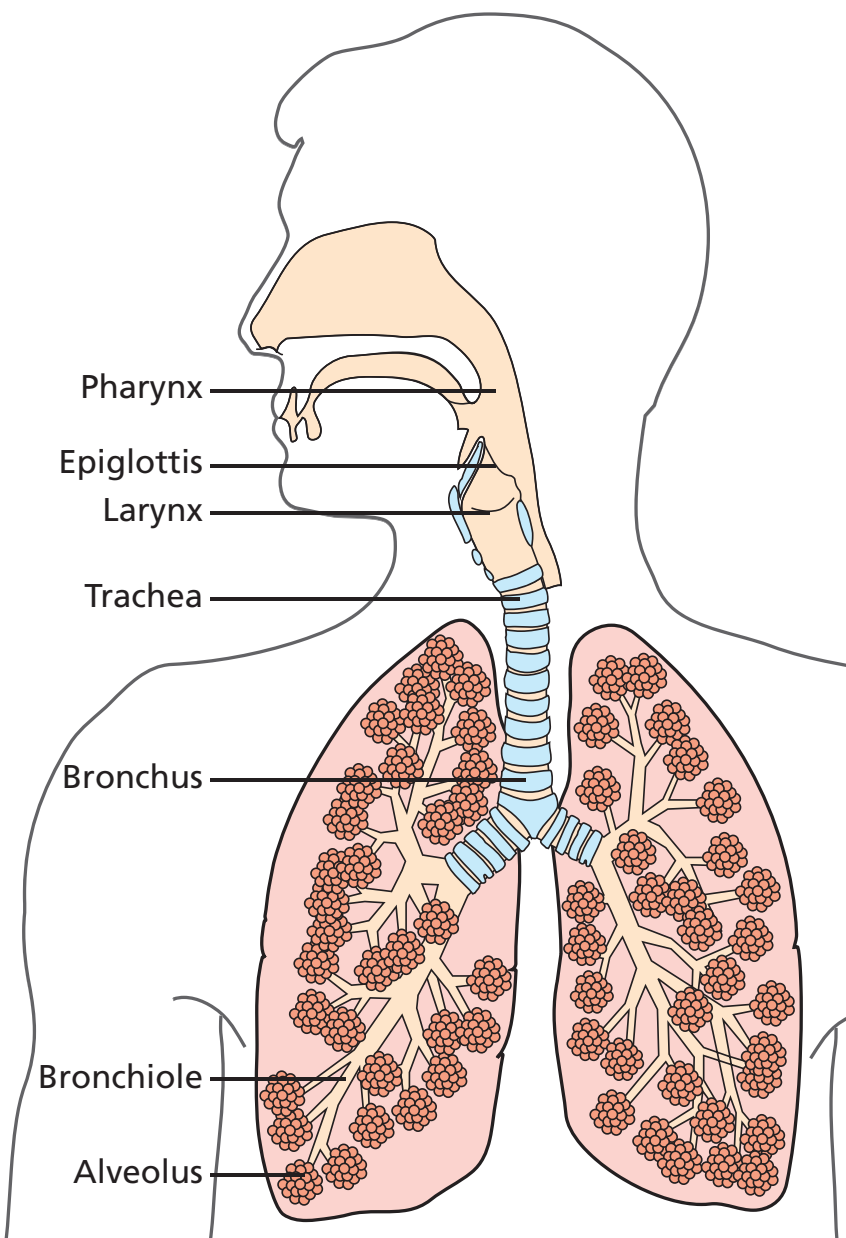




# Nasopharyngeal airways for craniofacial conditions

**This information sheet from Great Ormond Street Hospital (GOSH) explains about nasopharyngeal airways, why they might be needed for children with craniofacial conditions and how to look after them at home.**



## What is a nasopharyngeal airway?

A nasopharyngeal airway is a small, plastic tube that keeps your child's nostrils open, allowing them to breathe more easily. The tube is cut to the required length, passed through the nostril into the upper part of the airway and secured with tape to the cheek. Children can have a nasopharyngeal airway in one nostril. Without the nasopharyngeal airway, your child would find it difficult to breathe comfortably and could even stop breathing when lying on their back.

Children with craniofacial conditions may need a nasopharyngeal airway. The middle area of their face – nose, upper and lower jaw and forehead – may be underdeveloped and their nasal passages may be narrower than usual. This can cause noisy breathing that takes more effort.

A nasopharyngeal airway may also be needed for a while after surgery to correct a craniofacial condition. Any surgery causes a degree of swelling and this is common in surgery to correct the midfacial region.

A nasopharyngeal airway also acts as a barrier between the nose and the base of the skull so reduces the risk of infection travelling from the nose to the dura (covering of the brain). When a nasopharyngeal airway is used for this purpose, it tends to be stitched in place for about a week while the area heals.



Children with craniofacial conditions may also have obstructive sleep apnoea as part of their medical condition. When we are asleep, the muscles in the body naturally relax and become floppy. In some people this can cause the upper airway to fall in on itself, making breathing difficult. This can lead to bigger and bigger efforts to breathe, which can narrow the airway further. At this stage, the body senses the airway problem and the person wakes up briefly. This returns the airway to normal again, allowing them to breathe, and the person goes back to sleep. This process of periods of struggling to breathe, followed by waking briefly, may happen many times during the night. Generally the person recalls very few, if any, of these events in the morning.

If a child with a craniofacial condition is suspected of having obstructive sleep apnoea, this will be confirmed with an overnight sleep study. Further information about sleep studies is available in a separate information sheet. They will also have a review by the Ear, Nose and Throat (ENT) team who will decide the best option for treating the sleep apnoea. This can include surgery to remove a child's tonsils and adenoids, insertion of a nasopharyngeal airway as described in this information sheet, or non-invasive ventilation such as continuous positive airway pressure (CPAP).

## **How is a nasopharyngeal airway inserted?**

Initially, children with a craniofacial condition may have the nasopharyngeal airway inserted under a general anaesthetic in the operating theatre by the ENT team. This is often the safest method of insertion as their craniofacial condition may mean that their nasal passages are narrower or a different shape than usual. They may need to have a surgical procedure to stretch (dilatation) or widen their nasal passages before insertion. The nasopharyngeal airway may be inserted at the end of another procedure – for instance, corrective surgery to the midfacial area – or as a separate procedure at another stage.

Long term nasopharyngeal airways are usually changed every four to six weeks or earlier if needed. The ENT team oversee the care of children with a long term nasopharyngeal airway and initially they will carry out changes while your child is under general anaesthetic. In time, these changes may happen on the ward or even at home – we will teach you how to change the nasopharyngeal airway safely and check that you are comfortable to do this.

## **Are there any risks with nasopharyngeal airway insertion?**

Nasopharyngeal airways are one of the safest ways of helping your child breathe. They need looking after carefully to keep them clear and reduce the risk of any infection. Regular suctioning will get rid of secretions (mucus).

There is a chance that the airway and tape could make your child's nose sore. There are ways to keep your child's skin comfortable – we will talk to you about this if soreness occurs.



## Looking after the nasopharyngeal airway

The nasopharyngeal airway needs to be kept clean and unblocked so that your child can breathe easily. The nurses will teach you how to recognise when your child needs suction and how to do it. As a general rule, you should suction before each feed, when you see mucus coming out of your child's nostrils and when your child is finding it difficult to breathe. Your child may need additional suctioning when they have a cold but every child varies in the amount of suctioning needed. In our experience, parents learn to recognise when their child needs suction. You can use a listening device such as a baby monitor to listen to your child's breathing overnight, but generally they can sleep safely in their own room.

## Suctioning

1. Collect all the equipment needed:
  - Suction pump
  - Suction catheters
  - 1ml syringe of saline
2. Wash your hands with soap and water
3. Turn on the suction pump and check the pressure as you have been taught
4. Gently insert the suction catheter into the nasopharyngeal airway
5. Continue to feed the catheter into the airway as you have been taught
6. Apply suction for 5 to 10 seconds by covering the side port with your thumb, slowly pulling out the suction catheter.
7. If the airway is not cleared, put 0.5ml saline into the airway and repeat suction
8. Replace suction catheter after it has been inserted twice and dispose of the used catheter as you have been taught.

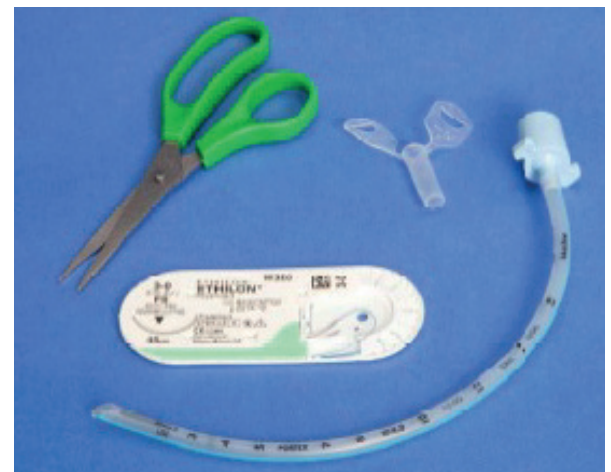
## Making a new nasopharyngeal airway

It is important that the right size nasopharyngeal airway is used – if it is too long it could cause gagging or choking by touching the epiglottis, if it is too short it may not hold the soft palate and back of the throat open enough to improve breathing.

At GOSH, we use endotracheal (ET) tubes to make nasopharyngeal airways but they need to be cut to size before insertion. The size of airway used depends on your child's age and their face shape.

- Birth to two months old – approximately 2.5 mm to 3.0mm size
- Three months old or older – approximately 3.0mm to 4.5mm size

The length of airway needed will increase as your child grows – this is reviewed by watching your child's breathing and the results of any sleep studies in conjunction with the ENT team. We will make sure that you understand which size airway is needed for your child before you go home.



1. Collect all the equipment needed:
  - ET tube of the correct size
  - ET holder 0.5mm smaller than the ET tube size
  - Non-absorbable sutures
  - Needle
  - Scissors



2. Cut the ET holder
3. Cut the ET tube to measured length
4. Fit cut end of ET tube into ET holder



5. Sew the ET tube and holder together, using stitches all the way around it to hold it securely



## Changing the nasopharyngeal airway

1. Collect all the equipment needed:
  - Nasopharyngeal airway, cut to right size as above
  - Lubricating jelly
  - Tape
  - Cushioned dressing (optional)
  - Suction catheters
  - Suction machine
2. Wash your hands with soap and water
3. Wrap your child tightly in a blanket to avoid struggling
4. Loosen the tape and remove the old airway from the nostril
5. Suction each nostril as required
6. Apply a little lubricating jelly to the outside surface of the airway
7. Pass the new nasopharyngeal airway into the nostril
8. Tape airway holder to cheek or cushioned dressing if appropriate

## Emergency kit

When you go home, keep an emergency kit with you at all times. The emergency kit should contain:

- A spare airway (cut to size)
- Round ended scissors
- Tape
- Lubricating jelly
- Suction unit and suction catheters

We will teach you basic life support (BLS) before you go home, just in case your child stops breathing. Looking after the nasopharyngeal airway will seem daunting to begin with, but it will get easier in time and with practice. There is always someone on the end of a telephone at GOSH to help you.



## Troubleshooting

- If you see any signs of infection (redness, swelling or oozing) when you clean around your child's nose and the airway
  - Call your family doctor (GP) or the team at GOSH as your child may need antibiotics
- If you see any signs of skin soreness (redness or irritation) when you clean around your child's nose and the airway
  - Contact the team at GOSH for advice about skin barrier products and soothing creams
- The airway is still blocked after cleaning
  - Change the airway if you are trained to do so
  - Seek medical advice from the team at GOSH or your community team
- The suction unit is not working
  - Use the alternative suction pump you have been lent and contact your local service to arrange repair
- The airway does not seem to be making your child's breathing easier
  - Seek medical advice from the team at GOSH or your community team

**If you have any questions, please telephone the Craniofacial Clinical Nurse Specialists on 07768 526 449 (Monday to Thursday from 9am to 5pm).**

**Out of hours, call Koala Ward on 020 7829 8826.**

**You can also seek medical advice out of hours by telephoning the GOSH switchboard on 020 7405 9200 and asking them to page the ENT doctor on call.**