

# Nitrous oxide in the Emergency Department

## What is nitrous oxide?

Nitrous oxide (sometimes called 'laughing gas') is a very safe medicine that may be given to children in the Emergency Department to help with painful or potentially distressing procedures.

## How is nitrous oxide given?

Nitrous oxide is given to a child through a mask that is attached to a gas cylinder.

Older children may be able to hold the mask on their own face. The gas is only delivered when the child takes a breath. Your child will hear the gas hissing as it is breathed in.

A different system is used for children who are not able to hold the mask on their face. A doctor or nurse will hold the mask on your child's face and the gas will be delivered continuously from a machine. Any extra gas that your child doesn't breathe in is automatically sucked back into another part of the machine.

At the end of the procedure the child is given some oxygen through a different mask for a few minutes to help 'flush' the nitrous oxide out of the lungs.

You will usually be able to stay close to your child while they breathe the nitrous oxide – ask your doctor or nurse about this before the procedure starts.

## What effect will it have on my child?

The gas is a strong pain medication (gives pain relief at a similar level to morphine). Children will still be awake but they will not feel the pain of the procedure.

While breathing in the gas your child may:

- become drowsy
- slur their speech
- describe feeling warm and tingly or like they are floating

Most children find the sensation pleasant, but occasionally children may feel confused or upset.

## Side effects

Most children do not experience any side effects. Temporary side effects that may occur in 5–10 per cent of children include:

- nausea
- vomiting
- dizziness
- euphoria ('on a high')
- paraesthesia ('pins and needles').

More serious side effects are much rarer (around 1 in 300 children). These include airway obstruction, slowed breathing, slowed heart rate, decreased oxygen level in the blood and extreme drowsiness.

Research studies on large numbers of children have shown that these side effects all go away within minutes of stopping the nitrous oxide and children do not experience any complications.

## How long does it take to work?

The gas usually works within a few minutes.

## Things to remember

- Nitrous oxide is a very safe and effective way to help with anxiety and pain caused by short procedures in the Emergency Department.
- Nitrous oxide takes a few minutes to work and wears off again within minutes of stopping the gas.
- Side effects go away quickly as soon as the gas is stopped.

FS350 developed by Emergency Department, Queensland Children's Hospital. Updated: August 2019. All information contained in this sheet has been supplied by qualified professionals as a guideline for care only. Seek medical advice, as appropriate, for concerns regarding your child's health.

