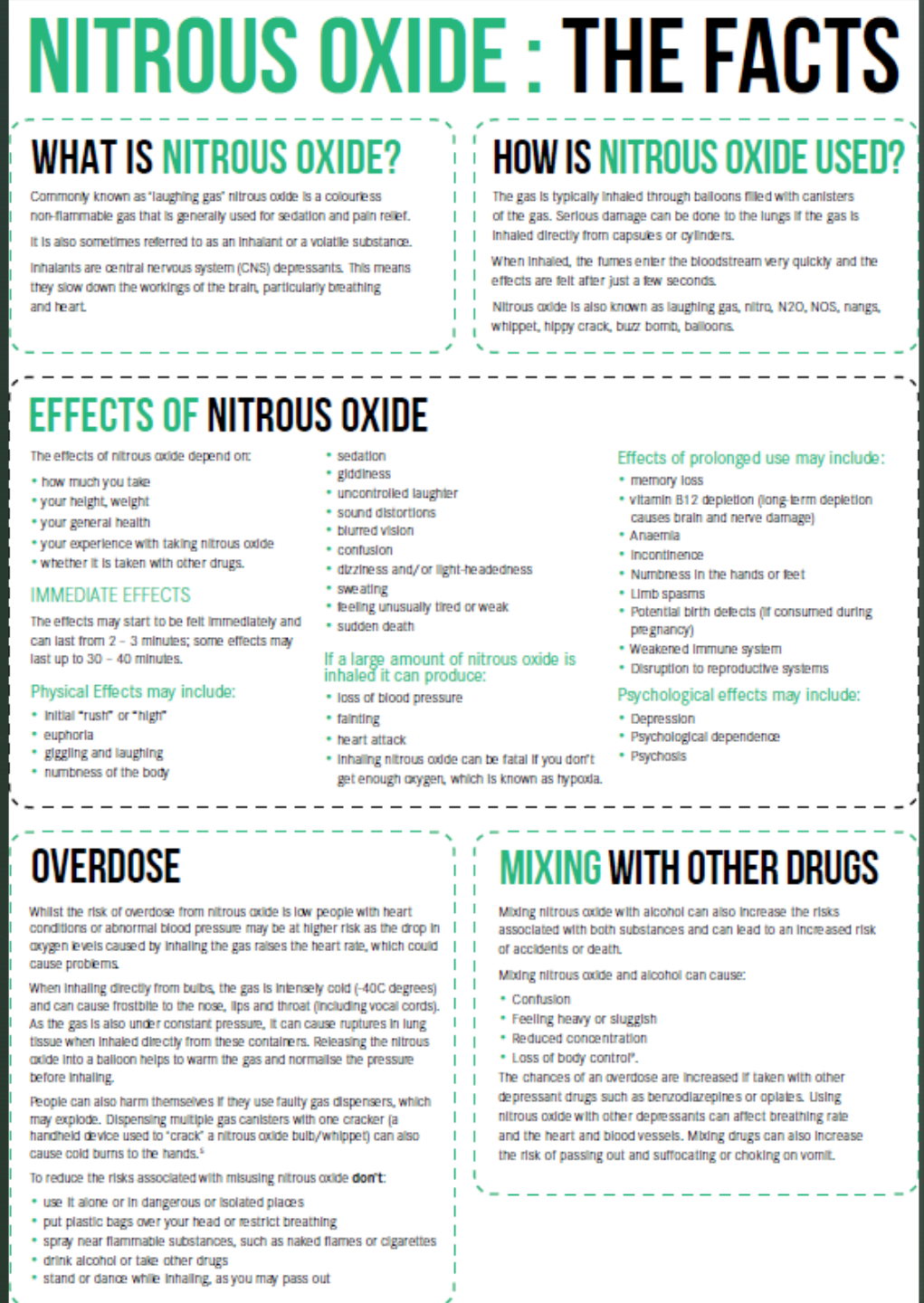
- Injury (13%),
- Neurological symptoms (12%),
- Loss of consciousness or syncope (11%),
- Self-harm or suicidal ideation (14%),
- Mental health conditions (24%).
- Respiratory arrest (2%),

NSW Health

Fact Sheet

Public health strategies.

SA – band the sale of nitrous oxide to under 18.



NITROUS OXIDE : THE FACTS

WHAT IS NITROUS OXIDE?

Commonly known as "laughing gas" nitrous oxide is a colourless non-flammable gas that is generally used for sedation and pain relief.

It is also sometimes referred to as an inhalant or a volatile substance.

Inhalants are central nervous system (CNS) depressants. This means they slow down the workings of the brain, particularly breathing and heart.

HOW IS NITROUS OXIDE USED?

The gas is typically inhaled through balloons filled with canisters of the gas. Serious damage can be done to the lungs if the gas is inhaled directly from capsules or cylinders.

When inhaled, the fumes enter the bloodstream very quickly and the effects are felt after just a few seconds.

Nitrous oxide is also known as laughing gas, nitro, N2O, NOS, nangs, whippet, hippy crack, buzz bomb, balloons.

EFFECTS OF NITROUS OXIDE

The effects of nitrous oxide depend on:

- how much you take
- your height, weight
- your general health
- your experience with taking nitrous oxide
- whether it is taken with other drugs.

IMMEDIATE EFFECTS

The effects may start to be felt immediately and can last from 2 – 3 minutes; some effects may last up to 30 – 40 minutes.

Physical Effects may include:

- initial "rush" or "high"
- euphoria
- giggling and laughing
- numbness of the body
- sedation
- giddiness
- uncontrolled laughter
- sound distortions
- blurred vision
- confusion
- dizziness and/or light-headedness
- sweating
- feeling unusually tired or weak
- sudden death

If a large amount of nitrous oxide is inhaled it can produce:

- loss of blood pressure
- fainting
- heart attack
- inhaling nitrous oxide can be fatal if you don't get enough oxygen, which is known as hypoxia.

Effects of prolonged use may include:

- memory loss
- vitamin B12 depletion (long-term depletion causes brain and nerve damage)
- Anaemia
- Incontinence
- Numbness in the hands or feet
- Limb spasms
- Potential birth defects (if consumed during pregnancy)
- Weakened immune system
- Disruption to reproductive systems

Psychological effects may include:

- Depression
- Psychological dependence
- Psychosis

OVERDOSE

Whilst the risk of overdose from nitrous oxide is low people with heart conditions or abnormal blood pressure may be at higher risk as the drop in oxygen levels caused by inhaling the gas raises the heart rate, which could cause problems.

When inhaling directly from bulbs, the gas is intensely cold (-40C degrees) and can cause frostbite to the nose, lips and throat (including vocal cords). As the gas is also under constant pressure, it can cause ruptures in lung tissue when inhaled directly from these containers. Releasing the nitrous oxide into a balloon helps to warm the gas and normalise the pressure before inhaling.

People can also harm themselves if they use faulty gas dispensers, which may explode. Dispensing multiple gas canisters with one cracker (a handheld device used to "crack" a nitrous oxide bulb/whippet) can also cause cold burns to the hands.[5]

To reduce the risks associated with misusing nitrous oxide **don't**:

- use it alone or in dangerous or isolated places
- put plastic bags over your head or restrict breathing
- spray near flammable substances, such as naked flames or cigarettes
- drink alcohol or take other drugs
- stand or dance while inhaling, as you may pass out

MIXING WITH OTHER DRUGS

Mixing nitrous oxide with alcohol can also increase the risks associated with both substances and can lead to an increased risk of accidents or death.

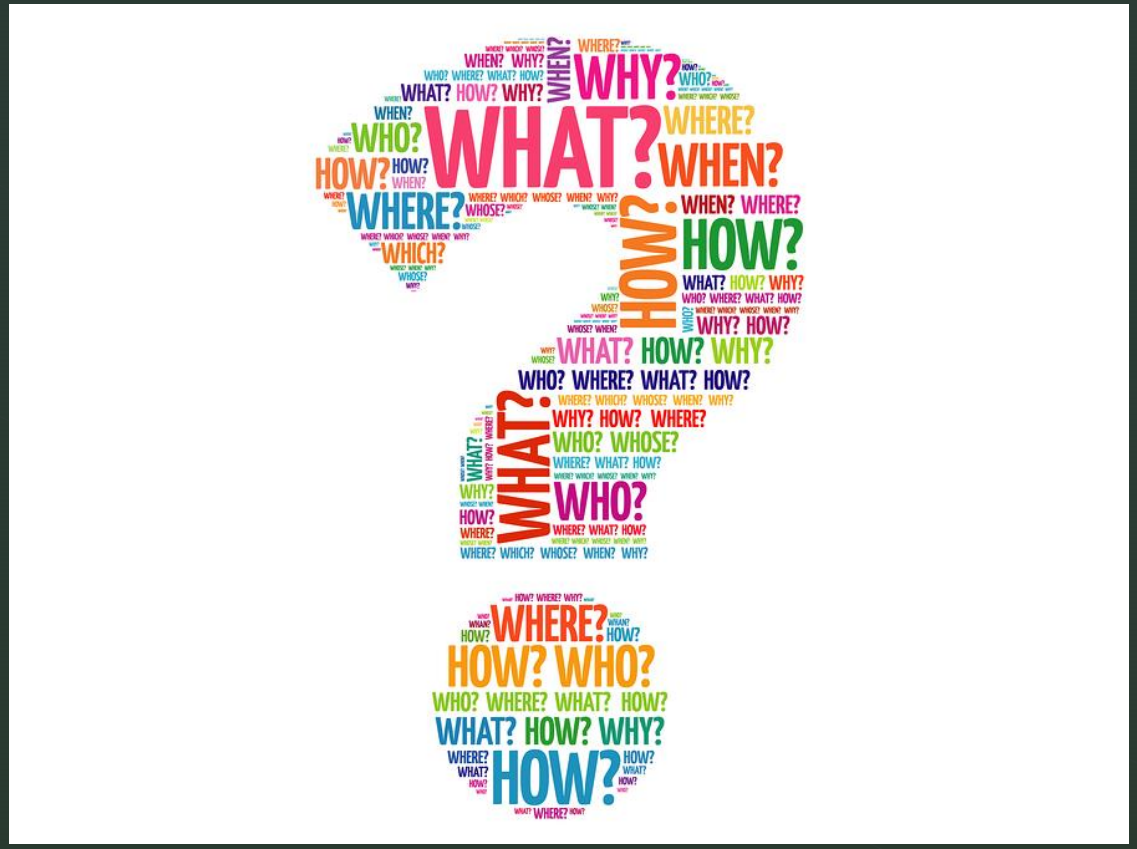
Mixing nitrous oxide and alcohol can cause:

- Confusion
- Feeling heavy or sluggish
- Reduced concentration
- Loss of body control[6].

The chances of an overdose are increased if taken with other depressant drugs such as benzodiazepines or opiates. Using nitrous oxide with other depressants can affect breathing rate and the heart and blood vessels. Mixing drugs can also increase the risk of passing out and suffocating or choking on vomit.

Conclusion

- There is an emergent rise in the recreational use of nitrous oxide in New South Wales with potentially severe health outcomes.
- Physicians need to be aware this is common amongst young patients, particularly with neurological symptoms.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