

Cardiothoracic Surgery

Video-assisted thoracoscopic surgery (VATS)

What is video-assisted thoracoscopic surgery (VATS)?

VATS is a surgical procedure that allows doctors to see inside the chest and lungs. It is a form of 'keyhole' surgery which can be used to do a number of different surgical procedures.

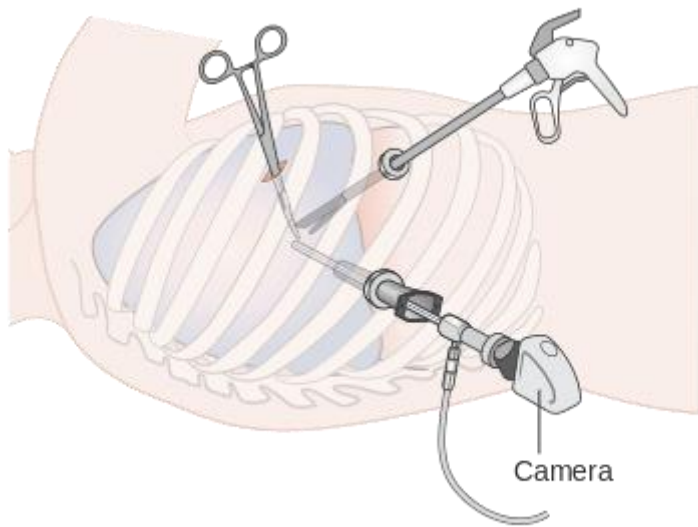
What does VATS involve?

VATS uses a special instrument with a small camera attached at the end, called a thoracoscope. The camera transmits images back to a video display so the Surgeon can see into the chest cavity.

VATS consists of one or more small incisions, depending on the surgeon's preference. The surgeon usually inserts other surgical instruments into the incision/ incisions. These instruments can be used to remove abnormalities seen on an X-ray or CT scan. Once the operation is finished, the instruments are removed, and the incision/incisions are closed.



Patient Information



“[Video-assisted thoracoscopy](#)” by [Cancer Research UK](#) is used under [CC BY SA 4.0](#)

What is VATS used for?

- Taking biopsies from the lung or the lining of the chest wall
- Removing abnormal lumps or growths from the lung
- Removing lymph nodes
- Draining pleural effusion (where fluid builds up in the lining of the lung)
- Removal of a tumour (wedge resection, segmentectomy)
- Bullectomy (to remove Bullous disease)
- Treatment of Pneumothorax (where a lung has collapsed)
- Lobectomy (where one of the lung lobes is surgically removed)

What happens during VATS?

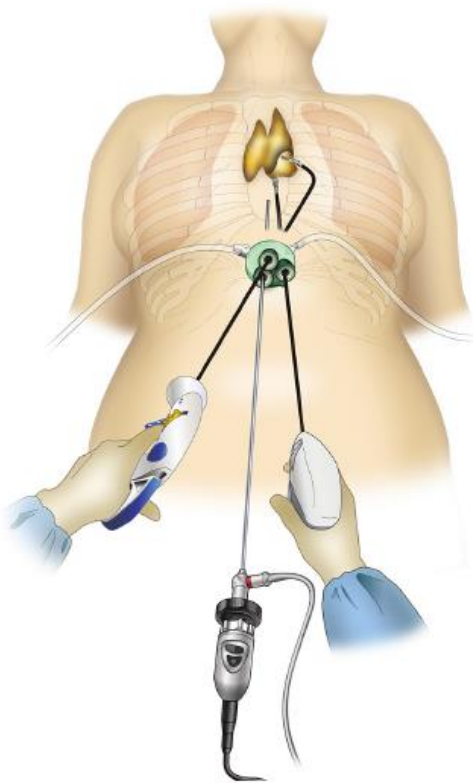
VATS is carried out in the operating theatre. It is usually done using a general anaesthetic, which means you will be asleep for the surgery. Your surgeon will make the cuts (incisions) in your chest and insert the thoracoscope and any other instruments that are needed.

Patient Information

After the surgeon has finished the surgery, they will place some small tubes into the chest. These are known as 'chest drains' and let any fluid or air that collects leak out. Any samples of tissue taken from your chest or lungs will be sent to the laboratory for further testing.

Types of VATS approach

- Transthoracic
- Subxiphoid



Number of ports

- Uniport (standard)
- Multiport

Occasionally, although it was planned to use VATS, it is not possible to carry out your operation using keyhole surgery. This means another technique such as an open procedure (thoracotomy) may need to be used. Your doctor should discuss this with you before the procedure.

What are the associated risks with VATS?

All surgical procedures and treatments have risks and your surgeon will discuss the VATS associated risks with you.

What can happen straight away?

- Air leaks
- Bleeding (conversion to open surgery)

What may occur later?

- Chest infection
- Wound infection
- Blood clots

Serious, but rarely encountered problems

- Other risks involved with general anaesthesia (these will be discussed with you).

You should contact your doctor if you become unwell after VATS. Especially if you have one of the following problems: high temperature (fever), chest pain, coughing up blood, shortness of breath or if the wound site becomes red, inflamed and draining pus.

What happens if I chose not to have VATS? Any alternatives?

You can choose not to have the procedure done by VATS; however, this was thought to be the best approach at the time you were assessed by your doctor. The course of action for your treatment plan is based on a comprehensive assessment of your condition and is considered to be the most appropriate way of treating your condition.

Patient Information

If you have any reasons why you do not wish to proceed with VATS surgery, your chest doctor and chest surgeon and will respect your decision and support you in every way they can. Please take time to discuss with your chest doctor or surgeon who will be happy to explain your options as clearly as possible.

How should I prepare for VATS?

Pre-assessment: An appointment will be given to you to attend the outpatient pre-assessment clinic to have the following tests:

- Blood tests
- ECG (Electrocardiogram- a simple test that traces the electrical activity of your heart)
- Recent Chest X-ray
- Pulmonary function tests (breathing tests) if indicated
- MRSA screening (a simple nose swab to test for Methicillin-Resistant Staphylococcus Aureus. This helps reduce the chance of patients acquiring a MRSA infection or passing an existing infection on to other patients)
- A full set of observations (blood pressure, pulse, respiratory rate, oxygen levels, temperature, height and weight)
- You may need other tests that are specific to you (these will be explained).

During the outpatient appointment please tell the Doctor if you need any help after the operation. We kindly advise you to make arrangements for a relative or friend to accompany you to the hospital and take you home after the procedure.

Eating well: A well balanced diet will help you be in the best condition prior to your surgery.

Stop smoking: We strongly recommend you stop smoking before the surgery as this reduces the risk of breathing problems and developing a chest infection.

Patient Information

Reduce alcohol intake: We strongly advise you reduce your alcohol intake if you drink more than 21 units for a man and 14 units for a woman a week. Alcohol can make you dehydrated when fasting for a long period of time.

Fast: You will have a general anaesthetic and you will need to not eat or drink for a certain length of time before the surgery. Further information will be provided to you by the anaesthetists, surgeons and nurses.

Are you taking anticoagulants/antiplatelets? If you are taking anticoagulants/antiplatelets such as Warfarin, Dabigatran, Rivaroxaban, Apixaban, Aspirin, Clopidogrel please check with the Doctor or Surgeon if they **need to be stopped and for how long**. Depending on the reason you are taking these medications, the period of time to stop will vary and in some instances, we will need to support you with alternative medications to take before surgery.

Support at home: Before you come to the hospital, please make arrangements for a relative or friend to support you during the recovery time. You will need help with shopping, cooking and housework.

Admission to hospital

On the day of your admission you will be given information about fasting. You will receive a letter from the Surgeon's Secretary with clear instruction for you to follow.

When you arrive, the Surgeons, the Anaesthetist and the Nurses will complete the final pre-operative checklist. If you have not been pre-assessed you will need to have investigations such as blood tests, MRSA screening, ECG, chest X-ray. If you do not have these investigations, your surgery may be delayed.

On the day of your operation you will have a shower or full wash in an antiseptic solution and will be asked to put on a hospital gown.

Patient Information

Before going to theatre: You will be given Thrombo-Embolic stockings, which help prevent you from developing blood clots (DVT) in your legs, due to being immobile for a length of time during and after the operation. You will need to wear them until you are discharged home.

Asking for your consent

We encourage you to be fully involved in the decisions regarding your care and treatment. If you decide to go ahead with the procedure, we will ask you to sign a consent form. This is a legal requirement which confirms you agree to have VATS and understand all the information given to you.

What happens after VATS?

Recovery: You will wake up in theatre and be transferred to the High Dependency Unit or the Ward, depending on the complexity of your procedure. The Nurses will inform you relative that you have arrived and when they can visit you. You may feel woozy, thirsty or cold after waking up from general anaesthesia.

Chest drain: During the surgery your lung is deflated. To enable it to re-inflate and to drain any fluid or air, a flexible tube is inserted in your chest cavity and is then attached to a bottle on the floor. This is usually connected to a wall suction. After the operation, nurses will regularly check for drainage and air bubbles in the bottle, to make sure your lung is re-inflating.

Oxygen: After the operation, you will be given oxygen via a mask to help maintain your oxygen levels.

Pain: Normally, a small catheter for local anaesthetic block will be inserted during your operation. The Nurses will also administer medication to ease your pain.

Eating and drinking: When you feel ready, you can start eating and drinking. Start with small nutritious snacks and build up to a normal healthy diet. If you have lost weight before your operation, a Dietician will come and see you.

Patient Information

Bowels: Regular bowel habits may be affected by surgery. To encourage bowel movement, drink plenty of fluids and take short walks whenever possible. Pain relief medication often causes constipation, so your Doctor will prescribe laxatives to help with your bowel movements.

Moving around: We recommend you breathe deeply, cough and move around as much as possible. The Nurses will help you sit in a chair by your bedside in the first day after your operation, and later to walk around on the ward. If you experience any difficulties, a Physiotherapist will visit you.

Wound: The nurses will clean and dress your wound while you are in hospital and will usually arrange for the District Nurses to check your wound when you are at home.

Hospital stay: The average hospital stay after VATS is three days, but it may shorter or longer depending on your recovery.

Medications: We will supply you with any **new** medication that you might need, such as painkillers and laxatives. Please make sure you have your own supply of regular medications. Further required medication will be supplied by the GP if required.

It is normal to feel numbness, stinging or tingling around the wound area or around the side of your chest. In some people, it may take up to six weeks for this to settle.

Please tell us about your experience from your stay

We are committed to improving our services and would like to hear your experiences about your stay with us.

Patient Information

The Trust has access to interpreting and translation services. If you need this Information in another language or format, please contact 024 7696 4000 and we will do our best to meet your needs.

The Trust operates a smoke free policy.

If you would like to offer any comments, compliments, or complaints, regarding our services at the hospital please use this web link: www.uhcw.nhs.uk/contact-us. You can also write to us or telephone us. Tel. 024 7696 4000.

Diagram of subxiphoid VATS is from Suda T. Subxiphoid VATS thymectomy for myasthenia gravis. Video-assist Thorac Surg 2017;2:15, used under [CC BY-NC-ND 4.0](https://creativecommons.org/licenses/by-nc-nd/4.0/).

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Document History

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