Royal College of Anaesthetists

Association of Anaesthetists

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Patient Information Forum

# Your anaesthetic for major surgery

## With planned high dependency or intensive care afterwards

This leaflet is for anyone expecting to have a major operation who has been informed that they are likely to need to stay in the high dependency unit (HDU) or intensive care unit (ICU) after their surgery. It has been written by anaesthetists with the help of patients and patient representatives.

### Introduction

This booklet contains information about what will happen before the operation, the different anaesthetic and pain relief options, and what to expect as you recover in the high dependency or intensive care unit.

### What is anaesthesia?

**An anaesthetic** stops you feeling pain and unpleasant sensations. It can be given in various ways and does not always need to make you unconscious.

There are different types of anaesthesia, depending on the way they are given:

- **local anaesthetic** involves injections that numb a small part of your body. You stay conscious but free from pain
- **regional anaesthetic** (a spinal or epidural) involves injections that numb a larger or deeper part of the body. You stay conscious or receive some sedation, but are free from pain, although you may be aware of pressure or tugging sensations
- **general anaesthetic** gives a state of controlled unconsciousness. It is essential for some operations and procedures. You are unconscious and feel nothing
- **sedation** gives a 'sleep-like' state and is often used with a local or regional anaesthetic. Sedation may be light or deep and you may remember everything, something or nothing after sedation.

For more information about sedation, please see our *Sedation explained* leaflet which is available on our website: rcoa.ac.uk/patientinfo/sedation

### Anaesthetists

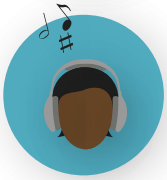
Anaesthetists are doctors with specialist training who:

- discuss with you the type or types of anaesthetic that are suitable for your operation. If there are choices available, they will help you choose
- discuss the risks from anaesthesia with you
- agree a plan with you for your anaesthetic and pain control afterwards
- give your anaesthetic and are responsible for your wellbeing and safety throughout your surgery and in the recovery room.

You may also meet Anaesthesia Associates who are highly trained healthcare professionals. You can read more about their role and the anaesthesia team on our website: rcoa.ac.uk/patientinfo/anaesthesia-team

# Before the operation

If you are having planned surgery, there is much you can do to prepare ahead of the operation.



- If you smoke, giving up as far ahead of the operation as possible will reduce the risk of breathing problems during your anaesthetic and after your surgery.
- If you are overweight, reducing your weight will reduce many risks from having an anaesthetic and improve your recovery from the operation. You may be put on to a specific diet in the weeks before some types of surgery.
- 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, you should check with your GP surgery whether there is anything you should do to improve these.
- Increasing your activity in the weeks before surgery can improve your heart function and fitness levels. Studies have shown this can make a big difference to your recovery from major surgery.
- It is best to plan early for your recovery at home afterwards and let your friends and family know how they can best help you. Think about whether you need to make any changes at home to make your recovery easier.
- It is important to think how you might want to pass the time on the day of the operation, as you may have to wait before your surgery. Magazines, puzzles or listening to music through headphones can all help you to relax.

Our Fitter Better Sooner resources will provide you with the information you need to become fitter and better prepared for your operation. Please see our website for more information: rcoa.ac.uk/fitterbettersooner

# The preoperative assessment clinic (pre-assessment clinic)

You will usually be asked to come to a preoperative assessment clinic a few weeks before your operation. It is useful to bring a family member or friend along to support you. Please bring with you:

- a current prescription or bring your medicines in their normal packaging
- any information you have about tests and treatments at other hospitals
- information about any allergies or problems you or your family may have had with anaesthetics
- any recent blood pressure measurements.

A nurse will ask you detailed questions about your health and activity levels.

- Blood tests, an ECG (heart tracing) and sometimes other tests will be done or be requested. You may be asked to do CPET (cardiopulmonary exercise testing) on an exercise bike to look at how well your heart and lungs work at rest and during exercise. This can be used to help predict how well your body will cope with the surgery and recovery. It will help doctors to decide on the risk of the surgery for you and whether you need to recover in the ICU or HDU.

- An anaesthetist may talk to you about the anaesthetic and the risks specific to you. If this is not offered and you want to talk to an anaesthetist, you should ask for this to be arranged.
- If you have other medical conditions (for example diabetes, asthma, high blood pressure or epilepsy), the staff in the clinic will ask you about them. If they can be improved, you may be asked to see other specialists or your own GP. Changes to your treatment may sometimes be necessary. Occasionally your operation may need to be delayed until your health is improved.
- The nurse will give some information about what happens before, during and after the operation. This is a good time to ask questions and discuss any concerns.
- You will be given clear instructions about when to stop food and drink before your operation. It is important to follow this advice. If there is food or liquid in your stomach during your anaesthetic, it could come up into your throat and enter your lungs.

- You should also be given instructions about any medicines you take, and whether you should continue to take them up to the day of your surgery.

### Thinking about the risks

Your surgeon and anaesthetist can give you information about what they think the risks and benefits from the operation are for you. They can also tell you the risks from not having the operation, and from any alternative treatments. In some cases your doctors may suggest that an operation is too risky and unlikely to be successful.

Everyone varies in the risks they are willing to take. Your doctors will explain the risks to you, but only you can decide whether to go ahead and have the operation. Nothing will happen until you understand and agree with what has been planned for you. You have the right to refuse if you do not want the operation.

# On the day of the operation

It is essential that you carefully follow instructions you have been given about eating, drinking and taking your medicines or tablets.

## Meeting your anaesthetist

Your anaesthetist will meet you before your operation. An anaesthetist is a doctor who has had specialist training in anaesthesia, in the treatment of pain, and in the care of patients in the ICU. They may:

- ask you again about your health, and clarify or confirm information that has been recorded in the pre-assessment clinic
- review your test results
- listen to your heart and breathing
- look at your neck, jaw, mouth and teeth.

The anaesthetist will talk to you about your anaesthetic, any additional procedures that may be required to help look after you during the operation and discuss methods of pain relief. They will be able to answer your questions and discuss any worries that you have.

### Questions you may like to ask your anaesthetist

- Who will give my anaesthetic?
- Which type of pain relief do you recommend?
- Are there alternatives to this type of pain relief?
- What are the risks of this type of anaesthetic?
- Do I have any special risks?
- How will I feel afterwards?
- How long will I stay in the HDU or ICU?
- What specialist treatments will I need in HDU or ICU?

## Getting ready for the operation

- You will be asked to change into a theatre gown and may be measured for compression stockings. Wearing these help prevent blood clots forming in your legs.
- You may have further blood tests.
- A member of staff will complete a checklist and escort you to theatre. You will either walk to theatre or use a wheelchair or trolley.
- If you have glasses, hearing aids or dentures, you can wear them to go to the operating theatre. You will need to remove them before the anaesthetic begins so that they are not damaged or dislodged.

## The operating department ('theatre')

When you arrive in the theatre area, members of staff will confirm your identity, the operation you are having, and any allergies you have. If you have any questions or concerns, you should tell a staff member.

- Your anaesthetist, healthcare professionals helping the anaesthetist and theatre nurses will be there to look after you. There may also be anaesthetists in training and medical students present.
- Machines are connected that continuously monitor your heart rate, blood pressure and oxygen levels. Sticky pads on your chest will connect you to the heart monitor, and a small clip on your finger or earlobe is used to measure the oxygen level in your blood.
- The anaesthetist will use a needle to insert a cannula (thin plastic tube) into a vein on the back of your hand or forearm. This is used to give you medicines and fluids (a 'drip') during the operation.
- Depending on the type of surgery, and on your general health, the anaesthetist may insert another cannula into an artery at the wrist. Local anaesthetic in the skin will be used first to make this more comfortable. This cannula is called an arterial line. It allows your blood pressure to be measured continuously and can also be used for further blood tests during the operation.
- If you are having a spinal anaesthetic or an epidural for pain relief, this will usually be done before you have the general anaesthetic.

When all of the preparations have been completed, the anaesthetist will give you oxygen to breathe through a mask, while slowly injecting anaesthetic drugs into your cannula. From this point, you will not be aware of anything else until the operation is finished.

After you are anaesthetised, for some surgery you may also have:

- a breathing tube placed into the trachea (windpipe) through your mouth
- a larger cannula placed into a vein in your neck, under the collarbone, or in the groin. This is called a central venous pressure line. It is used to give fluids, to measure pressures and/or to give medicines to control your blood pressure during the operation and afterwards

- an ultrasound probe inserted into the oesophagus (gullet or food pipe) via the nose or mouth. This helps the anaesthetist to assess how much fluid to give you and can monitor your heart function
- a tube passed through the nose into your stomach which keeps your stomach empty during the operation and afterwards
- a tube passed into your bladder (a catheter) which keeps the bladder empty. It is also used to measure the amount of urine that your kidneys produce during the operation and afterwards during the operation and afterwards.

## Blood transfusion

Blood transfusion is a possibility during all major surgery. Blood is only given if absolutely necessary. If you do not wish to have a blood transfusion you must discuss this with your doctors well before the day of your operation.

You can find out more about blood transfusion and any alternatives there may be by asking your anaesthetist beforehand. Or you can visit the NHS Blood services website: nhsbt.nhs.uk/what-we-do/blood-services/blood-transfusion

## Pain relief

Good pain relief is important. It makes you feel better, helps you to recover more quickly, and may reduce the chance of some complications:

- If you can breathe deeply and cough well after your operation, you are less likely to develop a chest infection.
- If you can move your legs and walk, you are less likely to get blood clots (deep vein thrombosis or DVT) in the legs or elsewhere.

You will be given regular pain relief either as a tablet or liquid by mouth, or into your cannula. It may be appropriate for you to have one or more of the following forms of pain relief, which your anaesthetist will discuss with you.

### An epidural

Your anaesthetist uses a needle to insert a fine plastic tube between the bones of your back. This is usually done before you go to sleep. Local anaesthetic is given through this tube during the operation, and for a few days afterwards. Your chest, abdomen and legs may feel numb while the epidural is being used, and your legs may not feel as strong as normal. This is to be expected while the epidural is working and will return to normal when the local anaesthetic wears off.

### A spinal anaesthetic

Local anaesthetic is injected through a needle placed between the bones in your lower back to numb the nerves from the waist down to the toes. The numbness usually lasts between two and four hours. A longer acting pain relief medicine may also be injected, which may last for 12 hours or more.

For more information about the side effects and complications of epidurals and spinals, please see information on our website: rcoa.ac.uk/patientinfo and rcoa.ac.uk/patientinfo/risks/risk-leaflets

### Patient-controlled analgesia (PCA)

This is a form of pain relief that you control yourself. A pump containing a syringe of morphine (or similar) is connected to your cannula. You are given a handset with a button that activates the pump. When you press the button, a small dose is given. The pump has safety settings to prevent you accidentally getting too much.

### Wound catheters

Local anaesthetic is administered into the area around your wound via one or more small plastic tubes. The aim is to produce a numb area around the wound. The surgeon or anaesthetist places these tubes during the operation. They are connected to a pump that continuously delivers local anaesthetic. Wound catheters can stay in place for several days after your operation.

For some people, the planned form of pain relief may need to be altered after the operation.

- Some people need more pain relief than others or respond differently to pain-relieving drugs. Feeling anxious can increase the pain people feel.
- If you have pain, the dose of pain relief you are prescribed can be increased, given more often, or given in different combinations.
- Occasionally, pain is a warning sign that all is not well, so you should tell the staff looking after you if you are in pain.

# After the operation

Most people will wake up in the recovery area after surgery. A recovery nurse will be with you at all times. Some people may go straight to ICU.

They will:

- monitor your blood pressure, oxygen levels and pulse rate
- give you oxygen through a mask or soft plastic prongs placed inside the nose
- assess your pain level and give you more pain-relief if necessary
- give you anti-sickness drugs if you feel sick
- cover you with a warming blanket if you are cold
- return your dentures, hearing aids and glasses when you are awake.

If you have had an epidural for pain relief, the recovery nurse will check to see how effective it is. If you are uncomfortable, your anaesthetist can adjust the epidural or give you additional pain relief.

## Intensive or high dependency care (ICU or HDU)

When you are awake and comfortable, you will be moved from the recovery area to the ICU or HDU, where you will receive additional close monitoring and specialist treatment if required.

Occasionally, it is necessary to continue the anaesthetic after the operation has finished for a few hours, or until your condition is stable. If you need this type of care, your anaesthetist will take you straight to the ICU after your surgery. The anaesthetic will continue and a ventilator (breathing machine) will be used to control your breathing. When your condition allows, the ICU team will allow you to breathe for yourself and you will gradually wake up.

On the HDU or ICU, you will be looked after by doctors, nurses, physiotherapists and dieticians who specialise in high dependency and intensive care. They work closely with your surgical team to ensure that your recovery is proceeding well. As your recovery continues, you may be moved from the ICU to the HDU.

You may have your own nurse, or one nurse who looks after two patients. They will ensure that you are comfortable and give prescribed medicines to control sickness and prevent blood clots. Some of the medicines that you were taking at home may be stopped or changed to help your recovery. Initially you will probably need a drip to give fluids into your veins, but your nurse will encourage you to drink and eat as soon as you are able as this helps your recovery.

In ICU or HDU, your heart rate, blood pressure, breathing, and kidney function will be closely monitored. You may also have blood tests, x-rays or scans to check on your progress or diagnose any problems. As your recovery progresses, you will need less monitoring, and some of your drips, tubes and monitors will be removed.

The nurses and physiotherapists will teach you regular breathing exercises. It is very important that you can breathe deeply and cough effectively throughout your time on ICU or HDU. This will help to avoid a chest infection.

The physiotherapists will also help you get out of bed and moving as soon as possible. This helps your breathing exercises. Moving and walking are particularly important to maintain your muscle strength, improve the circulation in the legs and to enhance your wellbeing.

You will be able to have visitors while on ICU or HDU. Your nurse will be able to advise you on visiting times and the number of visitors allowed. You may be looked after in an area where there are other patients who are very ill. It may not be suitable for young children to visit and, if there is a lot of activity, there may be a need to restrict visiting temporarily.

## Back to the ward

When the team looking after you are satisfied that you are recovering safely, you will return to the surgical ward.

The length of time that you spend in ICU or HDU will depend on what type of operation you have had, any complications, and any other health problems you may have.

# What are the risks?

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


| Very common | Common | Uncommon | Rare | Very rare |
|---|---|---|---|---|
| **1 in 10** | 1 in 100 | 1 in 1,000 | 1 in 10,000 | 1 in 100,000 |
| One person in your family | One person in a street | One person in a village | One person in a small town | One person in a large town |

### The operation

The risks from your operation depend on the type of surgery you are having, your general fitness, and any other health problems you have. Thinking about these risks may cause you some concern, but it is important to compare them to the consequences of not having the operation. Your surgeon and anaesthetist will be able to help you compare these risks, depending on your individual circumstances.

### The anaesthetic

There are some complications or events that are related to the anaesthetic itself. Some of these occur quite commonly, but are generally minor or short lived. Serious complications occur, but these are uncommon or rare.

- Common events include: feeling sick and vomiting, a sore throat, shivering, itching, soreness at drip sites, developing a chest infection, and temporary periods of confusion.
- Uncommon complications include: breathing difficulties at the end of the anaesthetic, damage to teeth, pre-existing medical problems getting worse, and awareness during anaesthesia.
- Rare and very rare complications include: damage to the eyes, serious allergy to drugs, and nerve damage. Death caused directly by anaesthesia is extremely rare, and is estimated to occur in 1 in 100,000 anaesthetics in the UK.

## More information

Your anaesthetist will be able to discuss with you if you have any specific risks compared to standard risks listed.

For more detail on individual risks in anaesthesia and a summary of common events and risks, please see the information available on our website: rcoa.ac.uk/patientinfo/risks/risk-leaflets

### Additional sources of information

You can find more information leaflets on the College website: rcoa.ac.uk/patientinfo
The leaflets may also be available from the anaesthetic department or pre-assessment clinic in your hospital.

The Intensive Care Society has useful resources for patients and carers on intensive care: members.ics.ac.uk/ICS/patients-and-relatives.aspx

## 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

## Information for healthcare professionals on printing this leaflet

Please consider the visual impairments of patients when printing or photocopying this leaflet. Photocopies of photocopies are discouraged as these tend to be low quality prints and can be very difficult for patients to read. Please also make sure that you use the latest version of this leaflet, which is available on the RCoA website: rcoa.ac.uk/patientinfo/leaflets-video-resources

# Tell us what you think

We welcome suggestions to improve this leaflet. Please complete this short survey at: surveymonkey.co.uk/r/testmain. Or by scanning this QR code with your mobile:

If you have any general comments, please email them to: patientinformation@rcoa.ac.uk

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