



The Royal College of  
Anaesthetists



The Association of  
Anaesthetists of Great  
Britain and Ireland

# Your anaesthetic for major surgery with planned high dependency care or intensive care afterwards

Information for patients and families

[www.rcoa.ac.uk/patientinfo](http://www.rcoa.ac.uk/patientinfo)

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This leaflet is for anyone expecting to have a major operation who has been informed that care on the High Dependency Unit (HDU) or Intensive Care Unit (ICU) is planned after the operation finishes. It has been written with the help of patients who have experienced this kind of operation.

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

The website includes the following:

- Anaesthesia explained (a more detailed booklet)
- You and your anaesthetic (a shorter summary)
- Your spinal anaesthetic
- Epidural pain relief after surgery
- Anaesthetic choices for hip or knee replacement
- Local anaesthesia for your eye operation
- Your child's general anaesthetic
- Your anaesthetic for a broken hip
- Brachial plexus block for surgery and pain relief

### **Risks associated with your anaesthetic**

This is a collection of 14 articles about specific risks associated with having an anaesthetic or an anaesthetic procedure. It supplements the patient information leaflets listed above and is available on the website: [www.rcoa.ac.uk/patients-and-relatives/risks](http://www.rcoa.ac.uk/patients-and-relatives/risks).



Throughout this leaflet and others in the series, we have used this symbol to highlight key facts.

## Introduction

This booklet gives information about your anaesthetic for a major operation with a planned stay in the high dependency unit (HDU) or intensive care unit (ICU) afterwards. It contains information about what will happen before the operation, the different anaesthetic and pain relief options, and what to expect in the high dependency or intensive care unit.

People are different in how much they want to know before an operation. Some basic information is given here. The team in the pre-assessment clinic, and your anaesthetist on the day of your operation can give you more detailed information, tailored to your individual circumstances.

## The pre-assessment clinic

You may be asked to come to a pre-assessment clinic a few days or weeks before your operation. An up-to-date health check is needed, together with several tests. You can ask any remaining questions that you have. If the nurses and doctors in the clinic cannot answer all your questions, they can help you find out from others.

- A nurse or doctor will ask you questions about your health.
- Blood tests, an ECG (heart tracing) and sometimes other tests may be requested.
- An anaesthetist may see you. He/she will talk to you about the anaesthetic. If you particularly want to talk to an anaesthetist, you should ask for this to be arranged.
- If you have other medical conditions (such as diabetes, asthma, chronic bronchitis, 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 be necessary. Occasionally your operation may 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 worries.
- 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 the back of your throat and damage your lungs.
- You should also receive 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 of the operation are for you. They can also tell you the risks of not having the operation, and of any alternative treatments.



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.

## Getting fit for your operation

It is important to prepare well for the operation. There are some things you can do to improve your health before surgery.

### Smoking

If you smoke, you are strongly advised to stop. The longer you can give up for, the better.

- If you can stop smoking for a day or two before your operation, your blood cells are able to carry more oxygen around your body.
- If you can stop smoking for about six weeks before you come into hospital you are less likely to get a chest infection after the operation.

### Alcohol

If you are used to drinking a lot of alcohol, it is helpful to reduce the amount that you drink. Alcohol can reduce the function of your heart and it also causes mild dehydration. Also, stopping the high alcohol intake suddenly when you come into hospital can cause serious health problems, so it is better to cut down.

### Losing weight

If you are overweight, there is an increase in some of the risks of the anaesthetic and the operation. Losing weight can reduce these risks.

### Exercise

Regular exercise will increase your strength and fitness. There is no need to push yourself – a regular walk at your own pace can boost your stamina.

### Eating well

It can be an anxious time waiting for your operation. However a good healthy diet in the days leading up to the operation is important for a faster recovery.

## On the day of your operation

### Before you arrive



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 see 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 intensive care unit. He/she 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 and methods of pain relief. He/she will be able to answer your questions and discuss any worries that you have.

### Getting ready for the operation

- You will be asked to change into a theatre gown, and may be measured for compression stockings. 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 ('theatres')

When you arrive in the theatre area, members of staff will confirm your identity, the operation you are having, and any allergies you have.

- Your anaesthetic may begin in an anaesthetic room or sometimes in the operating theatre itself.
- Your anaesthetist, an operating department practitioner (also called ODP – a person trained to help the anaesthetist) and theatre nurses will be there to look after you. There may also be anaesthetists in training and medical students.

### Your anaesthetic

- It may take 30 or 40 minutes of preparation before the anaesthetic itself begins.
- Machines are connected to you that continuously monitor your heart rate, blood pressure and oxygen levels. Sticky pads on your chest are attached to the heart monitor, and a small peg on your finger or earlobe measures 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 reduce the pain of this. This cannula is called an **arterial line**. It allows your blood pressure to be measured continuously, and it is also 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, whilst slowly injecting anaesthetic drugs into your cannula. From this point, you will not be aware of anything else until the operation is finished.

While you are anaesthetised, 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, or a vein under the collarbone, or a vein in the groin. This called a central venous line. It is used to give fluids, to measure pressures and/or to give medicines to control your blood pressure
- a small 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
- a tube passed through the nose into your stomach which keeps your stomach empty
- 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.



### **Blood transfusion**

Blood transfusion is a possibility during all major surgery. Blood is only given if absolutely necessary.

You can find out more about blood transfusion and any alternatives there may be by asking your anaesthetist beforehand. Or you can visit

[www.blood.co.uk/information-for-patients/blood-transfusion](http://www.blood.co.uk/information-for-patients/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 easily after your operation, you are less likely to develop a chest infection
- if you can move around freely, 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 medicine, 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 whilst 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 three 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 the website

[www.rcoa.ac.uk/patientinfo](http://www.rcoa.ac.uk/patientinfo).

## **Patient-controlled analgesia (PCA)**

This is pain relief which 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 which activates the pump. When you press the button, a small dose of morphine is given. The pump has safety settings to prevent you accidentally getting too much.

## **Wound catheters**

Local anaesthetic is administered into your wound via one or more small plastic tubes. This should give a numb area around the wound. The surgeon places the tubes during the operation. They are connected to a pump that continuously delivers local anaesthetic. Wound catheters can stay in 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 pain relief 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 your operation

## Recovery

Most people will wake up in the recovery area after surgery. A recovery nurse will be with you at all times.

He/she will:

- monitor your blood pressure, oxygen levels and pulse rate
- give you oxygen through a mask, or through soft plastic prongs placed inside the nose
- assess your pain level and give you more pain-relief drugs 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.

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

When you are awake and comfortable, you will be moved from the recovery area to the Intensive Care Unit (ICU) or High Dependency Unit (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, you will not go to the recovery area. Your anaesthetist will take you to the ICU. 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.

You may have your own nurse, or one nurse looks after two patients. He/she 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. If you are worried about this, speak to your nurse.

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 avoid a chest infection.

The physiotherapists will also help you get out of bed as soon as possible. This helps your breathing exercises. Also, walking maintains your muscle strength, improves the circulation in the legs and enhances wellbeing.

You will be able to have visitors whilst 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?

## The operation

The risks of 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 worry, 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 side-effects 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 complications and side-effects 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 200,000 anaesthetics in the UK.

## More information

Your anaesthetist or the nurses and doctors looking after you will be happy to answer your questions.

Other written information is available from [www.rcoa.ac.uk/patientinfo](http://www.rcoa.ac.uk/patientinfo).

## Questions you may like to ask your anaesthetist

- 1 Who will give my anaesthetic?
- 2 Which type of pain relief do you recommend?
- 3 Are there alternatives to this type of pain relief?
- 4 Are there any choices I can make about the drips or tubes that you have recommended? Any alternatives?
- 5 What are the risks of this type of anaesthetic?
- 6 Do I have any special risks?
- 7 How will I feel afterwards?
- 8 How long might I stay in the HDU or ICU?
- 9 What specialist treatments might I need in HDU or ICU?

### Tell us what you think

We welcome suggestions to improve this leaflet. You should send these to:

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

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