

Cardiothoracic Surgery

Robotic Assisted Thoracoscopic Surgery (RATS)

This leaflet provides information about Robotic Assisted Thoracoscopic Surgery (RATS). RATS is also known as “robotic keyhole surgery”.

This leaflet explains what care you will need before and after your operation. The care that you receive will be specific to your needs.

Why do we use robotic-assisted surgery?

Robotic-assisted surgery helps your surgeon deliver your care.

Using this technology assists your surgeon by enhancing their skills and abilities. We use the DaVinci® robotic surgical system.

When using the DaVinci® robotic surgical system:

- your surgeon stays with you in the operating room.
- your surgeon views the entire operation in 3D HD (high definition). This gives a clear view of the surgical area that is greatly magnified.
- your surgeon uses their own hands to control a camera and surgical instruments to perform your procedure.
- your surgeon controls surgical instruments that move like a human hand, but with a greater range of motion.
- your surgeon uses tremor-filtration technology that helps them move each instrument smoothly and precisely.



What is the robotic surgical system?

We use the DaVinci® robotic surgical system.

This system consists of three main components:

Surgeon console

The console is where your surgeon sits to perform the operation. It is the control centre for the system.

Patient's side cart

The patient's side cart holds the camera and surgical instruments that your surgeon controls from the console.

Vision cart

The vision cart manages connects the system and provides a screen for the care team to view the operation.

Care team

There will be several members of hospital staff in the operating room during a robotic-assisted procedure. Each person is part of your care team. They all have an important role in your surgery.

Potential benefits of robotic surgery

- less pain
- reduced blood loss and need for blood transfusion
- lower risk of complications
- lower risk of needing open surgery.
- shorter hospital stay
- faster recovery and return to your normal activities

What is RATS used for?

- taking biopsies (small sample) from the lung or chest wall lining
- removing abnormal lumps or growths from the lung
- removing lymph nodes
- draining pleural effusion (fluid build-up in the lung lining)
- tumour removal (wedge resection, segmentectomy)
- bullectomy (to remove bullous disease)
- pneumothorax treatment (where a lung has collapsed)
- lobectomy (removal of one of the lung lobes)

What happens during RATS?

RATS is used in the operating theatre, and you would normally have a general anaesthetic. This means you will be asleep for the surgery.

Your surgeon will make the incisions (cuts) in your chest and insert the robotic thoracoscope and any other robotic instruments that are needed.

Your surgeon will insert some small tubes into the chest after they finish the surgery. The tubes are called 'chest drains'. They allow fluid or air that collects inside your chest to leak out after your surgery. Any samples taken from your chest or lungs will be sent to a laboratory for testing.

Sometimes it is not possible to carry out your operation using RATS, even though we planned to. This means another technique such as an open surgery (thoracotomy) may be needed. Your doctor should discuss this with you before the procedure.

Risks

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

What can happen during or just after surgery?

- air leaks
- bleeding (conversion to open surgery)

Patient Information

What can happen after surgery?

- chest infection
- wound infection
- blood clots

Serious but rare complications

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

You should contact your doctor if you become unwell after surgery.

Contact your doctor if you have any of the following:

- high temperature (fever),
- chest pain
- coughing up blood
- shortness of breath
- wound site becomes red, inflamed, or leaking pus

What happens if I choose not to have RATS?

You can choose not to have RATS. Your doctor thought RATS was the best approach at the time you were assessed.

Your treatment plan is based on a comprehensive assessment of your condition.

If you have any concerns regarding RATS, your chest doctor and chest surgeon will be happy to address your concerns. They will explain your other surgical options clearly, they will respect your decision and they will support you.

How should I prepare for RATS?

Pre-assessment

You will receive an appointment to go to the outpatient pre-assessment clinic to have the following tests:

- blood tests
- ECG (electrocardiogram- a test for the activity of your heart).
- chest X-ray.
- pulmonary function tests (breathing tests) if needed.
- MRSA screening (a nose swab to test for Methicillin-resistant Staphylococcus aureus). This reduces the chance of patients getting an MRSA infection or passing an infection to other patients).
- a full set of observations (blood pressure, pulse, respiratory rate, oxygen levels, temperature, height, and weight)
- other tests that are specific to you

Planning ahead

During your outpatient appointment, please tell your doctor if you need any special arrangements for after your operation.

On the day of your surgery, we ask that a relative or friend comes with you to the hospital and takes you home after your surgery.

Eat well

A well-balanced diet will help you be in the best condition before your surgery.

Stop smoking

We strongly advise that you stop smoking before your surgery.

This reduces the risk of breathing problems and developing a chest infection.

Patient Information

Reduce your alcohol intake

We strongly advise that you reduce your alcohol intake if you drink more than:

- 21 units for a man per week
- 14 units for a woman per week

Alcohol can make you dehydrated when fasting for a long period of time.

Are you taking anticoagulant or antiplatelet medicine?

Please tell your doctor or surgeon if you are taking anticoagulant or antiplatelet medicine. This may need to be stopped before your surgery.

Anticoagulant or antiplatelet medications include:

- warfarin
- dabigatran
- rivaroxaban
- apixaban
- aspirin
- clopidogrel

The time to stop will depend on the reason you are taking these medications. You may need alternative medications before surgery.

Support at home

Please plan for a relative or a friend to support you during the recovery time **before** you come to hospital for surgery. You will need support with shopping, cooking, and housework after your surgery.

Admission to hospital

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

Surgeons, anaesthetists, and nurses will complete a final pre-operative checklist with you. If you have not been pre-assessed, you will need to have tests such as blood tests, MRSA screening, ECG, and chest X-ray.

Your surgery may be delayed if you do not have these tests.

Patient Information

Fasting

You will be asked to fast for a length of time before your surgery.

Further information will be provided to you by the anaesthetists, surgeons, and nurses.

Before going to the operating theatre

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

You will be given thrombo-embolic stockings to wear. They lessen the risk of developing blood clots (DVT) in your legs. You will need to wear them until you are discharged and can go home.

Asking for your consent

We want you to be fully involved in the decisions regarding your care and treatment. If you decide to have the surgery, we will ask you to sign a consent form. This is a legal requirement which confirms your agreement to have RATS and that you understand all the information given to you.

What happens after RATS?

Recovery

You will wake up in the operating theatre and you will then be transferred to the High Dependency Unit or a hospital ward. Where you go will depend on your surgery. The nurses will contact your relatives to let them know that you have arrived and when they can visit you.

You may feel dizzy, thirsty, or cold after waking up from general anaesthesia.

Chest drains

Your lung is deflated during your surgery. A flexible tube is then inserted into your chest to re-inflate your lung and to drain any fluid or air. The flexible tube is attached to a bottle on the floor. The bottle is usually connected to a suction.

Your nurses will regularly check for drainage and air bubbles in the bottle to make sure your lung is re-inflating.

Patient Information

Oxygen

You will be given oxygen using a mask after your surgery. This is to help maintain your oxygen levels.

Pain

A small catheter for local anaesthetic block will be inserted during your surgery. Your nurses will give you medicine to ease your pain.

Eating and drinking

You can start eating and drinking when you feel ready. Start with small nutritious snacks and build up to a normal healthy diet.

If you have lost weight before your surgery, a dietician will come and see you.

Bowels

Your bowel habits may be affected by surgery. To encourage bowel movement, drink plenty of fluids and take short walks whenever you can.

Your doctor will prescribe laxatives to help with your bowel movements as pain relief medicine often causes constipation.

Moving around

We recommend that you breathe deeply, cough and move around as much as possible.

Your nurses will help you sit in a chair by your bedside in the first day after your surgery. Later they will help you to walk around the ward.

A physiotherapist will visit you if you have difficulties.

Wound

Your nurses will care for your wound while you are in hospital.

They will arrange for district nurses to check your wound when you return home.

It is normal to feel numbness, stinging or tingling around your wound area or around the side of your chest. This may last up to 6 weeks.

Patient Information

Length of your hospital stay

The average hospital stay after RATS is 3 days. It may be shorter or longer depending on your recovery.

Medicine

We will supply you with any new medicines that you might need, such as painkillers and laxatives.

Please make sure you have your own supply of your regular medicines with you.

If you require medicines after your leave hospital, this will be supplied by your GP.

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.

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