Anaesthesia and your weight

This leaflet explains why and how additional body weight can cause added difficulties and risks during surgery and anaesthesia. It also highlights what can be done before, during and after surgery to reduce these risks. We would recommend reading this leaflet in conjunction with our other leaflet **You and your anaesthetic** (rcoa.ac.uk/patientinfo/you-your-anaesthetic).

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Introduction

If you are living with obesity and are planning to have an operation, the excess weight can put you at a higher risk of certain complications.

We know that people who live with obesity can be subject to stigma. However, as far as your hospital care is concerned, you should not expect to be treated any differently or feel at a disadvantage. NHS hospitals should provide the highest standards of care for you and have policies to help you maintain your dignity.

Anaesthetists and surgeons regard obesity only as a medical condition that carries a higher risk during surgery. As such, it is important that everyone talks openly about obesity and its risks, because this will help you to be involved in the decisions about your care and improve your outcomes.

Anaesthetists are medically trained to manage the potential complications related to obesity.

The Society for Obesity and Bariatric Anaesthesia (SOBA) (sobauk.co.uk) was set up to promote better training and care given by anaesthetists to patients with obesity.

What is obesity and how is this measured?

Body mass index (BMI) is a calculation used to find out if you are a healthy weight for your height. Anaesthetists use BMI, along with other measurements, to calculate the required dose of anaesthetic drugs for patients. You can find out your BMI using the NHS BMI health weight calculator at: nhs.uk/live-well/healthy-weight/bmi-calculator. BMI is one of the measures used in a medical context to classify obesity.

BMI classifications

Underweight	Below 18.5
Healthy weight	Between 18.5 and 24.9
Overweight	Between 25 and 29.9
Obesity class 1	Between 30 and 34.9
Obesity class 2	Between 35 and 39.9
Obesity class 3	Above 40

Waist size is another measure to determine whether you are carrying excess weight around your stomach. This is important because excess weight around your middle increases your risk of heart disease, diabetes and stroke.

Regardless of your height or BMI, you should try to lose weight if your waist is:

- 94 cm (37 inches) or more for men
- 80 cm (31.5 inches) or more for women.

You're at very high risk and should contact a GP if your waist is:

- 102 cm (40 inches) or more for men
- 88 cm (34 inches) or more for women.

Source: NHS Health A–Z (nhs.uk/conditions).

Risks and shared decision-making

Modern anaesthetics are very safe. However, there are some additional risks for patients living with obesity and overweight.

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

You can read more detail about **risks associated with anaesthesia** at: rcoa.ac.uk/patientinfo/risk

If you have significant levels of excess weight, it may be more difficult to carry out certain essential procedures during surgery and anaesthesia, such as:

- finding a vein to give drugs and fluid. This may require multiple attempts and may result in bruising to your arms, but it is essential to deliver your anaesthetic
- monitoring your blood pressure

- adjusting the sedative drug doses correctly, especially if you have obstructive sleep apnoea (OSA) (see next section)
- inserting a breathing tube into your airway to help your breathing and make sure that your oxygen levels stay normal during the operation. In some cases, the anaesthetist may decide to put the breathing tube in while you are awake. You can find out more information about **Your airway and breathing during anaesthesia** at: rcoa.ac.uk/patientinfo/leaflet-video-resources
- moving you into the correct position for your operation. You may be asked to position yourself on the operating table to reduce the need for staff to move you.

In addition, patients living with obesity may:

- take longer to recover after the anaesthetic
- have increased risk of chest and wound infections after surgery
- have increased risk of pressure injuries
- need to stay in hospital longer after surgery.

How will I be assessed for surgery?

You should be seen in the preoperative assessment clinic (also known as preassessment) in the weeks before your surgery. This may be a telephone, virtual or in-person consultation. The staff at the clinic will go through your medical history, calculate your BMI and order any tests that are needed. It is also an opportunity for you to ask questions and be involved in decisions about your care.

The medical conditions listed below can carry additional risks when having surgery and anaesthesia and it's important to discuss them during preoperative assessment.

Obstructive sleep apnoea

OSA is a common sleeping disorder and is associated with having a higher BMI. Many people presenting for surgery may not even know that they have OSA and so anyone presenting for surgery should be screened for OSA as part of their preoperative assessment.

OSA can lead to:

- pauses in breathing at night
- stress on the heart and lungs
- poor sleep
- excessive tiredness in the daytime
- irregular breathing, which can cause a build-up of carbon dioxide and a reduction in oxygen levels.

You can find out more information about OSA at: nhs.uk/conditions/sleep-apnoea

OSA is important to consider when undergoing anaesthesia because moderate or severe OSA may make you very sensitive to sedative and anaesthetic drugs, as well as some pain-killers. These drugs can worsen the symptoms of OSA. If you have OSA, the preassessment team may plan for you to recover in the high dependency unit (HDU) to monitor your condition closely after surgery.

What should I do if I have a diagnosis of OSA?

If you already have a diagnosis of OSA, please let the preassessment team know. They will need to know the severity of the OSA from your previous diagnostic testing, details of the specialist who manages your OSA and what treatment you are having. If you are using continuous positive airway pressure (CPAP) to treat your OSA, it is very important to bring your personal CPAP machine to hospital with you so that you can use it immediately after your surgery.

What should I do if I think that I could have OSA?

If you are concerned that you may have OSA, you should ask your GP about screening as soon as you know that you need an operation or discuss it with the preassessment team.

If there is no time to investigate you for OSA before surgery, but your anaesthetist and preassessment team consider you to be high risk, they may treat you like a patient with OSA to keep you safe during surgery, and you should then consult your GP when you have recovered.

Some patients worry that having OSA or suspected OSA will cancel their surgery. This is not the case. In fact, to keep you safe and plan your care appropriately, it is important to have open discussions about suspected or diagnosed OSA with the team looking after you.

Type 2 diabetes

This occurs when your body becomes resistant to the hormone insulin, which regulates your blood sugar level.

You can find out more information about type 2 diabetes at: nhs.uk/conditions/type-2-diabetes

Patients with diabetes are at a higher risk of infection after surgery because their healing can be slower. The risk of infection increases with higher blood sugar levels, so good control of blood sugar around the time of your surgery is important. If you are concerned about your blood sugar control, then make an appointment early to see your GP or diabetic nurse who can help advise you.

Thrombosis (blood clots)

Obesity increases the risk of developing blood clots. Blood clots in the heart, lungs or brain can cause you to be very unwell or even be fatal. The risk of developing a blood clot increases during and after surgery, so it is important that steps are taken to reduce this risk. You can expect to be encouraged to be as mobile as possible before and after surgery; you will probably be asked to wear compression stockings and, when in bed, your legs may be placed in intermittent calf compressors (devices which increase blood flow through your legs and prevent blood clots). In addition, you may be prescribed blood-thinning injections or tablets.

High blood pressure and heart disease

Obesity is associated with high blood pressure, high cholesterol and heart disease. Patients living with obesity may also suffer from an irregular heartbeat.

Anaesthesia and surgery may cause additional stress on the body and the heart. Having obesity can increase the risk of a heart attack or heart failure or arrhythmias (abnormal heart rhythm) during and after surgery.

As with other medical conditions, it is important that the anaesthetic team knows if you have any of these illnesses and that your blood pressure is well managed before surgery. Although your blood pressure will be checked on the day of the surgery, good blood pressure control in the weeks and months leading up to surgery reduces the risks of heart problems during and following surgery. Contact your GP as soon as you know that you will need an operation if you are worried that your blood pressure is not well controlled.

Heartburn

Heartburn is a burning feeling in the chest caused by stomach acid wrongly travelling up towards the throat (acid reflux). Patients who are overweight or living with obesity are more likely to develop this condition. Some people may regard heartburn as a minor ailment, but it can lead to complications during an anaesthetic.

With heartburn, there is an increased risk that stomach contents could spill into the lungs during an anaesthetic. A breathing tube is often used to reduce this risk, but there is still a risk that some stomach contents can enter the lungs before the breathing tube is placed or it can bypass the breathing tube.

Following the fasting guidance by the preassessment team carefully and use of regular antacid medication can reduce these risks. Most patients are advised to take their antacid medication on the day of surgery.

What can I expect on the day of the operation?

For patients living with obesity, your care will follow the same steps as those patients who are not living with obesity. You can find out more information in the leaflet **You and your anaesthetic** (rcoa.ac.uk/patientinfo/you-your-anaesthetic).

There are, however, some things that may need to be done differently by the anaesthetist and the surgical team. These will be discussed with you when they see you on the day of the surgery.

The following are things that may be additional/different.

- You may be asked to position yourself on the operating table.
- You may receive the anaesthetic in the operating theatre once you are in the right position, rather than in the anaesthetic room. Theatres can be busy environments, but everyone there is involved in your care.
- You will be given oxygen to breathe before you go to sleep, as all patients are, but this may be done through your nose rather than a mask.
- It may be difficult to insert the cannula (a thin plastic tube inserted in a blood vessel to give drugs and fluids) and an ultrasound (imaging equipment used to see inside the body) may be needed. Multiple attempts may be required.
- If your anaesthetist is concerned about accurately monitoring your blood pressure during surgery, they may discuss other ways in which this can be done. For example, the anaesthetist may decide to use a special cannula placed in an artery (an arterial line)
- You may go off to sleep sitting at 45 degrees or more.

Waking up and after surgery

- With obesity, and particularly after certain types of surgery, there is increased risk of you needing care in the high dependency unit (HDU) or the intensive care unit (ICU) after your surgery. If this is planned, it will be discussed with you before your surgery. You can find out more about a planned stay in an HDU or ICU by reading our leaflet **Your anaesthetic for major surgery** which is available from our website: rcoa.ac.uk/patientinfo/leaflets-video-resources
- If you use a CPAP machine, you will be encouraged to use this after your surgery.
- All patients are encouraged to mobilize as soon as they can and you should be prepared to do this too.

What anaesthetists can do to reduce your risk

For some procedures the risks from general anaesthesia can be reduced by having a regional anaesthetic, which numbs the nerves around the site of the surgery and allows you to stay awake. For example, if the procedure is on the lower part of your body, an epidural or spinal anaesthetic may be suitable. Another benefit of regional anaesthesia is that it may allow you to be mobile again sooner after surgery, reducing the risks of thrombosis.

However, a regional anaesthetic may be more difficult to put in if you have obesity and multiple attempts may be required. For some people it may not be possible to use this technique. Your anaesthetist will discuss anaesthetic options for your surgery and the risks with you when you attend the preoperative assessment clinic or on the day of your surgery.

You can find out more about **regional anaesthetics and nerve blocks** from our website: rcoa.ac.uk/patientinfo/leaflets-video-resources

What you can do to reduce your risk

There is much you can do while you are waiting to have your surgery to support your recovery. You could focus on being as active as possible and eating a well-balanced diet. Even small changes can improve your recovery and maximise the success of your procedure.

More information on how to prepare for surgery can be found at: rcoa.ac.uk/fitterbettersooner

Shared decision-making

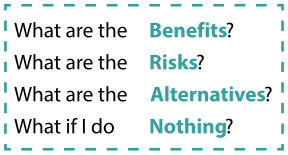
Shared decision-making ensures that individuals are supported to make decisions that are right for them. It is a collaborative process through which a clinician supports a patient to reach a decision about their treatment.

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:



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 child's 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. **Do I have any special risks from the anaesthetic?**
2. **What type of anaesthetic is recommended for me?**
3. **What can I do before surgery to reduce my risk?**
4. ...
5. ...

Summary

Patients living with obesity are usually able to have the same procedures as any other patients.

There are increased risks, but, if there is time before surgery, these can be reduced by making some changes to your lifestyle. All patients, regardless of their weight, are also advised to follow this guidance because improved fitness and health can better prepare them to cope with the demands of surgery and speed up their recovery.

Acknowledgements

We would like to thank the patient advocates of the Society for Obesity and Bariatric Anaesthesia (SOBA) for their advice and guidance in producing this resource.

Sources of further information

For you

- NHS (nhs.uk/live-well).
- Your GP.
- Preparing for surgery – Fitter Better Sooner (rcoa.ac.uk/fitterbettersooner).
- Anaesthesia and risk (rcoa.ac.uk/patientinfo/risks).
- Information leaflets and video resources (rcoa.ac.uk/patientinfo/leaflets-video-resources).
- Centre for Perioperative Care (cpoc.org.uk).
- Diabetes UK (diabetes.org.uk).

For your doctors

- Society for Obesity and Bariatric Anaesthesia (SOBA) (sobauk.co.uk).
- Perioperative management of the obese surgical patient (bit.ly/periop-obese-patient).

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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