NHS
University Hospital Southampton
NHS Foundation Trust

Thymectomy (VATS or RATS)

Information for patients

We have given you this booklet because you are due to have a thymectomy via either a video-assisted thoracoscopic surgery (VATS) or robotic-assisted thoracoscopic surgery (RATS) approach.

This booklet explains what a thymectomy is, what the procedure involves, and the benefits and risks. We hope it will help to answer some of the questions you may have. If you have any further questions or concerns, please contact us using the details at the end of this booklet.

What is the thymus?

The thymus gland sits behind the breastbone (sternum). Until puberty, it helps the immune system fight infection and disease. After puberty, the thymus gland no longer helps the immune system. It shrinks so only fatty tissue remains.

What is a thymectomy?

A thymectomy is a surgical procedure to remove the thymus gland.

There are different ways to carry out a thymectomy. This booklet will explain the following two approaches in more detail:

- **Video-assisted thoracoscopic surgery (VATS)**
  This is a type of minimally invasive thoracic surgery (also known as 'keyhole' surgery). It allows a surgeon to use only small cuts and a thoracoscope (a special instrument with a small camera attached at the end) for procedures inside the chest and lungs.

- **Robotic-assisted thoracoscopic surgery (RATS)**
  Similar to VATS, RATS is also a type of keyhole surgery. However, instead of the surgeon holding the thoracoscope and surgical instruments, a robotic platform with robotic 'arms' holds and moves them. The robot is controlled by the surgeon sitting at a console in the operating theatre.

Why do I need a VATS or RATS thymectomy?

You have been referred to a thoracic (chest) surgeon because a recent chest x-ray or CT scan (a test that takes detailed images of the inside of the body) has shown:

- an abnormality in your chest
- a swollen thymus gland

This may mean that you have a thymoma (a tumour). A thymoma can spread from the thymus to the lung or the pleura (the lining of the lung) so needs to be removed.

Thymomas are also associated with myasthenia gravis (a rare long-term condition that causes muscle weakness). Removing the thymus gland can help to improve symptoms of myasthenia gravis and, in some cases, can result in a reduction or disappearance of the signs and symptoms of the disease (known as remission).

Your surgeon will discuss why a VATS or RATS thymectomy is needed in your case.

What are the benefits of VATS and RATS?

Compared to other surgical approaches, a VATS or RATS approach has many benefits, including:

- a shorter stay in hospital
- a quicker recovery time
- less pain and discomfort
- smaller skin incisions (cuts)
- a quicker return to your normal daily activities

The approach we will use for your thymectomy will depend on your condition and individual circumstances. However, if you have a thymoma, a VATS or RATS approach is typically the recommended approach as it offers the best treatment (although some people may still need further treatment after the procedure). Your surgeon will discuss this with you in more detail before your procedure.

What are the risks of a VATS or RATS thymectomy?

As with all surgical procedures, there are some possible risks and complications associated with having a VATS or RATS thymectomy.

Minor complications include:

- damage to teeth
- a chest infection (moving around early on will help to prevent this)
- wound infection (using the antiseptic body wash we have given you can help to prevent this)
- a faster heartbeat (this can be treated with medication)
- a small amount of bleeding into the chest drain

Major complications (which are less common) include:

- a collapsed lung (if this happens, you may need to stay in hospital longer to have a chest drain reinserted)
- blood clots (to reduce this risk, we will give you blood-thinning injections, compression stockings to wear and we will also get you moving around as soon as possible after your procedure)
- heart attack or stroke
- a large amount of bleeding into the chest drain (if this happens, you may need a blood transfusion (when you receive blood from someone else))
- recurrent laryngeal and phrenic nerve dysfunction leading to a change in strength and quality of voice and/or breathlessness (if this happens, you may need additional treatment)

Occasionally, for technical reasons, the surgeon may not be able to perform the procedure using the VATS or RATS approach. If this is the case, the surgeon will perform the procedure using an 'open' approach (for example, a sternotomy and/or thoracotomy). An open approach involves the surgeon making a larger incision in your chest so that they can gain better access to your chest cavity. Your surgeon will discuss this with you in more detail before your procedure.

How should I prepare for the procedure?

Clinic appointment

Before the procedure, you will have a clinic appointment with your surgeon. This appointment may be by telephone or face-to-face. Please see your appointment letter for more details.

During this appointment, your surgeon will explain:

- the different types of procedures to remove lung and chest tumours
- why a VATS or RATS thymectomy is recommended
- what the procedure involves
- the benefits and risks of the procedure
- alternative treatments

Together, you will decide whether you wish to go ahead with the procedure. If you do wish to go ahead with the procedure, we will ask you to sign a consent form either at this appointment or on the day of your procedure.

Pre-assessment appointment

If you decide to have the procedure, you will need to come to hospital for a pre-assessment appointment.

During the pre-assessment appointment, we will:

- perform blood tests
- perform an electrocardiogram (a heart tracing test)
- take a full set of observations to check your blood pressure, pulse, oxygen levels, temperature and breathing rate
- measure your height and weight
- take swabs from your nose and groin to check for MRSA (a bacteria that usually lives harmlessly on the skin but can cause a serious infection if it gets inside the body)

We will also:

- explain the procedure to you and answer any questions you may have
- advise when to stop eating and drinking before your procedure
- advise if you need to temporarily stop taking any medications before your procedure
- give you an antiseptic skin wash solution to use and explain how to use it (you will need to wash your whole body and hair before your procedure in this solution to help prevent infections occurring after your procedure)

General anaesthetic

The procedure will be performed under general anaesthetic (medication that sends you to sleep) so you will not feel anything.

To ensure you are well enough for a general anaesthetic, an anaesthetist (a specialist doctor) will visit you before your procedure to ask you some questions about your medical history and your general health and lifestyle. This may be at your pre-assessment appointment or on the day of your procedure.

There is a slight risk that your teeth may be damaged during the procedure. To help reduce this risk, please let the anaesthetist know if you have dentures, any loose teeth or crowns.

Smoking

We recommend stopping smoking before and after your procedure. You should also avoid smoky environments. This will help to reduce your risk of developing a chest infection and will also help to keep your oxygen levels steady after the procedure. We can provide you with nicotine patches after your procedure, if necessary. We can also give you details of services that can help you to stop smoking.

What will happen on the day of the procedure?

When you arrive for your procedure (please see your appointment letter for where you need to go), we will ask you to change into a hospital gown. We will also give you compression stockings to wear (these will help to prevent blood clots, also known as deep vein thrombosis or DVT, from developing in your legs).

The anaesthetist will then visit you (unless they spoke to you at your pre-assessment appointment).

We will explain the procedure to you again and answer any questions you may have. If you are happy to go ahead with the procedure, we will then ask you to sign a consent form (if not already done at your clinic appointment).

Before your procedure, we will use a marker pen to mark the side of your body that we are going to operate on. Please let a member of staff know if this mark comes off before your procedure.

We will give you two name bands to wear. These let staff know your:

- name
- date of birth
- hospital number

If you have any allergies, we will also give you a red band to wear. Please let a member of staff know if you lose your name band or red band, or if any of the information on either band is incorrect.

Before going to the operating theatre, we will complete a checklist with you (this will be repeated several times when you go to theatre). We will then take you to a room where the anaesthetist will give you a general anaesthetic. This will usually be given as an injection through a cannula (a thin tube) inserted into a vein in the back of your hand or arm. Rarely, it may be given as a gas through a face mask. The anaesthetist will decide which option is most appropriate for you and will discuss this with you.

What will happen during the procedure?

Once the anaesthetic has taken effect and you are asleep, we will move you to our operating theatre.

We will position you slightly on your side, with your arm above your head. This is so that we can gain access to the side of your chest. We will then clean the area of your chest that we are going to operate on with some antiseptic solution.

The surgeon will make small cuts (about 2 to 4cm long) on your chest. One cut will be for a thoracoscope (telescope) to look around inside your chest and the other cuts will be for the instruments to perform the procedure and remove the abnormality. The thymus or mass that has been removed will then be sent to the laboratory for testing. Once the procedure is complete, the surgeon will close these cuts with dissolvable stitches (stitches that do not need to be removed).

The surgeon will also insert a tube into your chest (known as a chest drain) to drain any excess air and fluid after the procedure. Please see the ‘Chest drain’ section on page 10 for more information about this.

We will place dressings over your wounds after the procedure.

Changes to the planned procedure

Depending on what the surgeon finds when they look into your chest, they may have to make some changes to your planned procedure. The surgeon will only do what is appropriate for your condition.

We will discuss these possible changes with you before your procedure as part of the consent process. If any changes need to be made to the planned procedure, we will explain what these were and the reasons for the changes after your procedure.

How long will it take?

The procedure will usually take between two and four hours.

What will happen after the procedure?

After the procedure, we will take you to our recovery room where you will gradually wake up from the general anaesthetic. You will stay in the recovery room until you are more awake and stable (this usually takes around two hours). During this time, we will monitor you regularly to check that you are recovering well, and your pain is controlled.

We will then transfer you to E4 ward, where we will continue to monitor you.

You may need to have oxygen for the first few hours after your procedure. If this is the case, we will give this to you through a face mask or nasal tubes.

You should expect to stay on the ward for one to two days after your procedure. We will advise you when it is safe for you to go home.

Side effects
After the procedure, it is common to experience some of the following side effects:
- tiredness
- a sore throat for a few days (you can take over-the-counter pain relief medication to help ease this)
- a cough which brings up a small amount of blood (this should stop after a few days)
- low blood pressure (this will usually improve as you drink more fluids)
- a painful shoulder (this should improve with pain relief medication and movement)
- numbness, tingling and pins and needles around your wounds and at the front of your chest (this is normal and will usually improve as your wounds heal)
- a bulge at the lower part of the front of your chest and upper stomach area (this is normal and is from loss of muscle tone from the procedure)

Pain
After your procedure, we will inject some local anaesthetic around your wounds to numb the area. We will also give you some additional pain relief medication to help ease any pain. This may be in the form of tablets or liquid that you take by mouth, or we may give you the medication via your cannula.

We will monitor your pain levels and amend your pain relief medication as needed.

Chest drain
We will monitor your chest drain and decide when it is safe to remove it (this will depend on what it has drained). After we have removed the chest drain, we will close the wound with one to three stitches. **These stitches are not dissolvable and will need to be removed seven to ten days later.** We will give you a letter telling you how to arrange this with a nurse at your GP surgery.

Eating and drinking
You can eat and drink as usual after the procedure. However, you may find that you have a reduced appetite. This is normal.

Movement
We will help you to get up and walk around as soon as possible after the procedure.

Moving after the procedure will help to:
- improve your blood circulation
- expand your lungs
- prevent chest infections

We will support you in doing this until you are confident moving around the ward on your own.

To help prevent blood clots, we will give you blood-thinning injections each day you are in the hospital. You will also need to wear compression stockings. If you need any help with moving or deep breathing, speak to a nurse who will contact a physiotherapist for support.

What should I expect when I go home?
When you are ready to go home, we will go through your discharge summary with you and give you aftercare instructions and advice.

We will return any medication you brought into hospital to you (unless it has been stopped by your doctors during your hospital stay).

We will also give you a supply of medication. This will include:
- any of your own supply that has run out
- any new tablets that we have started you on (for example, pain relief medication or medication for your bowels)

All medication will be labelled with instructions on how and when to take it. Please make sure you understand these instructions before you go home.

You will need to arrange for someone to pick you up from the hospital when you are ready to go home as you will not be able to drive yourself home.

Pain relief medication

You should take pain relief medication regularly. Most people will need to take some form of pain relief medication for two to three weeks after the procedure. Your general practitioner (GP) will be able to prescribe you more pain relief medication if you need it. Please make sure you do not exceed the maximum dose of pain relief medication.

Once your pain starts to improve, you can gradually reduce how much pain relief medication you take.

Rest and activities

It is normal to feel tired for the first week or more after you arrive home. It is important that you rest during the day and you should try to go to bed at the same time each night.

We recommend having someone at home with you for the first few days, if possible, to help with heavier housework, such as vacuuming or loading the washing machine.

You may find that normal day-to-day activities, including having visitors, can make you feel tired. You should increase your daily activities gradually. Avoid any activities that cause you pain until you are further along in your recovery.

It is very common to feel tired or have a lower mood than usual after having surgery. If you have any concerns about your recovery, contact the thoracic nurse specialists or your GP for advice and additional support.

Wound care and dressings

It is normal to have some numbness, tingling and pins and needles around your wounds and at the front of your chest. There may also be a slight bulge at the lower part of the front of your chest and upper stomach area. This is normal and is due to loss of muscle tone from the procedure. This will settle over time, but it can take several weeks. In rare cases, you may be left with a permanently numb area or slight bulge.

All dressings are usually removed before you go home. However, you may go home with some light dressings over your wounds. If this is the case, you can remove these dressings 48 hours after your chest drain has been removed. The wounds should then be left exposed if clean and dry.

Your wounds will normally take two to four weeks to heal.

Contact the thoracic nurse specialist, the ward you were being cared for on or your GP if:

- you are worried about how your wounds are healing
- your wounds become more painful, red, inflamed or start to ooze

Washing

When you shower or bathe, you should:

- use warm water
- make sure there is someone nearby in case you need help
- take care when washing around the wounds
- pat the wound areas dry carefully with a clean towel

You should **not**:

- use very hot water (this may make you feel faint)
- soak the wounds in the water
- put lotions or powder on your wounds until they are fully healed

Eating and drinking

It is normal to have a poor appetite after your procedure. You should try to eat little and often. Your appetite should improve as you become more active.

Make sure you are drinking enough fluid (six to eight glasses a day).

Driving

You will be able to resume driving once you have stopped taking strong pain relief medication and are comfortably able to sit in a car and perform all the manoeuvres safely (for most people, this is usually two to three weeks after the procedure).

If you find driving difficult because of pain or restrictions in your mobility, you should rest for a few days before trying again.

Returning to work

Most people will need to take approximately two to three weeks off work after their procedure. However, if your job is very physical (for example, a gardener or labourer), you may need to take a longer time off work.

You will be able to self-certify as sick for seven days. After that, your employer may want to see a medical certificate. Please ask us for a medical certificate (sick note) before you leave hospital. If you need an extended medical certificate, you can speak to your GP.

When will I receive my results?

It usually takes two to three weeks for the results to come back from the laboratory. Once the results are back, we will send them to the doctor who referred you for the procedure. Your doctor will then contact you to discuss these and/or arrange a follow-up appointment.

What follow-up care will I receive?

Before you leave hospital, we will advise you if you need a follow-up appointment. This appointment will usually be four to six weeks after your procedure. We will telephone you to confirm the date and time of this appointment a few weeks before it is due. Please note that this follow-up appointment may be via telephone or face-to-face.

At this follow-up appointment, the surgeon or thoracic nurse specialist will discuss:

- your results
- your procedure
- your recovery
- whether you need any further treatment

You will be able to ask any questions or voice any concerns you have at this appointment.

Contact us

If you have any questions or concerns, please contact us.

Thoracic nurse specialist
Telephone: **023 8120 8457** (Monday to Friday, 8am to 4pm, Saturday, 8am to 1pm)

Outside of these hours, contact:

E4 ward
Telephone: **023 8120 6498** (24-hour line)

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Version 1. Published August 2025. Due for review August 2028. 3203