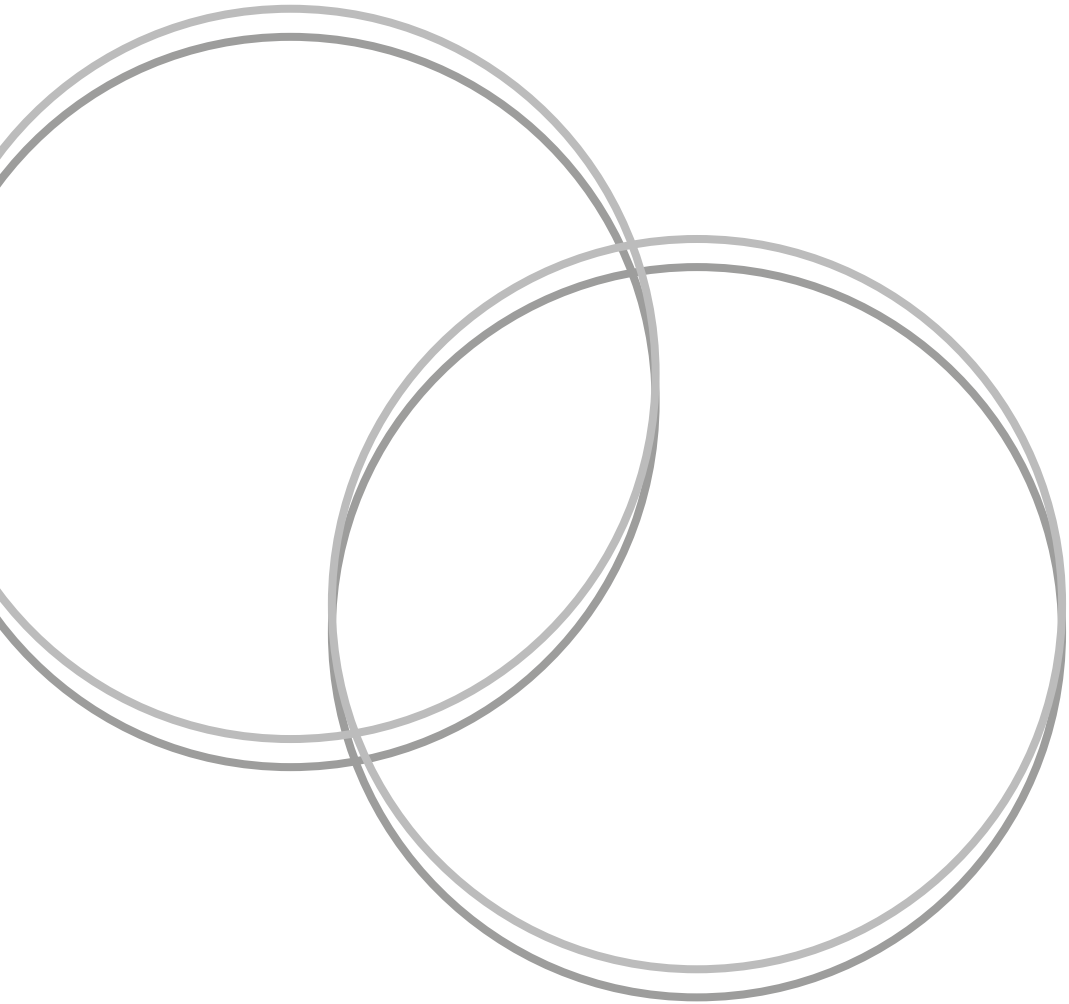
NHS
Oxford University Hospitals
NHS Foundation Trust

Minimally invasive thoracic surgery

Information for patients



Welcome to the Oxford Heart and Lung Centre

This booklet explains what happens before, during and after your surgery. If you have questions at any time, please speak to a member of the team, contact numbers are at the back of this booklet.

It has been written for patients who are being admitted electively for surgery, if you are an in-patient waiting for surgery the sections on the pre-admission clinic and theatre direct admissions will not apply to you. You should follow the advice about staying healthy while waiting for surgery in the hospital as best you can.

What is enhanced recovery?

Enhanced recovery helps you get better sooner after surgery. Research shows that people recover faster when they get out of bed, eat, drink and move around as soon as it is safe to do so. We will support you and you will play an important part in your recovery.

You have been given this booklet because you are having minimally invasive thoracic surgery

Over the next few pages is information about various types of minimally invasive thoracic surgery. The surgical and pre-admission teams will be able to highlight which section is appropriate to you.

Please read the appropriate section below for specific information about your surgery.

Surgery for Pneumothorax

What is a pneumothorax?

A pneumothorax is a collapsed lung. It happens when air leaks into the space around the lung, causing part or all of it to collapse. It is a fairly common condition and often affects young people; in particular tall men, possibly because their lung is stretched out more within their ribcage.

A pneumothorax can happen for a variety of reasons but is often caused by an area of the lung lining becoming thinned out. This causes blister like areas called bulla to form, which can break open and leak air. This causes the pneumothorax.

Why do I need surgery for my pneumothorax?

Surgery is usually suggested for anyone who has had two or more episodes of pneumothorax (partially collapsed lung) on any one side.

It is also recommended to anyone who has had a tension pneumothorax. This is a full collapse of your lung which can then cause your heart to move across your chest with the pressure.

Do I have to have surgery?

There are many methods of treating a pneumothorax, but surgery offers you the best chance of it not happening again. You can discuss alternatives to surgery with your Surgeon if you want to.

What are the different types of surgery for pneumothorax?

There are four different types of surgery to help treat pneumothorax:

Pleurodesis

This operation will help stick the two membranes (called pleura) that surround your lung back together. This will help to prevent the build-up of fluid or air in-between the two membranes.

Pleural abrasion

The surgeon will 'irritate' the inner side of the chest wall by gently rubbing it. This helps the lung to stick to it. You will usually have a chest drain inserted following this operation.

Pleurectomy

This is the removal of the outer of the two membrane layers (pleura) that surround the lung, so that the lung sticks to the inside of the chest wall; preventing further collapse.

Bullectomy

This is a surgical operation where bullae are removed. Bullae are blister-like areas, about 1cm in diameter, that are filled with air which has had the oxygen used up. They are common in people most at risk of pneumothorax, e.g. tall thin men (caused by stretching of the tissues) and heavy smokers (as a consequence of damage caused by smoking).

By removing them it allows healthy air sacs more room to expand and promotes better breathing and intake of oxygen.

Mediastinoscopy

What is a mediastinoscopy?

During this operation, the surgeon makes a small cut at the base of your neck to look at the lymph nodes in your chest and take samples (biopsies). The procedure usually takes about 45 minutes.

Why do I need a mediastinoscopy?

After looking at your chest X-rays, CT and PET scans your doctor has asked the surgeon to take a look at the lymph nodes inside your chest and take biopsies to confirm or determine your diagnosis and a treatment plan.

Lung or Pleural Biopsy

What is a lung or plural biopsy?

A biopsy is a operation to collect samples of tissue for analysis by a pathologist or other specialist. The doctor who referred you for the biopsy will have discussed with you the reasons why you need a biopsy.

The surgeon will carry out the biopsy whilst you are under a general anaesthetic (you will be asleep). The surgeon will take small biopsies from areas of your lung or pleura (the pleura are the membranes which surround the lungs).

Empyema and Decortication

What is an empyema?

Empyema is infected fluid or pus in the pleural space around the lung. Pneumonia is the most common cause of empyema. A small number of people who develop a pneumonia develop pus around the lung. If pus stays around the lung for a number of days the body reacts and produces strands of fibrous tissue. After 2 weeks the fibrous tissue thickens and starts to coat the lung like a thick layer of orange peel. This peel traps the lung, and it cannot expand properly. Most people feel very unwell with an empyema.

How is an empyema treated?

The body may clear infected fluid with the help of antibiotics. A chest drain is often needed to get rid of the infected fluid.

If this does not clear the infection a minimally invasive operation may be needed to help clear the infection. The operation to remove infected fibrous tissue is called decortication.

Once peel covers the lung, or if a minimally invasive operation does not clear the infection enough, a bigger operation may be needed to free the lung.

What are the risks of surgery?

Any operation which involves having a general anaesthetic carries with it a risk of complications. Your surgeon will discuss with you the common risks and also any specific risks that relate to you, before you are asked to sign that you are happy to have the operation (give your consent).

Make the most of this opportunity to discuss any questions or worries you might have. You need to feel confident that you understand what the operation involves, as well as the risks, before you sign the consent form.

Keyhole Surgery:

Video Assisted Thoracoscopy (VATS)	The surgeon uses a camera and instruments through small cuts in your chest.

Robotic Assisted Thoracoscopy (RATS)	The surgeon controls robotic instruments through small cuts in your chest. The surgeon remains in full control throughout the operation.

You may need a larger cut if it is not safe to continue with keyhole surgery

Healthy steps to take before my surgery

Here is some brief advice on how to get in the best possible shape before your operation. This will contribute to a better recovery, less complications and potentially a shorter hospital stay.

Eating and drinking

Good nutrition is always important, but it becomes even more so before and after surgery. By eating a healthy and balanced diet you are providing your body with all nutrients it needs to repair tissues and fight infections.

Before your operation you should try to eat as normally as possible, unless you have been told otherwise by a registered dietician, your doctor, or a member of our team:

Eat regular meals containing protein such as meat, fish, eggs, cheese, lentils and milk.

Include food containing carbohydrates each meal such as cereals, bread, rice, pasta and potatoes.

If you are underweight or experiencing unintentional weight loss avoid using low fat foods/drinks- instead use full fat milk, margarine/butter, cheese and yoghurts. Include extra snacks e.g. yoghurts, cheese and crackers, rice pudding etc. and nourishing fluids e.g. full fat milk.

Please inform us if you have experienced weight loss recently, as we can provide you with information and supplement drinks to help meet your additional nutritional needs prior to your operation.

Physical activity

Physical activity before and after your surgery is extremely important; it will help you maintain muscle mass, particularly that of your legs which can deteriorate quickly due to bed and chair rest/ reduced activity whilst you are in hospital.

Doing some exercise can help you clear chest secretions, sleep better, improve digestion and boost your mood and immunity to help you heal more effectively.

Evidence shows that if you do more regular activity before your operation you will have a better outcome after surgery, meaning you may have a shorter length of stay and reduced risk of complications.

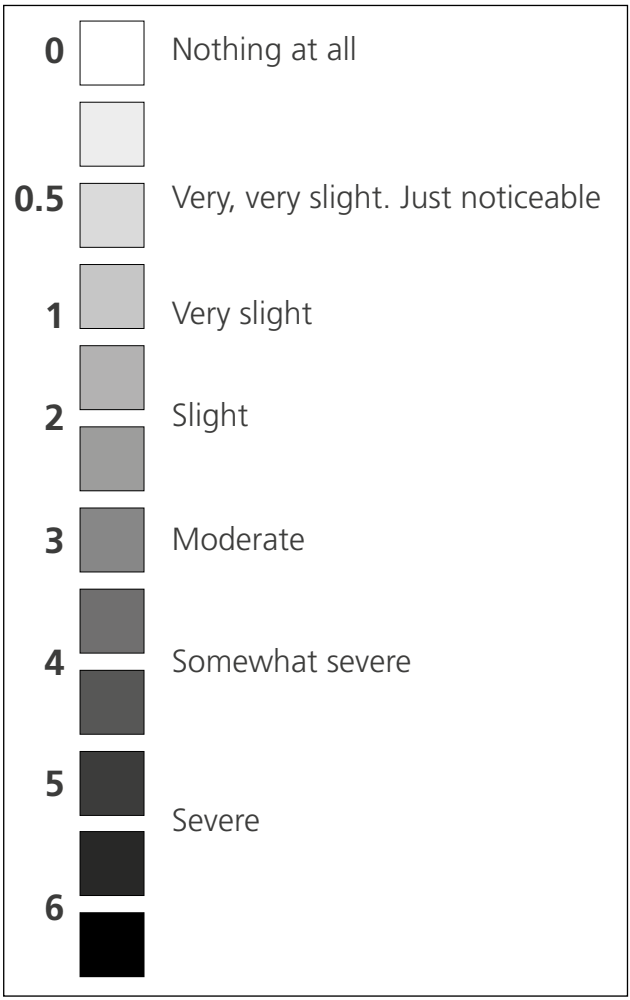
Here are some lower body exercises you can do on the ward after your surgery to aid your recovery and the return to your usual activities:

- Breathe freely throughout the exercises; please avoid holding your breath.
- Start slowly; ideally warming up gradually over 5 minutes by doing some slower repetitions or slower paced walking.
- Do not make any sudden movements.
- Do not stop exercising suddenly – warm down again gradually over 5 minutes.
- Please ask a member of staff if you need advice for these or other exercises.
- Try to record the number of repetitions and sets of each exercise you do.
- Try to record the time spent walking, the number of laps and how you felt (Borg score) and any rests you had.

Modified Borg Dyspnoea (Breathlessness) scale

This is a scale that asks you to rate the difficulty of your breathing. It starts at number 0 where your breathing is causing you no difficulty at all and progresses through to number 10 where your breathing difficulty is maximal. How much difficulty is your breathing causing you right now?

When you are exercising, try to exercise at a level that leaves you feeling moderate to somewhat severely breathless (3-4).



Borg G. Perceived exertion as an indicator of somatic stress. Scand J Rehabil Med. 1970; 2(2):92-8.

Sit to stand

Area of body worked: legs and bottom

This daily activity is necessary to retain functional independence and can help to develop your leg strength and endurance. Find a stable chair with or without arms depending on your need. Sit on the edge of the chair and place your feet hip width apart and face forward, with your knees bent at 90 degrees. Lean slightly forward to transfer your weight over your knees and rock gently forward and push up from the chair (with or without your hands) to an upright standing position. Pause for a few seconds and then return slowly to a sitting position and repeat





Walking

Warm-up gradually by walking slowly to start with, preferably over five minutes so your heart and breathing have a chance to become accustomed to the activity.

Wherever you are walking, whether before surgery or around the ward after surgery, you should aim to walk at a steady pace, slowing or pausing to catch your breath if you need to do so. Try to walk at a speed that makes you feel moderately breathless (Borg scale 3-4 out of 10) so you can maintain or develop your endurance over time. Use your walking aids or oxygen if you usually use them when walking. You may need to walk more briskly to achieve the intended level of breathlessness.

Try to increase the distance you can walk and decrease the rests needed before you increase the speed. Make a note of the time you start and end, or the distance and see how this improves over the few days. You can use landmarks to help you to pace your walking and ask us for advice if you need to. If you are finding it difficult to walk as far as you want to and find breathlessness is limiting you, you can use interval training. To do this, alternate faster waking with periods of slower walking or rest.

Breathing exercises

Breathing exercises can help you feel more relaxed and reduce anxiety associated with breathlessness, prevent small areas of your lungs collapsing after your surgery and move phlegm (or sputum) that may build up and have the potential to cause a chest infection.

The active cycle of breathing is a technique which is used to clear phlegm and re-inflate your lungs. Please refer to:

'The Active Cycle of Breathing Techniques'

www.acprc.org.uk/media/521payl5/gl-05acbt-1.pdf booklet for instructions on how to complete these breathing exercises.

Smoking

It cannot be emphasised enough that it is in your best interests to stop smoking as soon as possible before any major surgery. The longer you are smoke-free before the surgery the better, we advise a minimum of 4 weeks prior to surgery. There are various products available to help support your stop attempt and to reduce the symptoms associated with nicotine withdrawal including patches, gum, lozenges and nasal sprays.

Continuing to smoke before surgery can increase the risk of complications involving your heart, lungs and surgical wounds. All of these can result in a slower recovery period and a longer stay in hospital.

You can find local contacts for your local smoking cessation service on the next page.

Your GP practice may have a smoking cessation advisor who can help you to stop smoking. Ask your GP for further information.

Contact your local pharmacist, they can signpost you to your nearest stop smoking service.

The NHS smoking helpline/website both give free advice and support. Call **0800 168 069** or visit www.smokefree.nhs.uk for online support.

Contact your local stop smoking service for free advice and nicotine replacement, one to one help, or group sessions. Let them know you are going to have an operation soon so they can prioritise you. You are four times more likely to successfully quit with a support service.

Contact details are below:

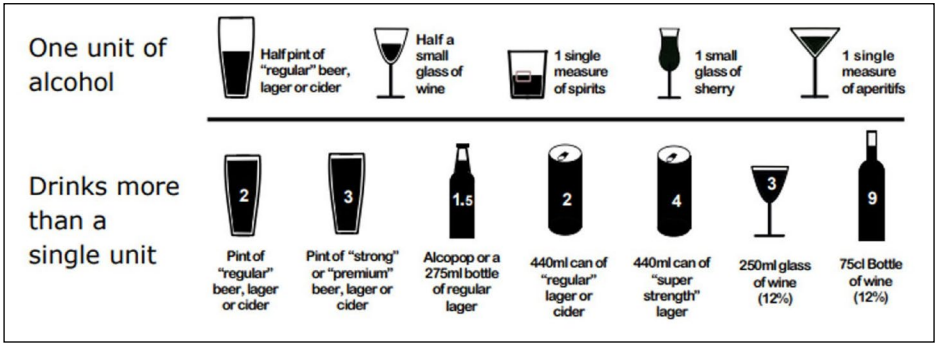
Area	Contact details
Oxfordshire Smoke Free Oxon	**0800 722 3673** Text: 66777
Hampshire Smokefree Hampshire	**01264 563 039** or **0800 772 3649** Smokefree.hampshire@nhs.net Text: Quit to 80011 Email: hello@smokefreehampshire.org.uk
Buckinghamshire Be Healthy Bucks	**01296 322 738** https://bhb.maximusuk.co.uk Email: bobicb-bucks.bhb@nhs.uk
North Northamptonshire	**0300 126 5700** (option 2) www.northnorthants.gov.uk/health-and-wellbeing/stop-smoking
West Northamptonshire	**0300 126 5700** (option 1) www.westnorthants.gov.uk/stop-smoking-drug-and-alcohol-support Email: smokefree@westnorthants.gov.uk
Swindon	**01793 465 513** www.swindon.gov.uk/info/20139/live_well_swindon_hub Email: livewell@swindon.gov.uk

Alcohol

Limiting your alcohol intake will also help in your recovery.

The current recommendations are for no more than 14 units per week for both men and women, with 2-3 alcohol free days a week.

This diagram shows the number of units of alcohol in different types of drinks, use this to work out how much you drink.



If you are worried about the quantity of alcohol you drink, then please contact your GP or the Hospital's Here for Health team on **01865 221429**.

What tests will I have before my operation?

Before your operation you will have a range of tests to assess your health and fitness for surgery. The tests you will need will depend on the surgery you are having and any other health issues you may have. Some of these tests will be done at the pre-admission clinic, some will have been done before you see the surgeon.

Blood tests – These can tell us about your general state of health and fitness for surgery as well as giving us a baseline to refer to in the post-operative period.

Electrocardiogram (ECG) – This machine measures the electrical activity of your heartbeat and muscle function. Further investigations that might be requested to assess your heart include an Echocardiogram and a Myocardial Perfusion Scan (MPS), these are done routinely for some of our patients.

Lung function tests – These look at lung capacity (how much air you can hold in your lungs) and assess how your well your lungs are working.

You may need scans such as CT or MRI scans to help us plan your surgery.

Bronchoscopy/EBUS – This involves passing a telescopic camera into your windpipe to look at the main airway of your lungs. Small samples of tissue called biopsies may be collected. These are then looked at in our laboratory.

CT Biopsy – This is carried out by the radiologist in the CT scanner. During this procedure a small sample is taken from your lungs through a fine needle, with the aim to obtain a diagnosis. This is not always feasible, and results can vary.

What kind of assessment will happen before my operation?

Before your operation you will be invited to come to the pre-admission clinic. This is run by the pre-admission nurses. This is to finalise what is needed for surgery and give you another opportunity to discuss any concerns.

At this clinic you will be assessed by:

A **Doctor or a Physician Assistant**, who will complete a physical examination of you and speak to you regarding your past medical history. Please bring with you any medications you are currently taking for them to review.

The **Pre-admission Nurse**, who will discuss what will happen before and after your surgery, ask you questions about your daily activities and about any support that you may need when you go home. The nurse will take your blood pressure, heart rate, weight and height. They will also give you an opportunity to ask any questions you might have about your admission.

You may be asked to see an **Anaesthetist**, who will complete an assessment of your suitability to tolerate a general anaesthetic, they will explain how they will look after you during your operation and answer any questions you may have about having an anaesthetic.

You might be approached by **Research Nurses** working within the Trust to speak about current trials. You can decide whether to have the discussion and then if you choose to participate, knowing you would be able to withdraw from them at any point.

What will you leave with?

Leaflets: You will be given lots of information at your appointment, it is hard to remember all that is discussed therefore take your time to read over the leaflets you are given.

Antiseptic wash and nasal cream: Including instructions of how and when to use them before your admission.

Preparing to come into hospital

Think about how you will travel into hospital – it might involve an early start.

Think about what you will take into hospital with you. Make sure you have a pair of well fitting, flat, comfortable slipper or shoes. If you normally use a walking aid or have glasses, dentures or hearing aids, then please make sure you bring these with you

Please bring all your medication in with you in their original packaging and, if possible, a prescription list.

Check you have enough support in place for when you go home. You may need extra help initially, especially with housework, gardening etc.

Before going into hospital, it is sensible to stock up your freezer, so you do not have to worry about shopping immediately after you are discharged.

If you are the primary carer for someone, think about how this person will be looked after whilst you recover from your operation.

Who will look after me during my hospital stay?

You will be admitted under the care of a Consultant Thoracic Surgeon who is assisted by other Doctors, including Registrars and Senior House Officers.

Nursing staff are fully qualified, and many have specialist cardiothoracic qualifications. This means they specialise in the care and treatment of people with heart and lung problems.

The **Matron** manages the cardiothoracic unit. The Sister is responsible for the cardiothoracic ward.

Anaesthetists are doctors who will put you to sleep for your operation. They monitor your condition very carefully throughout your operation and make sure that you have enough pain relief during your recovery period.

Advanced Care Practitioners are nurses and other registered health care professionals who have undertaken advanced specialist training to extend their roles, often including prescribing drugs. They work as part of the multidisciplinary professional team.

Physicians Assistants have undertaken specialist training enabling them to work with the medical team, they work under the supervision of a doctor.

Physiotherapists will visit you after your operation. They will help you keep your lungs clear and will help to get you moving after your operation. This will speed up your recovery and get you back to a level of activity which allows you to go home.

Occupational Therapists are available to give you advice and information about going back to your daily activities after your surgery. They can also give you some useful items of equipment to use at home, if you need them.

A **Pharmacist** will visit the ward each day to review your prescriptions and advise the medical team. You may see them before discharge or ask to speak to them if you have any questions about your medications.

What happens on the day of my operation?

When to arrive

When you come to the pre-admission clinic you will be told what time to arrive at theatre direct admissions (TDA) on the day of surgery.

When to stop eating and drinking

You must not eat any food, chew gum or suck sweets for 6 hours before a general anaesthetic or sedation. You may drink clear fluids only (such as water or squash) until you are taken to theatre. Drink plenty of fluids (preferably water) the day before your operation to keep your body hydrated.

You should have your normal evening meal the day before surgery. You can continue to eat up until 6 hours before your admission.

On the day of your surgery

You should continue to drink clear fluids (water, squash, tea and coffee with **no milk**) until you go to theatre.

The pre-admission nurses will advise you further on what to do about your medications.

What to bring with you:

- Pyjamas
- Slippers
- Glasses
- Hearing Aid
- Medication (including prescription list)
- Toiletries (Inc. antiseptic wash and nasal cream)
- Loose fitting clothes
- Dentures
- Walking Aid
- Something to pass the time or read

Your belongings will be stored in a locker in the Theatre Direct Admissions unit during your operation and will be taken up to the ward with you following your operation. Your relatives/friends can bring other belongings in for you when they visit.

Valuables

Please do not bring valuables or large amounts of money with you. If you wear a wedding band this can be left on and will be taped over before you go to theatre. All other jewellery including piercings should be removed before your operation.

The hospital does not accept any responsibility for lost or damaged valuable items or money.

Please also remove any make up and nail varnish (from fingernails and toenails).

What happens in the Theatre Direct Admission Unit (TDA)?

On the morning of your operation you will be admitted to the theatre direct admission unit (TDA). This is a lounge area where you will be prepared for your surgery.

You will have the opportunity to discuss any concerns or issues you are worried about. Your surgeon or a member of their team will come to see you to talk about your operation and to answer any remaining questions you may have. The surgeon will then ask you to sign the consent form. This confirms that you understand the risks and benefits of the operation and are happy to go ahead. If appropriate, the surgeon may also mark the operation site on your body with a marker pen.

The anaesthetist will also see you before the operation and talk to you about the anaesthetic and pain relief after the operation.

When the theatre team are ready you will be asked to change into a clean hospital gown, and you will be fitted with surgical stockings. These will help prevent blood clots forming during the operation.

The nurse or operating department practitioner (ODP) will check some important details with you such as your name, date of birth, and any allergies you may have. They will also confirm that you have signed your consent form.

When it is time for your operation you will be taken to the anaesthetic room. We will help you to move onto a trolley and the nurses will then connect you to heart and pulse monitors.

Your anaesthetist will insert a small needle in your arm to give you drugs to make you go to sleep.

Throughout the operation the anaesthetist will be looking after you and will give you medication to keep you asleep and relieve pain.

After my operation

At the end of the operation, your anaesthetist will gradually wake you up and you will be taken round to the recovery unit, where a designated nurse will continue to monitor you.

When you wake up from your surgery:

- Some pain is to be expected but you should be comfortable overall; you will be asked about your pain levels and offered pain relief accordingly.
- You may experience nausea, however this can be treated with medication and should improve within a few hours.
- You may feel disorientated due to the anaesthetic and the unknown environment; however, this should settle over a short period of time and our team will reassure and orientate you.
- You will have a cannula (a small plastic tube in your hand/arm) through which fluids can be administered.
- You may have a chest drain in the side of your surgery (occasionally more than one drain is used).
- You will be asked to sit upright against a rigid board for a chest x-ray, this can be uncomfortable but it is quick and an essential part of our post-operative checks.
- You will be able to drink water as soon as you feel able to and the nurse thinks you are awake enough.
- You should start deep breathing exercises at this point. These can be found in the 'Active cycle of breathing' booklet.

Cardiothoracic Ward (CTW)

Once the recovery staff are happy that you have recovered from your anaesthetic, you will be moved up to CTW. The first hour is very busy for the nursing staff as they are setting up the monitoring equipment and checking your painkillers. Once the nurses have set everything up and you are comfortable, your relatives may wish to see you for a short while. You should aim to sit out of bed and walk a short distance with a staff member once you are back on CTW, this will boost the beginning of your recovery.

CTW has 25 beds for patients undergoing cardiac and thoracic surgery. Patients, if needed, can receive very close monitoring after their operation. All rooms are single side rooms with an en suite bathroom.

Visiting times are currently **8am to 8pm**, but please see the ward staff on admission to clarify these. If there are any queries regarding visiting then please ask the nurse in charge of CTW.

Please be aware that mornings are very busy times for patients and staff, as patients are getting washed and dressed, and instructions from the doctors rounds will be carried out e.g. X-rays and removal of lines and drains.

Over the following days you will be encouraged to gradually increase the amount of walking you do, along with doing some lower limb exercises. Use the advice on pages 12-17 to make sure you are optimising your recovery.

Try to walk regularly throughout the day and to tell the nurse and/or physiotherapist who are looking after you if you are experiencing any pain which may limit your activity, deep breathing or ability to cough effectively to clear any secretions.

There is an exercise bike on the ward which you can use to help you recover. Please ask a member of staff to help you set it up and guide you the first time and until you are confident to use it alone.

Pain relief

Optimal pain control is essential for a good and prompt recovery. We will dispense tablets for you to take in hospital and at home every 6 hours, but you are encouraged to ask for additional painkillers as required and can normally have breakthrough medications 2-4 hourly.

There are additional modalities the anaesthetist might discuss with you for pain relief, which include:

Local and regional blocks

This is an injection of local anaesthetic around nerves to numb the area and reduce pain. It can be given by the anaesthetist or surgeon in theatre. You may have a continuous infusion of local anaesthetic during your first few days on the ward if your surgeon thinks this is required.

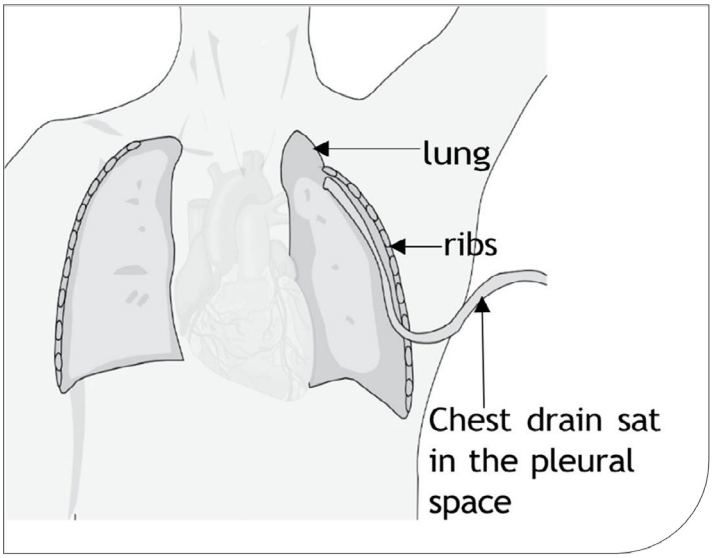
Patient controlled analgesia (PCA)

With the use of PCA, pain relieving medication is given through veins via a pump. You will be able to control your medication by pressing a button and the dosage is set so there is no risk of overdosing.

It is important that you are comfortable enough to carry out your deep breathing and coughing exercises. Please tell us if you start to have any pain so we can make changes to your medication if needed.

Chest drains

Chest drains are often necessary after minimally invasive thoracic surgery. Their job is to remove any fluid and air which can collect in the chest cavity.



The drain is a one-way system that draws fluid and air out and stops it from going back into the chest. The chest drain is a tube which has one end in your chest cavity and the other attached to a chest drain pump. The tube is held in place by a stitch.

The drain pump controls the amount of suction applied to the drain and measures how much air is leaking out. The amount of suction applied to your chest drains may be changed as you recover from your operation.

You can help to re-expand your lungs by moving or walking around and by deep breathing and coughing.

Chest drains are removed when the doctors are happy that they are no longer required.

How do I look after my chest drains?

Always remember to carry the pump with you and rest it on the floor when you are sitting or lying in bed.

Try not to pull on the tubing as this may cause pain or discomfort. Try to avoid bending and folding the tubing, as this slows down drainage.

If the tubing comes out of your body or disconnects, ask for help immediately. Your nurse will need to reconnect the tubing to the pump, and you may need to have a new chest x-ray to check that there have been no complications.

Eating and drinking after surgery

Unless otherwise stated by your consultant you will be allowed to eat and drink as soon as you are awake enough after your operation. It is important that you start doing this as early as possible.

You will need more calories (energy) and protein from your diet to help your body heal and regain strength. It is common after an operation to lose your appetite, and you may not wish to eat large meals. Most people find that eating 'little and often' is best.

Try to ensure you focus on high protein food if you have a reduced appetite; you need protein to heal.

Your nurse can give you high calorie drinks to supplement your meals if necessary.

What you eat and drink will be monitored during your admission, and you will be referred to the dietitian for assessment if you are not able to eat enough food.

Discharge

Transport and discharge home

We ask you to plan for your discharge and transport home in advance. You will need to make arrangements for a relative or friend to take you home. We recommend you travel home by car as this will be more comfortable. You should not go home on public transport when discharged home.

If you have specific medical needs, you may qualify for hospital transport. You will need to discuss and arrange this at your pre-operative assessment appointment.

When will I be able to go home?

This will depend on the type of surgery you have and how well you recover. We will make sure your pain is well controlled, and we will send you home on the same painkillers you have taken in hospital.

You need to be independently mobile on the ward and able to look after yourself before going home, the physiotherapists will help you achieve these goals and confirm that you can be discharged safely.

Plans for discharge are reviewed daily and you will be involved and asked when you feel ready to go home.

If you have achieved the above but your chest drain is required for a longer period of time, the pump might be changed to an ambulatory bag to enable you to be discharged. If this does happen you will be given specific instructions and training on caring for the chest drain, and you will be asked to attend the nurse-led chest drain clinic weekly until the drain can safely be removed.

It is normal to feel anxious about going home after surgery. Most patients recover better at home, and support is available if you need it.

What will I be given before I go home?

Medications: the hospital will ensure you have two weeks supply of the medicines you take regularly, and those prescribed during your hospital admission. Your ward nurse or pharmacist will discuss with you how and when to take your medicines. You may need to contact your General Practitioner before the end of the two weeks for a review and to arrange further supplies of your medicines.

The hospital no longer provides paracetamol or ibuprofen in take home medicines, we advise stocking up on these before you come in for your surgery.

Discharge letter

This will contain a summary of your operation and inpatient stay with any follow up arrangements which have been made and a list of the medications you have been discharged with. An electronic copy will be sent to your GP.

- Chest drain information (if you are going home with a drain).
- Useful contact details

Wound care

Your surgical wound and your chest drain wound sites will be starting to heal by the time you leave hospital. You will still have pain and some bruising, swelling and numbness, but this is quite normal, and may take some weeks to improve. Try not to touch your wound(s), as this will increase the chances of infection. Use a mirror or get a relative/friend to check your wound(s) daily. If wounds are clean and dry, they should be left without a dressing. Do not worry about the scabs-they will fall off in time.

If you had a chest drain you have at least one drain site stitch which should be removed seven to ten days after drain removal. The practice nurse/ district nurse will do this, please let the ward staff know if you need assistance with booking an appointment. Some swelling is normal and should settle over the next few weeks.

Washing

You can shower at home. We advise avoiding bathing for the first couple of weeks after surgery, as this can lead to wound breakdown and infection.

Having a shower will ensure the skin and the wound are kept clean, pat the wound dry with a clean towel. Try not to use soap or perfumed detergents on the wound and avoid spray deodorants until the wounds are fully healed.

Eating and drinking

It is important to try and eat well to minimise weight loss once you are discharged from hospital. It is not unusual for your appetite to be poor in the early weeks so try to include regular, small nourishing meals, snacks and nutritious drinks in your diet. Have softer foods

if you feel these go down easier and stick to plain food and drink if you feel sick.

Bowels

Constipation is common after general anaesthetic and with the use of strong painkillers (opioids). If constipation has been a problem, try to ensure you are eating regularly enough for your bowels to function and are drinking enough water. You can stop taking the laxatives prescribed by the hospital when your bowel habits return to normal.

Breathlessness

This will depend on the surgery performed and your underlying general health, however; some shortness of breath is expected. To help improve your lungs we recommend that you complete the breathing exercises included in the 'Active cycle of breathing' booklet.

If your breathlessness is concerning you or your family, then please contact the advanced practitioner team, the cardiothoracic ward or your GP.

Remaining active

Through daily physical activity you can improve your emotional and mental wellbeing as well as reducing feelings of fatigue. It can take up to 6 months for your lungs to fully recover, depending on what type of surgery you have had. It is really important that you continue with your breathing and general exercises after you have been discharged from hospital. We recommend that you do not try to lift, pull or push heavy weights until 6-8 weeks after surgery; however, you should continue to do your everyday functional activities like washing, dressing, cooking and walking.

We recommend that you gradually develop the amount of exercise you do, and this can include swimming (after 6 weeks), walking, cycling light jogging and light resistance exercise. If you would like advice and support with remaining active after your surgery, then please get in touch with our advanced practitioner team.

Rest and sleep

It is very common to find you tire easily during your first few weeks at home. Depending on your needs, you may benefit from a rest in the afternoon for a couple of hours, or after exercising. Ensure you give yourself more time in the mornings to get ready and plan ahead for any activities.

A good night's sleep is very important, you may find that your normal sleeping routine is disturbed or that the position you normally sleep in is now uncomfortable. It is recommended you take pain relief at night to help you achieve a good rest period.

Pain relief

Good pain control is key to enable mobility. Exercise plays a role in preventing problems such as chest infections and deep vein thrombosis. As a result, we strongly recommend that you continue to take your prescribed painkillers for the first couple of weeks at least.

It is common to experience numbness or shooting pains around the wound, this is due to the damaged nerves repairing themselves.

If your pain is not getting any better, despite taking your regular pain killers then please contact our team or your GP.

Resuming sexual relationships

It is not unusual to feel apprehensive about resuming sexual relationships after undergoing surgery. There are no definite rules surrounding this, we recommend you wait 2-4 weeks, giving the wounds some time to heal. It is unlikely you will cause any damage but take sensible measures, avoid extensive strain on the wound, choose a comfortable position which does not restrict your breathing and do not take your own or your partners weight on your arms.

Driving

It is important to notify and discuss this with your insurance company as many have different rules. It is generally recommended that you wait to return to driving for 4-6 weeks after your surgery. You will have to be off strong painkillers such as tramadol or codeine and should be able to do an emergency stop without causing yourself too much discomfort, when you do start driving.

Work

When you can return to work may be determined by the emotional and physical demands of your job. It is best not to start work until you feel completely well as you may feel tired and unable to concentrate for a period of time. Your employer may allow you to return over a phased period to build you back up to a full working week. The options available to you should be discussed with your employer. If you are self-employed or do heavy jobs, you may need to assess more fully what you are able to do. Please discuss with your consultant surgeon who can give you advice. Macmillan offers employment and benefits advice.

Holidays and flying

If you have planned a holiday, you should only go once you feel ready to travel. Holidays involving flying should not be taken until around six weeks after your operation and you will be assessed for fitness to fly at your first outpatient appointment following surgery.

If you go away within the first 6 months after your surgery it is advised to plan a relaxing holiday with minimal travelling.
Use complete sun block over the actual scar for the first six months.
It is also advised that you get holiday insurance; the cost of insurance may alter due to your treatment. There are specialist insurance companies which can help you with this.

Signs and symptoms to look out for

If you have any of the following problems, please **see your GP or our team** (contact details are at the end of the leaflet):

- Your wound becomes red, swollen or starts leaking.
- You have increasing pain that is not improving.
- Your breathing becomes worse.
- Your wound starts to come apart.
- You feel unwell and are concerned.

If you are admitted to your local hospital within six weeks from surgery we ask that you or your family contact us directly, on the numbers at the end of this booklet, to inform us of your admission as soon as possible. This allows us to provide the best advice to your local hospital.

Contacts

If you have any question or concerns, please contact one of the numbers below.

Macmillan Advanced Physiotherapist Practitioner

Thoracic Surgery

Tel: **01865 221 736**

Macmillan Advanced Nurse Practitioner

Thoracic Surgery

Tel: **01865 223 874**

Advance Nurse Practitioner

Thoracic Surgery

Tel: **01865 572 653**

Cardiothoracic Ward

Tel: **01865 572 662**

Co-ordinator (if the Ward are unable to answer the phone)

Tel: **01865 572 657**

Further resources

Macmillan Cancer Support

www.macmillan.org.uk

0808 239 75 65

Macmillan Prehabilitation Videos

https://www.macmillan.org.uk/cancer-information-and-support/%20stories-and-media/videos/prehabilitation-videos

Roy Castle Lung Cancer Foundation

www.roycastle.org

0333 323 7200

Hospital Chaplaincy

01865 857 921

Patient Advice and Liaison Service (PALS)

PALS@ouh.nhs.uk

01865 221 473

Further information

If you would like an interpreter, please speak to the department where you are being seen.

Please also tell them if you would like this information in another format, such as:

- Easy Read
- large print
- braille
- audio
- electronic
- another language.

We have tried to make the information in this leaflet meet your needs. If it does not meet your individual needs or situation, please speak to your healthcare team. They are happy to help.

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Oxford University Hospitals NHS Foundation Trust
www.ouh.nhs.uk/information

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