

Information for Patients

More information about your Anaesthetic

About this leaflet:

Please read this document only after reading the more basic document 'important information about your anaesthetic' which forms part of the consent process for anaesthesia

This leaflet gives a more detailed explanation of your anaesthetic. You are unlikely to wish to read all of it, but may wish to have detailed information on some specific topics. I hope it will answer most of your questions. However, it cannot cover all questions and you may need to ask the ward staff or contact the anaesthetic department for additional information.

- This leaflet is about the specifics of anaesthesia. It therefore does not contain specific information on preparation for coming to hospital, criteria for discharge or care following discharge.
- This leaflet also does not contain specific information about your surgery.
- The specifics of this leaflet do not apply to children.
- Other leaflets contain specific information on these topics: please request these if you would like more information on these topics.

About anaesthetics and anaesthetists

What is a general anaesthetic?

An anaesthetic is a drug that makes you unconscious for a short time. 'Having an anaesthetic' is the phrase used to describe the controlled medical use of drugs to make a person temporarily unconscious, usually for an operation. Nowadays, during modern anaesthetics, a combination of drugs is used to allow operations to take place and to provide pain relief during and after surgery. Simple or complex combinations of drugs may be used according to the individual needs of you and the type of operation.

Most commonly general anaesthesia is started by having a number of drugs injected into a vein. These drugs makes you unconscious ('send you to sleep'). This is only the beginning of your anaesthetic and these drugs will keep you unconscious for only a few minutes. The anaesthetist will then use more drugs (injections or gases) to keep you

unconscious until the surgeon has finished operating. The anaesthetist will then ensure that you regain consciousness (wake up) a few minutes after the operation has finished.

A 'local' or 'regional' anaesthetic is the use of drugs to make one part of the body numb so an operation can take place. This may be used together with, or instead of, a general anaesthetic. There may be special reasons why one type of anaesthetic is preferred for you.

Who will give the anaesthetic?

The anaesthetic is administered by an anaesthetist. All anaesthetists are qualified doctors. Trained anaesthetists will have undertaken a long period of training and examinations after medical school in a process identical to other hospital doctors and surgeons. Trainee anaesthetists are supervised by trained anaesthetists.

What does your anaesthetist do?

Anaesthetists are doctors who look after you before, during and after your operation: another name for them is 'perioperative physicians'. 'Keeping you asleep' is an important part of their job, but only one small part of it.

First the anaesthetist must ensure that you are fit to have your procedure. The anaesthetist then keeps you safe while you undergo surgery and keeps you anaesthetised. Their other priorities are to make your early recovery from surgery as comfortable as possible and finally to make the surgical conditions as favourable as possible, for the surgeon. As each anaesthetist looks after only one patient at a time, their full attention is directed at you while you are having your operation. He or she works with your surgeon as part of a complementary team.

The anaesthetist and an assistant stay with you throughout your operation and look after all aspects of your care, while you are in the operating theatre. In particular, this includes ensuring you are unconscious and free of pain during surgery. This is done by carefully giving appropriate drugs throughout your operation. The anaesthetist will not allow surgery to start until you are adequately anaesthetised and it is safe to do so.

In broad terms 'having an anaesthetic' encompasses all aspects of your care while you are in the operating theatre: your anaesthetist's roles include:

- checking all is safe before your anaesthesia starts
- anaesthetising you
- managing your airway and breathing
- managing your circulation
- maintaining your temperature
- positioning you for surgery in a manner that protects you from injury but makes surgery easy

- maintaining anaesthesia
- monitoring anaesthesia
- monitoring for physiological changes due to anaesthesia/surgery and ensuring your safety
- giving appropriate individualised fluids according to your requirements
- giving appropriate individualised pain relief and anti-nausea drugs
- ensuring a safe and comfortable process of waking up and recovery from surgery and anaesthesia
- other roles as required in specific circumstances

Overall anaesthesia is a process rather than an action and is about maintaining your safety, physiological stability and comfort during surgery and into the recovery period. The exact details of the process will be individualised to ensure the type of anaesthetic is suitable both for the operation type and for any particular requirements you may have.

After the operation further drugs are made available to treat pain or sickness, if they occur. Anaesthetists are also able to help patients who are not having operations.

Before coming to hospital

Specific instructions given to you (by surgeons, anaesthetists or nursing staff) in other hospital literature should be followed. These are not covered in this pamphlet.

Before your operation

Meeting your anaesthetist: assessing fitness for surgery and anaesthesia

Most patients are admitted on the day of surgery so the visit may not be until shortly before your operation. The anaesthetist will review your notes, ask you some questions and check on blood, X-rays and other tests that have been taken. You may be examined. The anaesthetist will explain what happens in theatre and answer any questions you may have. Occasionally, your operation may need to be deferred if your condition means it would not be safe.

On rare occasions it may not be possible for your anaesthetist to visit you before surgery. If you have specific concerns about your anaesthetic see more information below.

Do I get any choice?

Yes, there may be a variety of aspects of your care where you have choice. Your anaesthetist will discuss the various options that are suitable for your operation, and you should raise any particular preferences you may have. Your anaesthetist will help you

consider those choices that are appropriate for you and advise you of the benefits and risks of each choice. This professional opinion is important and not all of your wishes will necessarily be possible. At the end of the discussion you and your anaesthetist will have agreed a plan for your care. Of course, nothing will be done to you without your permission.

Stopping eating and drinking before your operation

When you are anaesthetised it is important that your stomach is empty. If it is not there is a small risk that stomach contents could pass up your oesophagus (gullet) and enter your lungs. If this were to happen it is a very serious problem and can even put your life at risk. To avoid this you are asked not to eat food (including sweets and chewing gum) for six hours before your operation. You may drink certain clear fluids up to three hours before your operation. Sometimes these periods of time need to be extended in order to allow flexibility in the operating lists. While these times are a general guide please follow the instructions you have specifically been given. If you have queries about this ask your nurse.

Normal medicines before your operation

You should take all your normal medications unless requested not to. The drugs you may be asked to stop before your surgery include **anticoagulants** (blood thinners) and medicines for **diabetes**. If you are taking these drugs you should be given specific instructions by the pre-admissions team.

'Premeds'

The anaesthetist may prescribe drugs for you to take before surgery. This pre-medication ('premed') may include a pain-killer, a drug to reduce sickness or a drug to reduce anxiety. Most premeds are in tablet or liquid form. Occasionally a premed may be given as a suppository (tablet placed in the bottom) or an injection. Modern premeds are unlikely to cause side effects. The pre-med is an important part of your anaesthetic plan: if you have been told by your anaesthetist that you will have a premed and you do not receive it on time please ask your nurse, so it is not forgotten.

Teeth

While you are anaesthetised a tube is placed into your mouth and throat to control your breathing. It is important that the anaesthetist knows about any capped, crowned, loose or damaged teeth you have, so extra care can be taken not to damage them while the tube is positioned. Let the anaesthetist know about any dental work or dental problems you have. Occasionally, even with the greatest of care, teeth and dental work might be damaged. Loose teeth, whether false or your own, may lead to complications during anaesthesia. To reduce these risks you will usually be asked to remove dentures before your anaesthetic. Your teeth can be given back to you as soon as you wake up after your operation.

In the operating theatre

The anaesthetic room and getting ready

When you arrive in the anaesthetic room you will be asked some questions to make sure everyone understands precisely what surgery is planned. Although this can appear tiresome and repetitive it is done for reasons of safety: specifically to eliminate the risk of simple mistakes being made. We use the World Health Organization safe surgery checklist, as recommended throughout the NHS. The anaesthetist will insert a fine tube into a vein, usually in the back of your hand. This should either be painless or very slightly uncomfortable. If you are particularly concerned about this please let your anaesthetist know beforehand and it will normally be possible to put some local anaesthetic gel on the skin to further reduce any pain. All your anaesthetic drugs can then be given through this without the need for more needles. You may feel light-headed, dizzy or sleepy as you are taken into theatre. The anaesthetic usually takes place in the operating theatre, for reasons of safety.

Having a general anaesthetic: 'going to sleep'

Once you are on the operating table and safe the anaesthetic will start. You will be asked to breathe some oxygen from a facemask, which you may hold. The anaesthetist's assistant will put monitors (to measure oxygen levels, heart rate and blood pressure) on you. You may feel light-headed. You may have an odd taste in your mouth. Your hand or arm may feel cold, or occasionally sore. These feelings will last only a few seconds as the anaesthetic starts to work. Once anaesthetised, you will not be aware of anything until after your operation has finished, when you will be woken up.

Staying awake: local anaesthetic techniques

Some operations may take place using a local anaesthetic rather than a general anaesthetic. A local anaesthetic involves making one part of your body 'go numb'. Spinal and epidural blocks involve an injection into the back. Some operations on the hand, arm or shoulder are also performed with local anaesthetic. In these cases an injection is placed in your armpit or neck. These techniques will be discussed with you in detail if there is a plan to use them.

Whatever sort of local anaesthetic technique is used there may be some discomfort while needles are placed in the right place. The anaesthetist will use specialised techniques (ultrasound pictures or electrical stimulation of muscles) to get a clear picture of exactly where to place the needle. When a local anaesthetic technique is used you may be given sedative drugs as well. You may be aware of some sensations while your operation is performed (e.g. touch without pain) even with an effective local anaesthetic, but you should not feel pain and your anaesthetist will stay with you throughout.

Local anaesthetic techniques may also be used to provide pain control after your operation and in this case may be placed before or during your anaesthetic. In general the addition of a local anaesthetic technique adds safety, reduces the dose of general anaesthetic needed and enables a swifter recovery after surgery with less pain. Local anaesthetic techniques may also help operating conditions for the surgeon.

Local anaesthetic procedures may be less safe if you are taking drugs that alter coagulation (clotting): this includes drug such a heparin, warfarin, rivaroxaban, dabigatran or apixaban and others to “thin the blood”. You should let your anaesthetist know if you are taking any of these drugs.

Sedation

Patients having a procedure performed under local anaesthetic may be given sedation to make them more comfortable. Sedation means being made drowsy with drugs. The sensation will be as if you are ‘having a light doze’. Sedation makes procedures more comfortable but does not necessarily remove all sensation or memory of events.

What are monitors?

The anaesthetist checks your condition throughout the operation. This is done in part by the use of machines. Before you are anaesthetised you will have some monitors (heart monitor, oxygen monitor and blood pressure monitor) attached to you. Other monitors are also used once you are anaesthetised (monitoring breathing and depth of anaesthesia in particular). The most important monitor is the anaesthetist. The anaesthetist may use additional monitoring for more complex surgery and for patients whose underlying health is not good.

Waking up

After the operation and anaesthetic have finished you may wake up in the operating theatre or in the recovery room. For reasons of safety your anaesthetist will leave the breathing tube in your mouth at the end of the operation until you are safe and breathing normally. This may involve leaving the tube in until you are fully awake. While most people do not remember this afterwards a small number do. There is no need to panic – breathe normally, open your eyes and the anaesthetist will soon remove the tube.

Where will I go after my operation?

After your anaesthetic most patients are taken to the recovery or ‘post anaesthesia care unit’ (PACU) unit, where a trained nurse will look after you. This nurse will ensure you are safe during the immediate time after surgery and anaesthesia. This includes observing you to detect and treat any problems that arise from your surgery or anaesthetic. While you are in the recovery unit you will be given oxygen through a face-mask. If you have any pain or feel sick this will be treated. It is best to ask for treatment for pain or sickness as soon as you notice it.

Intensive Care and High Dependency Unit

After major operations a few patients need to have specialised care in the Intensive Care Unit (ICU) or the High Dependency Unit (HDU). Some patients who are less healthy may also need to be admitted to the ICU after more minor operations. If ICU or HDU admission is anticipated your anaesthetist will discuss this, and why it is necessary, before your operation. Should the need arise, you will be transferred by

appropriately trained staff. Once there a team of specialised anaesthetists and nurses will look after you.

After the operation

Will I be visited after the operation?

Usually the answer is yes. However some patients (having 'day surgery' procedures) are able to leave the hospital even before the operating list has finished. In this case the anaesthetist will still be busy in the operating theatre. You may wait if you have specific questions you wish to ask.

When you are visited, the anaesthetist will want to make sure that your pain is being well controlled, that you are not feeling sick and that there are no problems following your anaesthetic.

For more major operations, your anaesthetist or a colleague may visit for 48 hours or longer if needed. After this time, once the anaesthetist is happy all is well, it is unusual for the anaesthetist to continue visiting and your further care is then completed by the surgical team. Occasionally you may be referred back to one of the anaesthetists if advice or treatment of a complication is required. However if you wish to speak to your anaesthetist, at any time, please discuss this with your nurse or surgeons.

Is anaesthesia safe? What complications can occur?

Yes anaesthetics are very safe. However no medical intervention is without risk and in this respect anaesthesia is no different from other medical specialties. However, in anaesthesia, perhaps more than in any other field of medicine, training and practice is centred on patient safety. The risk of serious complications from an anaesthetic for a healthy patient is very small indeed. Anaesthesia is, for instance, considerably safer than surgery! For patients who are less healthy, surgery and anaesthesia may be associated with greater risks.

When we describe risk in this document we use the following terms.



General anaesthesia

Common minor complications that may occur after an anaesthetic include:

- Sore or dry throat that usually settles within 24 hours.
- Nausea may be due to surgery or anaesthesia.
- You may have a small bruise at the site of a cannula (drip).
- You may feel light-headed or tired for some time after surgery and anaesthesia.

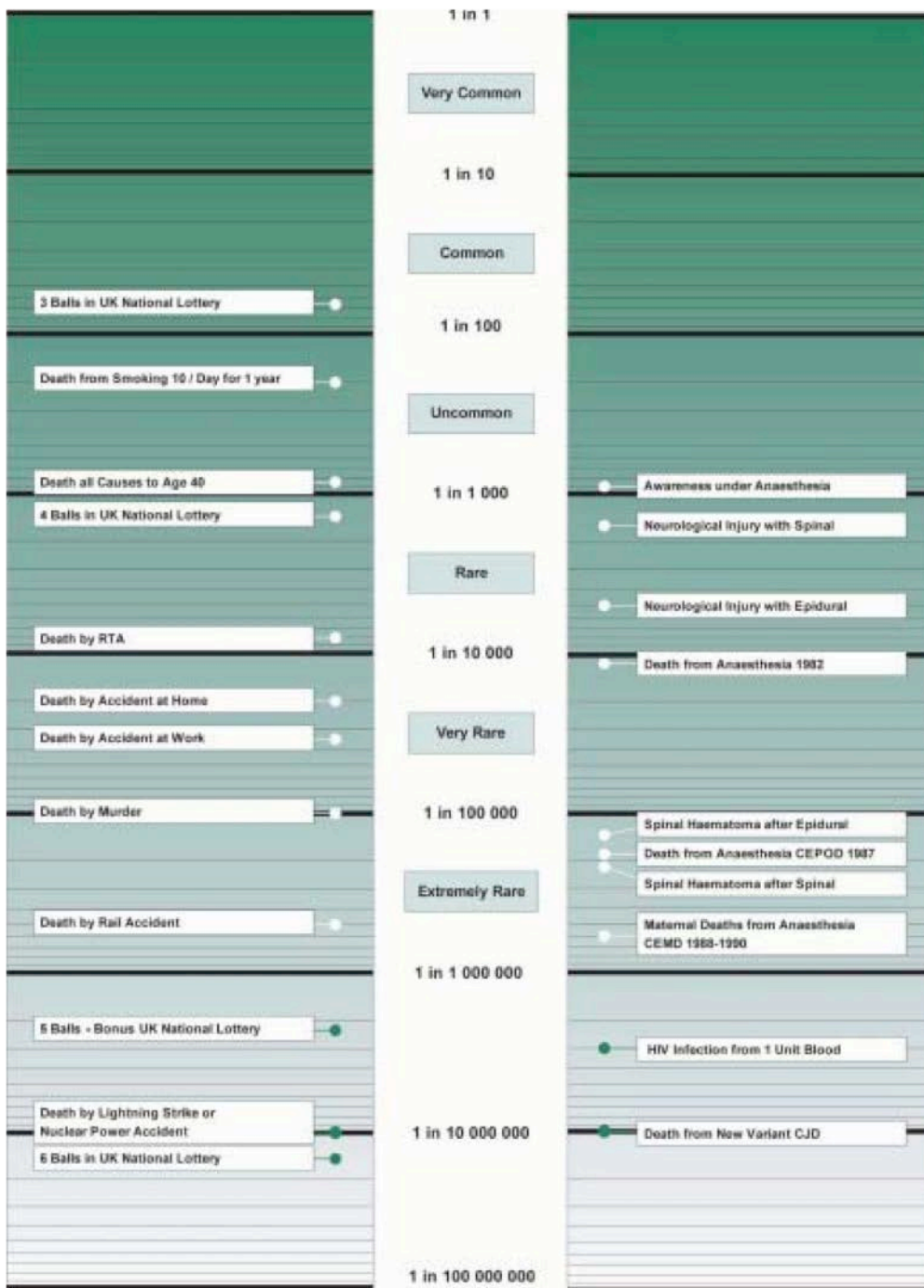
Other complications are rare (occurring less than 1 in 100 cases).

Serious complications are possible, but unusual, and once again are more common for patients who are ill before surgery. Anaesthetists are trained to treat complications if they occur.

- Allergy to anaesthetic drugs is very uncommon and anaesthetists are trained to treat allergic reactions.
- Feeling the operation (an ineffective anaesthetic, also known as 'awareness') is uncommon. Reports of awareness vary between 1 in 600 and 1 in 20,000. The most recent and largest ever study reported that 1 in 20,000 patients reported awareness after general anaesthesia. If this were to happen in most circumstances you would not feel any pain. During the anaesthetic drugs may be used that stop your muscles moving so you would feel unable to move. This would be temporary and would stop at the end of the operation. It is important you let your anaesthetist know if you think this has happened.
- Severe heart or lung disease that exists before surgery may be made worse both by surgery and anaesthesia and in elderly patients such conditions may be revealed by the stress of surgery and anaesthesia.

Any complications that may concern you are best discussed with your anaesthetist before surgery.

The graphic below illustrates how the risks of anaesthesia compare to risks (or 'odds') of non-medical events. The risks of medical problems are estimates only.



‘Local’ and ‘regional’ anaesthesia

Local anaesthetic techniques are very safe. Complications are uncommon. The area numbed or anaesthetised by the nerve block will feel weak and you may not be able to move it for many hours.

- The commonest problem with nerve blocks is that occasionally they do not work fully. This occurs in about one in 100 spinal anaesthetics, 1 in 20 epidural

anaesthetics, and 1 in 10 arm or leg blocks. It is important you tell the anaesthetist if you think a local anaesthetic block is not working. If this happens the anaesthetist will ensure you are comfortable by other means.

- Bruising after local anaesthetic blocks is usually minor.
- Headaches affect up to 1 in 100 patients after spinal and epidural anaesthetics and can be severe particularly in younger patients. In middle aged and older patients this is much less common.
- Temporary areas of numbness or mild weakness after a nerve block occur in about 1 in 50-100 cases (depending on the area blocked).
- Permanent problems occur rarely. Permanent major problems (such as permanent areas of weakness, numbness, pain or paralysis) occur about
 - 1 in 50,000 times after a spinal anaesthetic
 - 1 in 6,000-12,000 times after an epidural anaesthetic
 - <1 in 5,000 after an arm or leg block

In less healthy patients the benefits of local anaesthetic techniques are likely increased, but the risk of complications is also increased.

Pain relief

All operations that require cutting of the body may cause pain. However with modern methods of pain relief you should expect to have little more than mild pain after most operations. This will allow you to start returning to normal activities as soon as possible after surgery. Good pain control can only be achieved by administering pain-killers during and after surgery. Several drugs may be used and may be given by specialised techniques (intravenous patient controlled analgesia 'PCA', epidural, spinal routes). A separate booklet covering these forms of pain relief is available.

After surgery some pain-killers are given regularly, but some will only be given to you if you ask for them. In this case it is important that you tell the nurse looking after you as soon as you have pain that you would like to be treated. This will help the nursing staff to give you pain-killers early enough to prevent your pain getting worse. If the nurses do not know you have pain they cannot treat it. There is no known advantage to being in pain after an operation.

This applies to all patients including those who are in 'enhanced recovery programs'

Nausea and vomiting

Anaesthetists are well aware that nausea and vomiting are particularly unpleasant and your anaesthetist will make efforts to minimise the risk of these symptoms after surgery. Nausea and vomiting may be due to many factors which include your operation, your anaesthetic or others such as antibiotics the surgeon has prescribed. Some people are particularly sensitive and if you have felt sick after a previous operation, or suffer from motion sickness you should tell your anaesthetist. Women and non-smokers are at a higher risk of feeling sick after surgery. If you are concerned about this in any way, please discuss it with your anaesthetist. The anaesthetist can then use anaesthetic techniques that minimise the likelihood of nausea and vomiting.

If you do feel sick after your operation, drugs will be available to treat this. As with pain, the sooner you let your nurse know about this problem the sooner it can be treated. If you would like something to help with sickness please ask your nurse.

Other topics

Children

Anaesthesia for children is a subject in its own right. However the principles of anaesthesia for adults and children are the same. It is usual for one (only one) parent to accompany a child (with the nurse) to the anaesthetic room. Please remember this is so you can provide support for your child until they are anaesthetised. The anaesthetist has your child's safety as their prime concern, at all times. In emergencies and in some other situations you may not be able to stay, and you will be asked to leave before your child has their anaesthetic. This is done only when it is in your child's interests. It is important that when you accompany a child to the anaesthetic room you do exactly what the anaesthetist asks and leave when instructed. Some parents find the prospect of being in the anaesthetic room frightening. If this is so, it is important to discuss this with your anaesthetist.

Children may be anaesthetised with an injection into a vein or by breathing gases through a mask. If an injection is used, a local anaesthetic cream ('magic cream') will be placed on your child's hand before coming to theatre, to reduce any pain, whenever this is possible. This cream is very effective and can start to work after as little as 5 or 10 minutes, though it needs about 20 minutes to be fully effective. It often causes a little reddening of the skin where it is applied but this soon returns to normal, once it is removed. If your child is under the age of 4-5 you may be asked to hold them on your lap as they go off to sleep. Your child will often wriggle as the anaesthetic starts to work: hold them tight! It is important to do as the anaesthetist asks. If you think this might be too upsetting or difficult for you, please let your anaesthetist know when they visit, before coming to the operating theatre.

Distraction methods such as books, toys and video games may be used in the anaesthetic room to make the anaesthetic process smoother for your child. Simple games on an i-pad are a very effective and popular way to distract and relax children in the anaesthetic room and are often used in this hospital.

If your child has a favourite toy or 'comfort' we encourage you to bring that to the anaesthetic room.

In most situations your child will be anaesthetised in the anaesthetic room. In some circumstances (very young children, older children and for emergencies) it may be necessary to anaesthetise your child in the operating theatre for reasons of safety. If this is the case you will be able to come to the anaesthetic room and say goodbye there.

After the operation your child will be taken to the recovery area. The nurses will call you to recovery as soon as possible after your child wakes up. The anaesthetist makes every effort to ensure that your child can wake up without pain or sickness after their operation. If necessary the specially trained nurses in recovery will treat any pain and nausea as rapidly as possible. Children are often disorientated after an anaesthetic and may be distressed because of this, even if they have no pain. Your calm presence in the recovery area is often very helpful for this.

Where necessary, painkillers will be prescribed for your child to take both in hospital and at home. These may be given regularly or just when needed.

The elderly

Elderly patients require special care when undergoing surgery and anaesthesia. This is because ageing itself increases the risks of surgery and anaesthesia. In addition medical conditions that the elderly are more likely to have (e.g. high blood pressure, heart disease, chest disease, kidney disease and diabetes) also increase risks. These risks affect major surgery more than minor surgery.

Anaesthetists are trained in looking after elderly patients.

In addition to the risks described above elderly patients are more likely to become disoriented or confused after surgery and anaesthesia and when taking pain-killers. This is usually temporary, but occasionally can be more long lasting. Your anaesthetist will give a suitable anaesthetic to minimise the risk of this.

Obesity

Obesity is defined by having a body mass index: weight in kg/(height in metres x height in metres), above 30 kg/m².

Examples would include:

- Someone 5 feet tall and weighing >10½ stone
- Someone 5 foot 6 inches and weighing >13 stone
- Someone 6 feet tall and weighing >15½ stone

Obesity is increasing in the UK to epidemic proportions.

Obesity increases the technical difficulty of both surgery and anaesthesia and obese patients therefore generally require longer operations. They may have other medical conditions as a result of obesity (e.g. diabetes, high blood pressure, sleep apnoea). All these factors lead to a significant increase in risks when obese patients have surgery and anaesthesia. As well as a generalised increase in risk, obese patients have a higher risk of some specific complications such as low oxygen levels after surgery, breathing and heart problems and blood clots in the legs or lungs.

If you are obese your anaesthetist will modify your anaesthetic to reduce these risks where this is possible, but obesity means some risks remain elevated. The extent of this increase in risk is largely related to the degree of obesity. Losing weight before surgery

is of course difficult, but it does reduce these risks, making surgery and anaesthesia safer for you.

Cancellations

One of the reasons having an anaesthetic is very safe is because anaesthetists take special care to ensure all risks are minimised. Your anaesthetist's main role is to consider your safety before, during and after the operation. Occasionally, medical issues will arise or be discovered shortly before your operation. Sometimes these problems will be detected in the tests you had before the day of surgery. Some problems need correction before it is safe to undertake your operation. It is your anaesthetist's responsibility to ensure you are as fit as possible before you have your operation; if you are not, the operation may have to be delayed. These 'cancellations', for medical reasons, are avoided unless necessary and are very uncommon. They are done only for your safety.

Research

Like all doctors, anaesthetists are involved in research, which aims to improve the quality and safety of the service we provide to patients. It is only through such research that improvements in patient care can be made. The anaesthetic department in Bath runs many research projects and is one of the more research-active anaesthetic departments in the country. You may be invited to take part in a research project, if you happen to be suitable. However you will not be involved in research unless you have given specific written consent. You will only be asked to give such consent after an explanation of the study. Be reassured your involvement in such research is entirely voluntary: if you do not wish to be involved in such research you should say no, and do not need to give any reason. Whether you decide to be involved in research or not will not affect other aspects of your medical care.

More information

You may obtain more general information from your general practitioner before you arrive in hospital, or from the nurse looking after you on the ward. Further specific information can be obtained by ringing the Department of Anaesthesia (see below). If you have access to the internet the following websites may be helpful:

- <http://www.rcoa.ac.uk/patients-and-relatives> (Royal College of Anaesthetists). This website includes a vast amount of information about specific procedures, anaesthetic techniques, risks and options. There is a wealth of information at <http://www.rcoa.ac.uk/patientinfo>. It is highly recommended and the following are only a sample of topics covered
- You and your anaesthetic <http://www.rcoa.ac.uk/document-store/you-and-your-anaesthetic>
- Spinal anaesthesia <http://www.rcoa.ac.uk/document-store/your-spinal-anaesthetic>

- Anaesthesia choices for hip and knee surgery <http://www.rcoa.ac.uk/document-store/anaesthetic-choices-hip-or-knee-replacement>
- Epidurals for pain relief after surgery <http://www.rcoa.ac.uk/document-store/epidurals-pain-relief-after-surgery>
- Detailed information on specific risks <http://www.rcoa.ac.uk/patients-and-relatives/risks> (a series of leaflets and documents providing more detail)
- Children's anaesthesia: a section dedicated to this topic <http://www.rcoa.ac.uk/childrensinfo>

Other sites

- www.aagbi.org (Association of Anaesthetists of Great Britain and Ireland)
- www.patients-association.com (Patients Association)

Contacting the Anaesthetic Department

The Anaesthetic Department can be contacted, be it for information, to complain or to congratulate! Please write to the department co-ordinator, Department of Anaesthesia, Royal United Hospital, Combe Park, Bath BA1 3NG, phone 01225 825056/7.

Difficulty reading?

If this information sheet is difficult for you to read we can arrange to provide you with a leaflet in larger type or a tape of the contents. Please contact the anaesthetic department co-ordinator.

Dr Tim Cook, Consultant Anaesthetist
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