

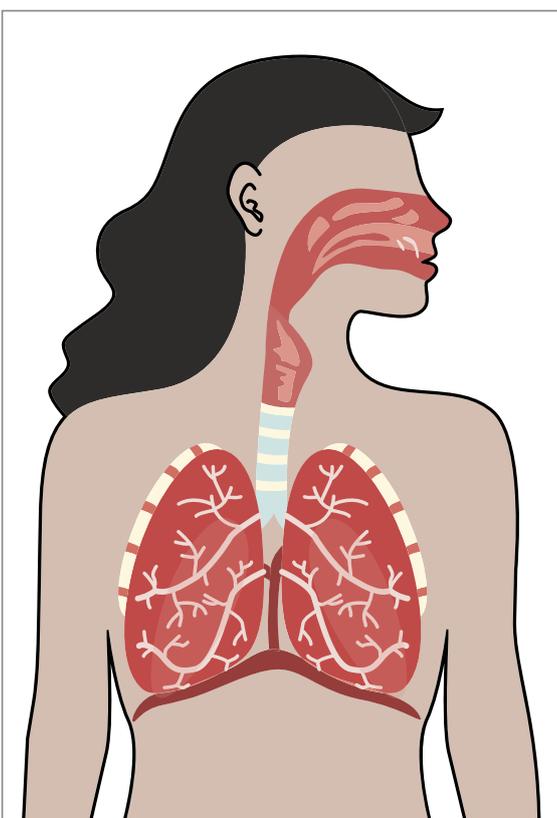


Your airway and breathing during anaesthesia

The first section of this leaflet explains what the airway is, why anaesthetists need to manage it and how they do this during your anaesthetic.

It also explains how anaesthetists assess your airway ahead of surgery for any potential problems and the common risks associated with airway management.

The second section explains more detail about what happens if the management of your airway requires more planning and preparation.



Standard airway management

The airway

The airway, or breathing passage, is the path air takes to reach your lungs. When you breathe in, the air enters through your nose and mouth and flows through your throat, larynx (voicebox) and trachea (windpipe) to reach your lungs. Your body takes the oxygen it needs from this air.

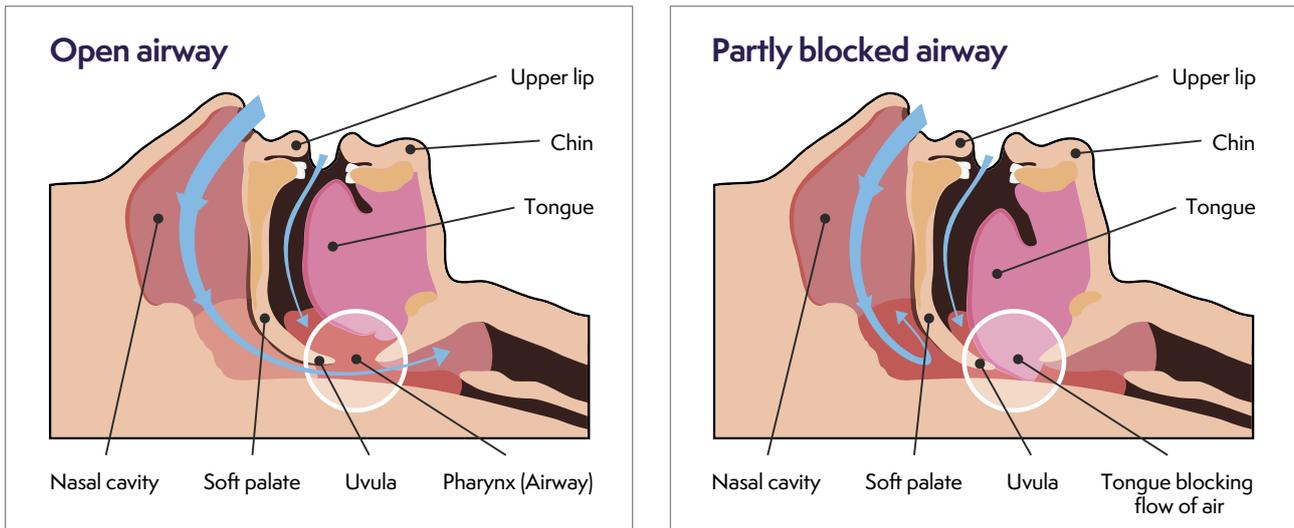
During anaesthesia, anaesthetic gases can be mixed with this air to help keep you asleep during the operation.

Your airway and breathing during anaesthesia

Why anaesthetists need to 'manage' the airway during anaesthesia

As well as giving the anaesthetic, anaesthetists are responsible for your wellbeing for the duration of the surgery. This includes ensuring that your lungs continue to receive oxygen while you are anaesthetised.

This is particularly important during a general anaesthetic or deep sedation, as the muscles around your tongue and throat relax and could block the airway. The anaesthetist will plan how best to prevent this from happening. This is called 'managing' the airway.



How anaesthetists 'manage' the airway

The most important gas you will be given is oxygen. Before the anaesthetic begins you may be asked to breathe oxygen from a plastic face mask or from soft plastic tubes in your nostrils. This gives your lungs extra oxygen before the anaesthetic starts.

Anaesthetists have different methods and equipment to help them manage your airway. These will vary depending on their choices, on you as a patient and on the type of operation you are going to have.

There are different types of tubes that could be placed either in the mouth, within the throat or in the trachea, to open the airway and enable oxygen and anaesthetic gases to be delivered easily to the lungs. These devices are normally put in after you are asleep (or are deeply sedated) so you will have no knowledge or memory of their use or insertion. The placement of a tube into your trachea (windpipe) is known as 'tracheal intubation'.



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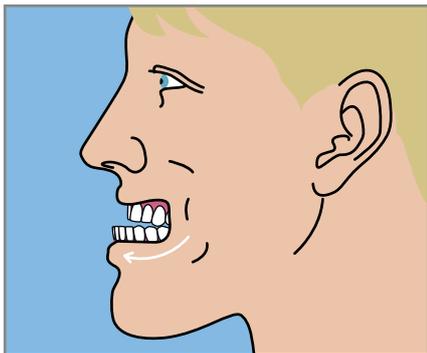
How anaesthetists assess your airway

Before you have an anaesthetic, your anaesthetist or a member of their team will want to ask you a variety of questions, so that the best plan can be made for your anaesthetic and the management of your airway. If previously you were told about any difficulties managing your airway and breathing, you should inform the anaesthetist. They will also look at records from your previous anaesthetics if they are available.

They will ask about relevant medical conditions, for example arthritis in your neck, obstructive sleep apnoea or acid reflux.

Your anaesthetist may perform a few tests to help predict which type of airway management is needed for your situation. For example:

- They will usually check you can open your mouth widely and look at the back of your throat
- they may ask you to move your bottom jaw forward or to bite your top lip
- if you have a growth or swelling in your airway or neck, they will look at any ultrasound or CT scans you may have had
- they may also look through your nose with a small flexible camera. This is painless.



Risks and common events associated with managing airways

People vary in how they interpret words and numbers. This scale is provided to help.



Sore throat

Putting airway equipment into your throat can cause a sore throat after your operation. This is very common.

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Dental damage and injuries to your lips or tongue

There is a risk of damage to your teeth, lips and tongue when the breathing tube is being placed or removed. This is more likely if you have fragile teeth, crowns or an airway that is difficult to manage. Minor bruising or small splits to the lips or tongue are common and happen in about 1 in 20 anaesthetics. Minor injuries usually heal quickly. Damage to teeth requiring treatment is uncommon and happens 1 in every 4,500 anaesthetics to healthy teeth.

Failed intubation

Although it is uncommon, the anaesthetist may find it difficult or impossible to place an endotracheal tube into your windpipe. This is called a failed intubation. If this happens the anaesthetist may need to wake you up and postpone your surgery. Failed intubation happens around 1 in 2,000 anaesthetics for planned surgery. It is more common in emergency surgery and higher still in pregnant patients having emergency anaesthesia, where it occurs in approximately 1 in 300 anaesthetics.

Serious complications

On rare occasions, there may be serious complications due to problems with patients' airways.

One cause may be stomach contents going into the lungs. This is called 'aspiration.' To minimise this risk, patients are routinely advised not to eat for six hours before planned surgery and some are also given tablets to reduce the amount of acid in the stomach.

Although very rare, other serious complications may lead to death, brain damage and unexpected admission to intensive care.

A 2011 study in the UK found that serious complications happen in about 1 in 16,000 anaesthetics.

Accidental awareness during general anaesthesia

Awareness occurs when you become conscious during the time you were expecting to be asleep. It is rare, occurring in approximately 1 in 20,000 anaesthetics.

Awareness is more common at the time of starting the anaesthetic and waking up. If your airway is difficult to manage there is a greater chance of awareness during this time.

What you can do to reduce risks

Teeth

Make sure your teeth and any dental work such as crowns or bridges are secure and healthy before an anaesthetic (visit a dentist if needed). This will reduce the risk of them being damaged and reduces the risk of a tooth becoming loose and falling into the airway.



Starvation and pre-medication to prevent aspiration

Follow any instructions you are given on when you should stop eating and drinking before your anaesthetic. This is usually six hours for food and two hours for water. You should also take any medication to reduce the risk of aspiration as prescribed by the anaesthetist.



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Obstructive sleep apnoea

If you have obstructive sleep apnoea, this will place you at higher risk of airway difficulties and you will need to be closely monitored following your anaesthetic. You may need to stay overnight in hospital, even for minor procedures. If you have a continuous positive airway pressure (CPAP) machine you should bring it with you to the hospital. You will often use it during your recovery from your anaesthetic.



Beards and facial hair

Thick beards make it more difficult to look after your airway as face masks may not fit as snugly on your face. Thinning out your beard or shaving it off will help. Your anaesthetist may ask you to shave it completely.



Patient choice

If there are expected difficulties in managing your airway, anaesthetists should offer a full explanation and discuss any options for managing your airway with you.



Management of 'difficult' airways

This section explains what happens if the management of your airway is thought to need more planning and preparation.

What can make an airway 'difficult'

There are several factors that alone or together might suggest that the management of your airway may be more 'difficult.' This means that the anaesthetist is likely to use more specialised equipment or techniques before and during anaesthesia.

Some factors may be to do with the shape and condition of your mouth, jaw and neck, for example:

- difficulty in opening your mouth
- loose teeth
- small lower jaw
- large beards
- injury or swelling of your airway (mouth, jaw, throat, neck).

Others may be to do with medical conditions or previous medical treatments:

- obesity
- obstructive sleep apnoea
- severe reflux or vomiting
- pregnancy
- rheumatoid arthritis
- tumour or growth in the airway (cancer and non-cancer)
- radiotherapy to your head or neck
- a record of complications from a previous anaesthetic.

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How anaesthetists look after a 'difficult' airway

Your anaesthetist will consider the best method to manage your airway, based on their assessment and the results of any tests. If your anaesthetist thinks the management of your airway may require additional interventions, they will discuss with you the options available to keep you safe during the operation.

Awake or sedated tracheal intubation

Uncommonly, if there are likely to be significant difficulties using the usual approach to intubation, the anaesthetist may suggest an 'awake' (or sedated) intubation. In this case the tube is placed into your trachea while you are awake or sedated. This way, if the intubation is difficult or fails, they can just stop, and you continue to breathe on your own. If sedation is used, you may have little memory of the procedure.

Awake intubation is carried out in the anaesthetic room or operating theatre. Your anaesthetist will connect you to various machines to monitor your blood pressure, heart function and oxygen levels. They will, the same as for any anaesthetic, place a cannula (a thin plastic tube through which drugs can be injected) in your hand or arm. You will also be given oxygen through a mask or a soft plastic tube inside your nostrils.

Your anaesthetist will carefully spray local anaesthetic inside your nose, mouth and throat several times to make them numb. The local anaesthetic may make you cough and may affect your ability to swallow. This is normal and your anaesthetist will look after you to make sure you are safe.

Once the area is numb, the anaesthetist will pass a small flexible tube attached to a camera through your mouth or nose. This guides the breathing tube into your trachea. Once the breathing tube is safely in place, your anaesthetist will start the general anaesthetic and you will become unconscious.

A video of a patient having an awake tracheal intubation is available on the Difficult Airway Society (DAS) website here: http://bit.ly/DAS-AFI_video

Depending on the length of your operation, your mouth and throat may still feel numb for a while after you wake up. You may be advised not to eat and drink for a couple of hours to prevent choking.

DIFFICULT AIRWAY ALERT CARD
Please fill out to your anaesthetist if you need an operation

Name: _____
DOB: _____ NHS No: _____
Date of event: _____
Hospital: _____

Issued by Difficult Airway Society (DAS) Ltd
For more information including training visit our web: www.das.ac.uk/online

Difficult bag mask ventilation?
Difficult S/D placement?
Difficult direct laryngoscopy?
Difficult tracheal intubation?
ACCESS CODE (to enter new alert cards) _____
Brief report of airway incident: _____

Difficult Airway Alert Card

If your anaesthetist thinks your airway will require specific management in the future, or has had significant difficulties in managing your airway, they will usually fill in a 'Difficult Airway Alert Card' or a form for you (see above). You should take this with you when you attend future

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hospital appointments, so that anaesthetists looking after you in the future are aware of what the difficulties were and can plan for your next anaesthetic. It is useful to show this card to your GP to check that the information is on your records.

DAS is a specialist group of anaesthetists with a particular interest in airway management. Additional patient information resources on airways can be found on the DAS website:

das.uk.com/patient_education

Disclaimer

We try very hard to keep the information in this leaflet accurate and up-to-date, but we cannot guarantee this. We don't expect this general information to cover all the questions you might have or to deal with everything that might be important to you. You should discuss your choices and any worries you have with your medical team, using this leaflet as a guide. This leaflet on its own should not be treated as advice. It cannot be used for any commercial or business purpose.

For full details, please see our website: rcoa.ac.uk/patientinfo/resources#disclaimer

Tell us what you think

We welcome suggestions to improve this leaflet.

If you have any comments that you would like to make, please email them to: patientinformation@rcoa.ac.uk

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This leaflet will be reviewed within three years of the date of publication.

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