

Anaesthesia explained

Information for patients



This booklet is for adults who are expecting to have a surgical procedure under anaesthetic. It gives you information about anaesthesia and suggests where you can find out more. It has been written by patients, patient representatives and anaesthetists, working in partnership. The information in this leaflet is adapted from information produced by the Royal College of Anaesthetists.

Your anaesthetist will discuss with you the anaesthetic methods that are appropriate for you. Sometimes you can make choices about the type of anaesthetic you can have, if you want to. You and your anaesthetist can work together to make your experience safe and as comfortable as possible.

What is anaesthesia?

The word 'anaesthesia' means 'loss of sensation'.

Anaesthesia is used to stop you from feeling pain during surgical or diagnostic procedures. It does this by blocking the pain signals that pass along your nerves to your brain.

Not all types of anaesthesia make you unconscious. Anaesthesia can be given in various ways and can be applied to different parts of the body.

Anaesthesia has made much of today's surgery possible and has brought great benefits. Modern anaesthesia is very safe and can be tailored to your individual needs and to the type of surgery you are having.

Types of anaesthesia

There are three main types of anaesthesia:

General anaesthesia

This puts you to sleep and means that you remain in a state of unconsciousness, controlled by your anaesthetist. For some operations general anaesthesia is essential. You will be asleep and feel nothing throughout the procedure. Before your operation starts, anaesthetic drugs are injected into your vein or given to you as anaesthetic gases that you breathe into your lungs. The drugs or gases are carried to your brain in your bloodstream, where they lead to the state of anaesthesia (where you become unconscious). As the anaesthetic drugs/gases wear off, your consciousness and sensations will gradually return.

Regional anaesthesia

General anaesthesia is not always necessary or advisable for all operations. Regional anaesthesia can be used to numb large areas of your body and means that you don't have to be asleep. There are three types of regional anaesthesia:

- spinal
- epidural
- regional nerve block.

Depending on the type of operation you are having, the anaesthetist can use techniques to completely numb specific parts of your body. Regional anaesthesia is used increasingly frequently to avoid the possible side-effects of general anaesthesia. It can also be useful in people who are too frail to undergo a general anaesthetic.

With regional anaesthesia, a small amount of an anaesthetic drug is injected near to the nerves that connect a part of your body to your brain. The anaesthetic temporarily prevents the nerves from sending any messages to your brain. This is where pain is registered so, by cutting off the signal from the nerves, the part of your body being operated on cannot feel any pain. Sometimes a regional anaesthetic is used alongside a general anaesthetic

Spinal anaesthesia

This is one of the most common types of regional anaesthesia. It involves an injection of anaesthetic into the fluid that surrounds the nerves in the lower part of the spine. It is used for operations below the waist or in the pelvic region. It can make you completely numb from the waist down for up to a couple of hours.

Epidural anaesthesia

An epidural uses a similar technique to spinal anaesthesia, with a narrow plastic catheter (fine flexible tube) left in the place called the 'epidural space' near to the nerves in your back. This means that the anaesthetist can give you repeated doses of local anaesthetics and painkillers without having to give you further injections. This makes it useful for longer operations on the lower half of the body.

By being able to increase the dose as needed, the anaesthetist can give you a lower overall dose of medication, so that your pain is controlled without complete loss of feeling.

An epidural can be useful for post-operative pain relief, because the catheter can be left in place for several days.

Regional nerve block

Similar techniques can be used to numb other parts of the body. For example, your arm can be numbed with an injection into the side of your neck or armpit, to allow your shoulder or wrist to be treated.

Local anaesthesia

For operations on a small area of the body it is possible to simply inject local anaesthetic at the site of the operation.

Local anaesthetic numbs just a small part of the body. This technique is often performed by a surgeon or GP in minor surgery units and is usually only used for short, simple operations such as stitching a wound or removing a mole.

The regional and local anaesthesia does not lead to the loss of consciousness (will not make you go to sleep); they only stop you from feeling pain. However, you may also be able to have sedation to make you sleepy, if you are having local or regional anaesthesia. Sedation uses small amounts of anaesthetic or similar drugs to make you feel sleepy and relaxed during a procedure.

Sedation can be also used as the only method of pain relief during procedures that do not require anaesthesia, but may be unpleasant or uncomfortable.

If you are having anaesthesia which means you will be awake during a procedure, you may wish to listen to music to distract yourself from the theatre sounds. Some theatres may also give you the option of watching a film.

The anaesthetist

Anaesthetists are doctors who have had specialist training in anaesthesia and also in the treatment of pain, intensive care and emergency care (resuscitation).

Your anaesthetist is responsible for:

- your wellbeing and safety throughout your surgery
- agreeing a plan with you for your anaesthetic (if appropriate)
- giving you your anaesthetic
- planning your pain control with you
- managing any transfusions (of medicines or blood) you may need
- your care in the Intensive Care Unit (if this is necessary).

You will be treated by a consultant anaesthetist, another qualified anaesthetist or by an anaesthetist in training. You can ask to talk to a consultant or qualified anaesthetist if you want to – there is always one available for advice and help if needed. Please also remember that you can change your mind and refuse treatment at any time.

If you are having a general anaesthetic

Before you come into hospital

Here are some things that you can do to prepare yourself for your operation and reduce the likelihood of difficulties with the anaesthetic.

- **If you smoke** you should try to give up for several weeks before the operation. The longer you can give up beforehand, the better. Smoking reduces the amount of oxygen in your blood and increases the risk of breathing problems during and after an operation. If you cannot stop smoking completely, cutting down will help.
- **If you are very overweight** many of the risks of having an anaesthetic are increased. Reducing your weight will help to reduce these risks.
- **If you have loose or broken teeth** or crowns that are not secure, you may want to visit your dentist for treatment before

your operation. This is because the anaesthetist may need to put a tube in your throat to help you breathe, and if your teeth are not secure they may be damaged.

- **If you have a long-term medical problem** such as diabetes, asthma or bronchitis, thyroid problems, heart problems or high blood pressure (hypertension), you should ask your GP if you need a check-up before your operation.

Health check before your general anaesthetic

Before your anaesthetic we need to know about your general health. At the pre-operative assessment clinic we will carry out a health check by asking you questions. You may also need to have some tests, such as an ECG, to make sure you are fit enough to have a general anaesthetic.

Medicines

Before a general anaesthetic we need to know about all the medicines that you take, including any inhalers or creams or off the shelf medicines.

You should continue to take your normal medicines up to and on the day of surgery, unless your anaesthetist or surgeon has asked you not to or you have been told to stop them by the nurse at your Pre-operative Assessment visit.

If you take drugs to thin your blood (such as warfarin, aspirin or clopidogrel), drugs for diabetes or herbal remedies, you will be given specific instructions about when to stop taking these at your Pre-operative Assessment visit.

Fasting before a general anaesthetic or sedation

We will give you specific clear instructions about eating and drinking before your operation, when you come for your Pre-operative Assessment appointment. For your own safety, it is very important to follow these instructions. If there is any food or liquid in your stomach when you have a general anaesthetic or sedation, it could come up into the back of your throat and then go into your lungs. This would cause choking, or serious damage to your lungs. If you do have something to eat or drink after the times stated, your operation will have to be delayed or even postponed to another day.

Meeting your anaesthetist

You will normally meet your anaesthetist before your operation. Your anaesthetist will look at the results of your health check and may ask you more questions about your health. Please make sure you fully answer the anaesthetist's questions, which will include details of your previous anaesthetic experiences, and any family history of problems with anaesthesia. They may also need to listen to your chest with a stethoscope, examine your neck and jaw movements, and look in your mouth.

The anaesthetist will discuss with you the choice of anaesthetic methods suitable for your surgical procedure, highlighting the benefits and risks associated with each of them, in order to agree with you the best and safest anaesthetic option. If you have any questions or concerns, this is the best time for you to ask.

Blood transfusions

During most operations, you will lose some blood. If necessary, your anaesthetist will make up for this blood loss by giving you other types of fluid into a vein through a drip. If you lose a lot of blood, your anaesthetist will consider whether you need to have this replaced with donated blood (a blood transfusion). If your anaesthetist expects you to need a blood transfusion, they will discuss this with you beforehand, but there is a chance you might need blood unexpectedly.

You have the right to refuse a blood transfusion, but you must make this clear to your surgeon before the operation. You may be asked to sign a document which confirms that you don't want a blood transfusion. This will give us enough time to discuss the alternative options if you do need a transfusion, as some of them require preparation in advance.

What happens during a general anaesthetic

When it is time for your operation, a member of staff will go with you to the anaesthetic room next to the theatre. If you are walking, you will need your dressing gown and slippers. If you are anxious or have difficulty communicating (after a stroke, for example), you can bring a friend or family member with you.

Theatre staff normally wear blue 'pyjamas' and paper hats. Because of this, they all look much the same, but you will probably recognise your anaesthetist and surgeon as you should have met them already.

If you have walked to the anaesthetic room, you will now need to get onto a theatre trolley for your anaesthetic. This trolley is narrower and higher than a hospital bed and may feel quite cold and hard. A member of staff will help you onto it.

Theatre staff will go through a safety checklist with you, checking your identification bracelet, your name and date of birth. They will also ask you about other details in your medical records, as a final check that you are having the right operation, and will re-check your consent form.

The anaesthetic room

If you are having a general anaesthetic, you will probably now need to remove your glasses, hearing aids and dentures to keep them safe. If you would prefer to leave your dentures in place, ask your anaesthetist if this would be alright.

To monitor you during your operation, your anaesthetist will attach you to machines:

- Three small sticky patches will be placed on your chest (electrocardiogram or ECG) to monitor your heart.
- A blood-pressure cuff will be placed on your arm which will inflate and deflate occasionally to check your blood pressure.
- A clip will be placed on your finger (pulse oximeter) to monitor the oxygen level in your blood.

Starting the anaesthetic (induction)

To send you off to sleep your anaesthetist will inject anaesthetic drugs into your vein. A needle will be used to put a thin plastic tube (a 'cannula') into your vein in the back of your hand or forearm. This is then covered with a sterile dressing to stop it slipping out. The anaesthetist will give you anaesthetic drugs through this cannula. This is called an induction to anaesthesia. Induction happens very quickly, and you will become unconscious (asleep) within a minute.

Following the induction you will be given:

- **anaesthetic drugs** or **anaesthetic gases** to keep you asleep during the operation
- **pain-relieving drugs** to keep you pain-free during and after your operation
- **muscle relaxants** to relax or temporarily paralyse the muscles of your body to help with the surgery (if required). If this is necessary, the anaesthetist will have to control your breathing during this time. This is done by inserting a plastic tube into your windpipe while you are asleep. The tube is then attached to a ventilator that is used to breathe for you during the operation.
- **antibiotics** to guard against infection.
- **anti-sickness drugs** to stop you feeling sick.

The anaesthetist will stay with you throughout the surgery. They will be constantly alert and aware of your condition, checking your body functions by watching the monitors, maintaining the appropriate level of anaesthesia and giving you any fluids or drugs that you need.

Waking up from a general anaesthetic

At the end of the operation, your anaesthetist will stop giving anaesthetic drugs and/or gases and you will wake up gradually. If muscle relaxants have been used, you will be given a drug that reverses their effect. For all but very major operation (such as open heart surgery) you will be breathing normally soon after the operation is over.

When your anaesthetist is sure that you are recovering normally, you will be taken to the recovery room. A designated recovery nurse will be with you at all times and will continue to monitor your blood pressure, oxygen levels and pulse rate. You will be given oxygen through a lightweight clear-plastic mask, which covers your mouth and nose. Breathing oxygen keeps up the levels of oxygen in your blood while the anaesthetic wears off. The staff will remove your mask as soon as the oxygen in your blood stays at the right level without you having to breathe in extra oxygen.

You may temporarily need a urinary catheter. This is a thin soft tube put into your bladder while you are asleep, to drain the urine during and after the surgical procedure.

Returning to the ward

The recovery staff must be totally satisfied that you have safely recovered from your anaesthetic, you are comfortable, and all your observations (such as blood pressure and pulse) are stable, before you are taken back to the ward.

The type of operation you have had will affect how long it will be before you can drink or eat. After minor surgery, this may be as soon as you feel ready. Even after quite major surgery you may feel like sitting up and having something to eat or drink within an hour of regaining consciousness.

Risk of side effects and complications

The benefits of your operation need to be weighed against the risks of the anaesthetic procedure and the drugs used. This will vary from person to person.

The risk to you as an individual will depend on:

- whether you have any other illness
- personal factors, such as whether you smoke or are overweight
- whether you are having surgery which is complicated, long or being carried out in an emergency.

Side effects

Most people have no problems after their operation and anaesthetic. How you feel will depend on the type of anaesthetic used and operation you have had, how much pain-relieving medicine you need and your general health.

However, you may suffer from side effects of some sort and almost all treatments, including anaesthetic drugs, have side effects of some kind. Unpleasant side effects do not usually last long. Some are best left to wear off and others can be treated.

Complications

Complications are unexpected and unwanted events that can develop because of a treatment. Examples would be an unexpected allergy to a drug or damage to your teeth caused by difficulty in placing a breathing tube.

You are encouraged to discuss any potential side effects or complications of anaesthesia with the anaesthetist during your Pre-operative Assessment appointment, or with your designated anaesthetist when they see you before your operation.

Very common and common side effects and complications

- **Feeling sick and vomiting after surgery** – This can be treated with anti-vomiting drugs (anti-emetics), but it may last from a few hours to several days.
- **Sore throat** – If you have had a tube in your airway to help you breathe, it may give you a sore throat. The discomfort or pain lasts from a few hours to a few days.
- **Dizziness and feeling faint** – Your anaesthetic you have had may lower your blood pressure and make you feel faint. This may also be caused by dehydration (when you have not been able to drink enough fluids). Fluids or drugs (or both) will be given into your drip to treat this.
- **Shivering** – You may shiver if you get cold during your operation. Care is taken to keep you warm during your operation and to warm you afterwards. We may use a hot-air blanket may to do this. However, shivering can happen even when you are not cold, due to the effects of anaesthetic drugs.
- **Headache** – There are many causes of headaches, including the anaesthetic, the operation, dehydration and feeling anxious. Most headaches get better within a few hours and can be treated with pain-relieving medicines.
- **Aches, pains and backache** – This may be from lying still for a long time or from the operation itself.
- **Bruising and soreness** – This may develop around injection and drip sites, as well as the area that has been operated on. It normally settles without treatment.
- **Confusion or memory loss** – This is more likely in older people who have had an operation under general anaesthetic, or if you already have problems with your memory. It is usually temporary, but may sometimes be permanent and you may not be able to remember certain memories from just before your operation.
- **Chest infection** – A chest infection is more likely to happen if you smoke, and may lead to breathing difficulties. It is very important to give up smoking for as long as possible before

your anaesthetic, and to give up permanently for your future health.

- **Bladder problems** – After certain types of operation men may find it difficult to pass urine, and women can tend to leak. To prevent problems, you may have a urinary catheter inserted during the procedure.

Uncommon side effects and complications

- **Breathing difficulties** – Some pain-relieving drugs can cause slow breathing or drowsiness after the surgery. If muscle relaxants are still having an effect (as they have not been fully reversed), they can make your breathing muscles weak. These effects can be treated with other drugs.
- **Damage to teeth, lips or tongue during a general anaesthetic** – Damage to your lips and tongue happens occasionally, but is not common. Damage to your teeth is also uncommon, but may happen if your anaesthetist needs to place a breathing tube in your windpipe. It is more likely if you have weak teeth, a small mouth, a stiff neck or a small jaw.
- **An existing medical condition getting worse** – Your anaesthetist needs to be assured that you are as fit as possible before your surgery. That is why, if you have any existing medical condition (coronary heart disease, high blood pressure, diabetes, asthma, etc.) you will have to be checked by your GP and in the Pre-operative Assessment clinic to make sure that your condition is under the best possible control. If not, it has to be treated and brought up to this level before your surgery. However, even then, if you have had a heart attack or stroke, it is possible that it may happen again – as it might do even without the surgery.

Rare or very rare complications

- **Damage to your eyes** – Anaesthetists take great care to protect your eyes from accidental pressure or dryness. Serious and permanent loss of vision can happen, but it is very rare.
- **Serious allergy to drugs** – Allergic reactions will be noticed and treated very quickly. Before the operation, your anaesthetist will need to know about any allergies you or your family have.
- **Nerve damage** – Most nerve damage is temporary, but in some cases damage is permanent.
- **Death** – Deaths caused by anaesthesia are very rare. There are probably about five deaths for every million anaesthetics given in the UK.
- **Equipment failure** – Vital equipment that could fail includes the anaesthetic gas supply or the ventilator. Monitors give an instant warning of problems and anaesthetists have immediate access to back-up equipment.
- **Awareness** – Awareness is becoming conscious during some part of an operation under general anaesthetic. This is very rare.

How to contact us

If you have any questions or concerns please contact us on the telephone number on your appointment letter.

Further information

The Royal College of Anaesthetists websites has lots of good information on anaesthesia.

Website: www.rcoa.ac.uk

If you have a specific requirement, need an interpreter, a document in Easy Read, another language, large print, Braille or audio version, please call **01865 221 473** or email **PALSJR@ouh.nhs.uk**

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