



Anaesthesia: What you need to know

Information for patients

You can find more information on the website:
www.rcoa.ac.uk/patientinfo

This leaflet provides information about the benefits and risks of anaesthesia and explores the differences between the options available.

An anaesthetist will talk to you about your options and which type of anaesthetic is most suitable for you. Your preferences are important, and you will be given the opportunity to discuss and ask about the risks and benefits of these options. Following this a shared decision can be made between you and your anaesthetist on the most appropriate anaesthetic technique for you and your operation. You can always change your mind at any time.

What is Anaesthesia?

Anaesthesia has made modern surgery possible with a high degree of comfort and safety. Anaesthesia stops you feeling pain and other sensations. It can be given in various ways and does not always make you unconscious.

Local anaesthesia involves injections that numb a small part of your body. You stay conscious but free from pain.

Regional anaesthesia involves injections that numb a larger or deeper part of the body. This can include a spinal or epidural anaesthetic (an injection placed in your back, which makes you numb from the waist downwards) or a nerve block (an injection numbing a whole area such as your arm or leg). You stay conscious but free from pain.

General anaesthesia gives a state of controlled unconsciousness. It is essential for some operations. You are unconscious, feel nothing and should have no memory of what happens while you are anaesthetised.

Regional and local anaesthesia can also be combined with either general anaesthesia or sedation.

Sedation is not anaesthesia. Sedation involves using small amounts of anaesthetic drugs to produce a 'sleep-like' state. It makes you physically and mentally relaxed, but not unconscious. You may still remember the procedure.

Why do I need an anaesthetic?

As well as stopping the sensation of pain during surgery the anaesthetic modifies the body's response to the stress of surgery, allowing the operation to be performed safely. Most surgery will need some form of anaesthetic.

Nothing will happen, however, until you understand and consent (agree) to what has been planned for you. You have the right to refuse if you do not want the surgery or anaesthetic. You can also change your mind at any time.

What are the alternatives?

Many operations are only possible with general anaesthesia and there is no alternative other than not having the operation.

For other operations, a regional or local anaesthetic as described above can be an alternative to a general anaesthetic.

Each type of anaesthetic has different risks and benefits and you and your anaesthetist can make a shared decision about the best option for you.

Sometimes, the pre-assessment appointment can identify that your surgery and anaesthetic might be high risk. In this case, a smaller operation may be an alternative. Your anaesthetist and surgeon will explore the different options with you. This discussion can also include anyone else you wish to involve in making a shared decision.

What can you do before coming to hospital?

Steps you can take to reduce your risk of complications:

- **If you smoke**, giving up for several weeks before the operation will reduce the risk of breathing problems both during and after your anaesthetic, making your anaesthetic safer.
- **If you are very overweight**, reducing your weight will reduce many of the risks of having an anaesthetic.
- **If you have loose teeth or crowns**, treatment from your dentist may reduce the risk of damage to your teeth during the anaesthetic.
- **If you have a long-standing medical problem** such as diabetes, asthma or bronchitis, thyroid problems, heart problems or high blood pressure, these need to be controlled as well as possible. You may need to make an appointment with your GP.
- **Doing some exercise** will help make sure your body is as fit as possible before your surgery. You can slowly introduce exercise into your daily activities, for example by taking short walks.

What should I expect before my operation?

Pre-assessment clinic: Before your operation, we will invite you to a pre-assessment clinic. The pre-assessment nurse will ask you about your health and sometimes perform tests such as blood tests or a heart tracing (ECG). Depending on the surgery you are having, you may also meet an anaesthetist at this stage or undergo more tests. This is usually the case if surgery is more major or if you have certain medical conditions which may increase the risk of anaesthesia and surgery. This process is designed to make sure you are as fit as possible and also gives you time to think about whether to go ahead with the surgery, depending on your individual risk.

Medications: An accurate list of your medicines is very important. Please bring with you the medication or a complete medication list from your GP.

Planned surgery: If your operation is not urgent, the anaesthetist or nurse at the pre-assessment clinic may talk to you about delaying it in order to improve your health and pre-existing medical conditions e.g. diabetes, high blood pressure. You may need more tests or input from other specialist teams.

For most planned surgery, we will ask you to come in on the day of your operation. You will meet the surgeons and anaesthetists who will be looking after you when you arrive. You will have the opportunity to go over the anaesthetic options available to you again and to ask any questions.

Unplanned surgery: If your operation is urgent or an emergency, there is generally less time to improve your health beforehand. You may not see a pre-assessment nurse or attend the pre-assessment clinic, but you will still be able to discuss the different anaesthetic options and risks before the operation. However, you will have less time to consider them, especially in an emergency. In these

circumstances the team looking after you may have to decide on the safest option for you.

Women of childbearing age

If you are pregnant when you have an operation or investigation, there is a possibility it may harm your unborn baby. This is especially true at the beginning of a pregnancy when you might not even realise that you are pregnant. For this reason, we routinely ask all females of child-bearing age (from the start of menstruation to 55 years) whether they could be pregnant. You will be offered a pregnancy test, which is done by testing a sample of your urine. If you know that you are pregnant or think that you might be pregnant, it is very important to let your doctor or nurse know as soon as possible.

Your doctor will talk to you about whether to go ahead with your operation. Everything you tell us will be treated confidentially confidential, and will not be shared without your permission.

What should I expect on the day of surgery?

Eating and drinking: We will give you clear instructions about eating and drinking. It is important to follow these instructions clearly because otherwise food or liquid in your stomach during your anaesthetic could come up into your throat and damage your lungs.

If you are a smoker you should not smoke on the day of your operation.

If you are taking medicines: you can still take most medicines before your operation, but there are some important exceptions. You will receive specific instructions from the pre-assessment team about your medicines. Please contact the pre-assessment clinic for advice if you are unsure.

If you feel unwell when you are due to come into hospital, please

telephone the ward for advice.

What are the options for pain relief afterwards?

Good pain relief is important. Some people need more pain relief than others. Occasionally, pain is a warning sign that all is not well; therefore, you should always tell the staff so that they can help. There are different ways of giving pain relief:

Pills, tablets or liquids to swallow - used for all type of pain.

Injections – used if you feel sick or cannot eat and drink. This may be given intravenously (through a cannula into a vein for a quicker effect) or intramuscularly (into your leg or buttock muscle).

Suppositories - waxy pellets put in your rectum (back passage).

Patient-controlled analgesia (PCA) – this machine allows you to control your pain relief yourself. The medicine enters your body through your cannula.

Local anaesthetics and regional blocks

These types of anaesthesia can be very useful for relieving pain after surgery.

What will happen after the anaesthetic?

After the operation you will spend some time in the recovery ward. Your anaesthetist will explain what to expect after the anaesthetic. This is different for everyone and depends on your health and the type of surgery you are having.

What are the benefits and risks of anaesthesia?

Some types of surgery need general anaesthesia. However, an increasing number of operations can take place under regional anaesthesia. Depending on your medical condition and the operation you are having, this may be safer or more comfortable for you.

The benefits of regional anaesthesia compared to general anaesthesia can include:

- Avoiding a general anaesthetic and being able to eat and drink sooner after surgery.
- Less effect on the lungs and breathing and a lower risk of a chest infection after surgery.
- Better pain relief, sometimes for up to a few days after the operation.
- Reduced need for strong pain relief medications, which can cause nausea, constipation, confusion and drowsiness.

With a regional anaesthetic, your arm or legs may be numb for several hours after the operation and can be injured without you realising. It is important to take care to protect them from injury until the feeling is back to normal.

A general anaesthetic can often be combined with a nerve block to give good pain relief after surgery. This can have benefits but does mean there are the risks of both general and regional anaesthesia. You can discuss the risks and benefits with your anaesthetist.

Let's think about risk

Everyone varies in the risks they are willing to take. Your anaesthetist will describe the risk to you, but only you can decide

how much the risk affects your plan to have the surgery you would like.

The risk to you as an individual depends on:

- whether you have any other illness;
- personal factors such as whether you smoke or are overweight; and
- whether the surgery is complicated, long, or an emergency.

To understand the risk fully you need to know:

- how likely it is to happen;
- how serious it could be; and
- how it can be treated if it happens.

The anaesthetist can also advise you whether there are any anaesthetic techniques that will reduce those risks.

What are side effects and complications?

Anaesthetic risks can be described as side effects or complications. These words are somewhat interchangeable, but are generally used in different circumstances, as shown below.

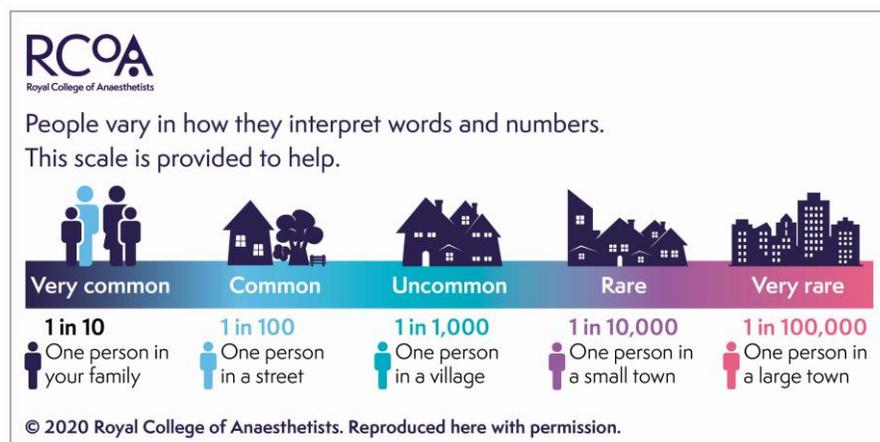
Side effects are the effects of drugs or treatments which are unwanted, but are generally predictable and expected. For example, sickness is a side effect of a general anaesthetic, although steps are taken to prevent it.

Complications are unwanted and unexpected events due to a treatment. However, they are recognised as events that can happen. An example is a severe allergic reaction to a drug, or damage to your teeth when inserting a breathing tube. Anaesthetists are trained to reduce complications and to treat them if they happen.

Index of side effects and complications

The following index lists possible side effects and complications according to how likely they are to happen.

This chart shows what is meant in this booklet when a risk is described in words. For example, if something is 'very common' it means that about 1 in 10 people will experience it. It also means it will not happen to about 9 out of 10 people.



Using this index

The following index starts with 'very common' and 'common' side effects and finishes with 'rare' or 'very rare' complications.

RA = risk relevant to regional anaesthesia

GA = risk relevant to general anaesthesia

 If you see the symbol opposite next to the item, it means you can find more detailed information about this risk on the website here: <https://www.rcoa.ac.uk/patient->

information/patient-information-resources/anaesthesia-risk/risk-leaflets.

Very common and common risks

 **Feeling sick and vomiting** RA GA

Some operations, anaesthetics and pain-relieving drugs are more likely to cause sickness than others. Anti-sickness drugs are routinely given with most anaesthetics and extra doses can be given to treat feeling sick (nausea) or vomiting.

 **Sore throat** GA

For most general anaesthetics, the anaesthetist will place a tube in your airway to help you breathe. This can give you a sore throat. The discomfort or pain may last from a few hours to a few days. It is treated with pain-relieving drugs.

Dizziness and feeling faint RA GA

Anaesthetics can cause low blood pressure. Your anaesthetist will treat low blood pressure with drugs and fluid into your drip, both during your operation and in the recovery room. You will only go from the recovery room back to the ward when your blood pressure is stable.

 **Shivering** RA GA

You may shiver if you get cold during your operation. We take care to keep you warm and to warm you afterwards if you are cold. We may use a hot-air blanket. Shivering can also happen even when you are not cold, as a side effect of anaesthetic drugs.

 **Headache** RA GA

There are many causes of headache after an anaesthetic. These include the surgery, dehydration, and feeling anxious. Most

headaches get better within a few hours and we can treat them with pain-relief medicines.

Severe headaches can happen after a spinal or epidural anaesthetic. If this happens to you, your nurses should ask the anaesthetist to come and see you. You may need other treatment to cure your headache.

 Chest infection

RA GA

A chest infection is more likely to happen after major surgery on the chest or abdomen, after emergency surgery and after surgery in people who smoke. We can treat it with antibiotics and physiotherapy. In some circumstances, having an RA, rather than a GA, can reduce the risk of a chest infection. Occasionally severe chest infections develop which may need treatment in the intensive-care unit. These infections can be life-threatening.

Itch

RA GA

This is a side effect of opiate pain-relief medicines e.g. morphine. It can also be caused by an allergy to anything you have been in contact with, including drugs, sterilising fluids, stitch material, latex and dressings. It can be helped with drugs.

Aches, pains and backache

RA GA

During your operation you may lie in the same position on a firm operating table for a long time. You will be positioned with care, but some people still feel uncomfortable afterwards. Muscle pains can also happen if you receive a drug called suxamethonium.

Pain when drugs are injected

RA GA

Some drugs used for general anaesthesia or for sedation given with regional anaesthesia cause pain when injected. If you feel pain in places other than where the needle is you should tell your anaesthetist.

Bruising and soreness

RA GA

This can happen around injection and drip sites. It may be caused by a vein leaking blood around the cannula or by an infection developing. It normally settles without treatment other than removing the cannula.

 Confusion or memory loss

RA GA

This is common after surgery especially in older and vulnerable individuals. There are many causes. There are two types of confusion. Delirium happens very soon after surgery. This is a change in mental state which can result in confusion, difficulties with understanding or personality changes. Some people may be agitated or have hallucinations, others may become unusually sleepy.

Cognitive dysfunction can develop later. This involves difficulty with mental tasks like concentration, memory or completing several tasks at the same time. The cause of this is not well understood and there is evidence that in a few people its effects may be permanent.

Bladder problems

RA GA

Difficulty passing urine, or leaking urine, can happen after most kinds of moderate or major surgery. If this happens, the team looking after you will consider whether you need a urinary catheter (soft tube) placed in the bladder, which drains the urine into a bag. If the difficulty is expected to get better very soon, it is best to avoid putting in a catheter if possible, because urine infection is more likely if you have a catheter. Your nurses will make sure that you are clean and dry as soon as possible. Most bladder problems get better, so that your normal urinary habit returns before you leave hospital.

Side effects of nerve blocks in the arm

RA

A hoarse voice, droopy eyelid and changes in your vision are common and go away as the block wears off.

Uncommon risks

Breathing difficulty

RA GA

Some people wake up after a general anaesthetic with slow or slightly difficult breathing. If this happens to you, you will be cared for in the recovery room with your own recovery nurse until your breathing is better.

With some nerve blocks there is a rare risk of damage to the covering of the lung. This can lead to some degree of lung collapse.

Contraception

GA

One less commonly used anaesthetic drug can interfere with hormonal contraceptives (including pills, implants and coils). You will need to use alternative, non-hormonal form of contraception for the next 7 days. If you require this drug during anaesthesia, your anaesthetist will let you know afterwards.

Damage to teeth, lips and tongue

GA

Damage to teeth happens in 1 in 4,500 anaesthetics. Your anaesthetist will place a breathing tube in your throat at the beginning of the anaesthetic, and this is when the damage can happen. It is more likely if you have fragile teeth, a small mouth or a stiff neck. Minor bruising or small splits in the lips or tongue are common, but heal quickly.

Damage to the eyes

GA

It is possible that surgical drapes or other equipment can rub the cornea (clear surface of the eye) and cause a graze. This is uncomfortable for a few days but with some eye-drop treatment it normally heals fully. Anaesthetists take care to prevent this. Small pieces of sticky tape are often used to keep the eyelids together, or ointment is used to protect the surface of the eye. For some operations you may lie on your front (called the prone position).

This can increase the risk of damage to the eyes. Serious and permanent loss of vision can happen, but this is very rare.

Damage to peripheral nerves

RA GA

Peripheral nerves are the nerves running from the spine to the rest of the body. Nerve damage (paralysis or numbness) has a number of causes during local, regional or general anaesthetics. It varies with the type of anaesthetic and surgery you are having as well as certain pre-existing conditions. Your anaesthetist is trained to minimise these risks.

The risk of nerve damage may be up to 1 in 100 after having a general anaesthetic. Most cases are minor and resolve fully. Permanent nerve injury is rare and occurs in around 1 in 1000 to 1 in 1500 general anaesthetics.

Temporary nerve damage can be common after a nerve block (fewer than 1 in 10 nerve blocks) but full recovery usually follows. Risks vary between different types of nerve blocks. The vast majority of those affected (92-97%), recover within four to six weeks. 99% of these people are back to normal within a year. Permanent nerve damage is rare and precise numbers are not available. Estimates suggest it happens between 1 in 2500 and 1 in 30,000 nerve blocks.

Medical problems

RA GA

Your anaesthetist will make sure that any existing medical condition you have is well treated before your surgery. If you are already at risk of developing a medical problem such as a heart attack or a stroke, this risk could be increased during and after your operation.

Rare or very rare complications

Awareness

GA

Patients often worry that they will wake up during their general anaesthetic. This is called awareness. It can happen because you are not receiving enough anaesthetic to keep you unconscious. The anaesthetist uses monitors during the anaesthetic which show how much anaesthetic is being given and how your body is responding to it. These should allow your anaesthetist to judge how much anaesthetic you need.

Dreaming around the time of surgery is very common but this is not awareness. Some patients recall events from the recovery room after their operation and can be reassured that this is not awareness.

If you think you may have been conscious during your operation, you should tell any member of the team looking after you. Your anaesthetist will want to know so they can help you at this time and with any future anaesthetic you may have.

 Serious allergy to drugs RA GA

Allergic reactions can happen with almost any drug. Your anaesthetist uses continuous monitoring which helps make sure that any reaction is noticed and treated before it becomes serious. Very rarely, people die of an allergic reaction during an anaesthetic. It is important to tell your anaesthetist about any allergies you know you have.

 Damage to nerves in the spine RA GA

Permanent damage to the nerves in your spine is very rare after either a general anaesthetic, spinal or epidural anaesthetic. This can result in permanent paralysis. The risk depends on the type of surgery and pre-existing health conditions. This risk with a general anaesthetic is very rare. Exact figures are unknown however estimates suggest this happens in is less than 1 in 170000 general anaesthetics. This risk is lower than with a spinal or epidural anaesthetic.

When undergoing a spinal or epidural anaesthetic permanent nerve damage to the nerves in the spine is very rare. The best evidence available estimates this risk at 1 in 23000 to 1 in 50000.

 Equipment failure RA GA

Many types of equipment are used during an anaesthetic. We use monitors which give immediate warning of any problems, and anaesthetists have immediate access to back-up equipment. The chance of a serious event due to equipment failure is rare or very rare.

Having a fit RA

Having a fit is very rare and may be caused by injection of local anaesthetic. Your anaesthetist is trained to manage this quickly.

 Death RA GA

Deaths caused by anaesthesia are very rare. There is probably around one death for every 100,000 anaesthetics given in the UK.

Questions you may like to ask your Anaesthetist

1. Who will give my anaesthetic?
2. What type of anaesthetic do you recommend?
3. Have you often used this type of anaesthetic?
4. Will I be unconscious and completely unaware during this type of anaesthetic?
5. What happens if the block does not work and I can feel something?
6. What are the risks of this type of anaesthetic?
7. Do I have any special risks?
8. When will the anaesthetic wear off?
9. How will I feel afterwards?
10. What are the alternatives?

Most of the information in this leaflet has been taken from The Royal College of Anaesthetists (RCoA) leaflets 'You and your anaesthetic', 'Your spinal anaesthetic', 'Anaesthetic choices for hip or knee replacement' and 'Nerve blocks for surgery on the shoulder, arm or hand' and the RCoA risk leaflets and the content has been reviewed by the RCoA.

Further information is available at www.rcoa.ac.uk/patientinfo