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 explains what to expect when having an anaesthetic for major surgery with a stay in the higher dependency unit (HDU) or intensive care unit (ICU) afterwards. It has been written by anaesthetists with the help of patients and patient representatives.

It should be read together with the leaflet **You and your anaesthetic** which you can find on our website here: rcoa.ac.uk/patientinfo/leaflets-video-resources

Contents

This leaflet explains:

- about staying in the ICU or HDU after surgery
- what happens before the operation
- how to prepare for surgery
- what happens on the day of the operation
- what happens after the operation
- how to discuss risks and options with your anaesthetist
- where to find more information.

This leaflet does not cover the different types of anaesthetics. For this, please read the leaflet **You and your anaesthetic**: rcoa.ac.uk/patientinfo/leaflets-video-resources

Major surgery and intensive care

Intensive care and high dependency units are special wards that look after patients who are critically ill. After major surgery some patients will be taken to an ICU or a HDU where they will be closely monitored by specially trained nurses and doctors. ICUs and HDUs can provide treatment and equipment that is not normally available in normal wards. Your surgeon or anaesthetist will discuss with you whether you need a stay in an ICU or HDU after your surgery.

The preoperative assessment clinic for major surgery (preassessment 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 list of the medications that you are taking or your medicines in their normal packaging
- any information that you have about tests and treatments at other hospitals
- information about any allergies or problems that 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 (electrocardiogram or 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.
- You may undergo an exercise and nutrition programme to get you fitter before the operation. This is known as 'prehabilitation'.
- 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, anaemia 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 has 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 that you take, and whether you should continue to take them up to the day of your surgery.

There is much you can do to prepare yourself for surgery and the recovery period. Fitter patients who are able to improve their health and activity levels recover from surgery more quickly and with fewer complications.

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

On the day of the operation

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

Meeting your anaesthetist

You may meet with an anaesthetist at the preassessment clinic. Otherwise, you will meet your anaesthetist in the hospital on the day of your surgery. An anaesthetist is a doctor who has had specialist training in anaesthesia, the treatment of pain and 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 preassessment 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 any additional procedures that may be required to help look after you during and after the operation, and discuss methods of pain relief. They will be able to answer your questions and discuss any worries that you have about the anaesthetic.

Getting ready for the operation

- You will be asked to change into a theatre gown and may be measured for compression stockings. Wearing these can 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, contact lenses, 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 that you are having and any allergies that you have. If you have any questions or concerns, you should tell a staff member.

- Your anaesthetist, the staff helping the anaesthetist and theatre nurses will be there to look after you. There may also be anaesthetists in training and medical students present. You can say if you are not comfortable with students being 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 arm. This is used to give you medicines and fluids (a 'drip') during the operation. You may be able to have a local anaesthetic cream to numb the area first.
- Occasionally another cannula may have to be inserted into your neck called a central line in order to give medications and to monitor you during your operations and afterwards. Your anaesthetist will discuss this with you.
- Depending on the type of surgery, and on your general health, the anaesthetist may insert another type of cannula into an artery, called an arterial line. This is usually done when you are asleep. 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 asleep, for some surgery you may also have other equipment put in to help the team monitor your condition during the surgery and to give you fluids.

Blood transfusion

Blood transfusion is a possibility during all major surgery. Blood is given only 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 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 comfortably 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 (catheter) 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.

You can find out more information about epidural anaesthesia on our website:
rcoa.ac.uk/patientinfo/leaflets-video-resources

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 hours and four hours. A longer-acting pain relief medicine may also be injected, which may last for eight hours or more.

You can find out more information about spinal anaesthetics on our website:
rcoa.ac.uk/patientinfo/leaflets-video-resources

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

Patient-controlled analgesia (PCA)

This is a form of pain relief that you control yourself. A pump containing a strong painkiller 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 that 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.

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 an ICU or HDU.

The recovery nurse 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/contact lenses 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 help 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 because this helps your recovery.

In the 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 breathing exercises to do on a regular basis. It is very important that you can breathe deeply and cough effectively throughout your time on the ICU or HDU. This will help avoid a chest infection.

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

You will be able to have visitors while on the 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.

Recovery and going home

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

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

Some hospitals offer rehabilitation programmes such as Enhanced Recovery. You can find out more about this at: nhs.uk/conditions/enhanced-recovery

You will not be able to drive after surgery, so you should arrange for a taxi or someone to pick you up.

Before being discharged you will be given information on any exercises you should do to help you recover and information on how to look after your wound.

You should contact your GP or the hospital where you had your surgery if:

- you have severe pain or your pain increases
- you develop pain and swelling where you had the surgery
- you experience chest pain or breathing difficulty
- you have any concerns that are not covered in the discharge information that you have been given by the hospital.

If you feel very unwell you should go to your nearest emergency department as soon as possible.

Risk and shared decision-making

Modern anaesthetics are very safe. There are some common side effects from the anaesthetic drugs or equipment used, which are usually not serious or long lasting. Risks will vary between individuals and will depend on the procedure and anaesthetic technique used.

Your anaesthetist will discuss with you the risks that they believe to be more significant for you. They will only discuss less common risks if they are relevant to you.

If you wish to read more detail about risks associated with anaesthesia, please visit: rcoa.ac.uk/patientinfo/risk

Shared decision-making

Shared decision-making ensures that individuals are supported to make decisions that are right for them. It is a collaborative process through which a clinician supports a patient to reach a decision about their treatment.

The conversation brings together:

- the clinician's expertise, such as treatment options, evidence, risks and benefits
- what the patient knows best: their preferences, personal circumstances, goals, values and beliefs.

Find out more at: england.nhs.uk/personalisedcare/shared-decision-making

Here are some tools that you can use to make the most of your discussions with your anaesthetist or preoperative assessment staff:

What are the **Benefits**?
What are the **Risks**?
What are the **Alternatives**?
What if I do **Nothing**?

Choosing Wisely UK BRAN framework

Use this as a reminder to ask questions about treatment.
https://bit.ly/CWUK_leaflet

NHS ask three questions

There may be choices to make about your healthcare.
https://bit.ly/NHS_A3Qs

The Centre for Perioperative Care (CPOC)

CPOC has produced an animation to explain shared decision-making.
cpoc.org.uk/shared-decision-making

Questions ?

you might like to ask

If you have questions about your anaesthetic, write them down (you can use the examples below and add your own in the space below). If you want to speak to an anaesthetist before the day of your operation, contact the preoperative assessment team who may be able to arrange for you to speak to an anaesthetist on the telephone or see them in a clinic.

1. **What are the risks specific to me?**
2. **Which type of pain relief do you think is best for me?**
3. **Why would I specifically need HDU or ICU?**
4. ...
5. ...
6. ...

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 preassessment clinic in your hospital.

The Faculty of Intensive Care Medicine has useful resources for patients and carers on intensive care: ficm.ac.uk/for-patients

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 because 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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