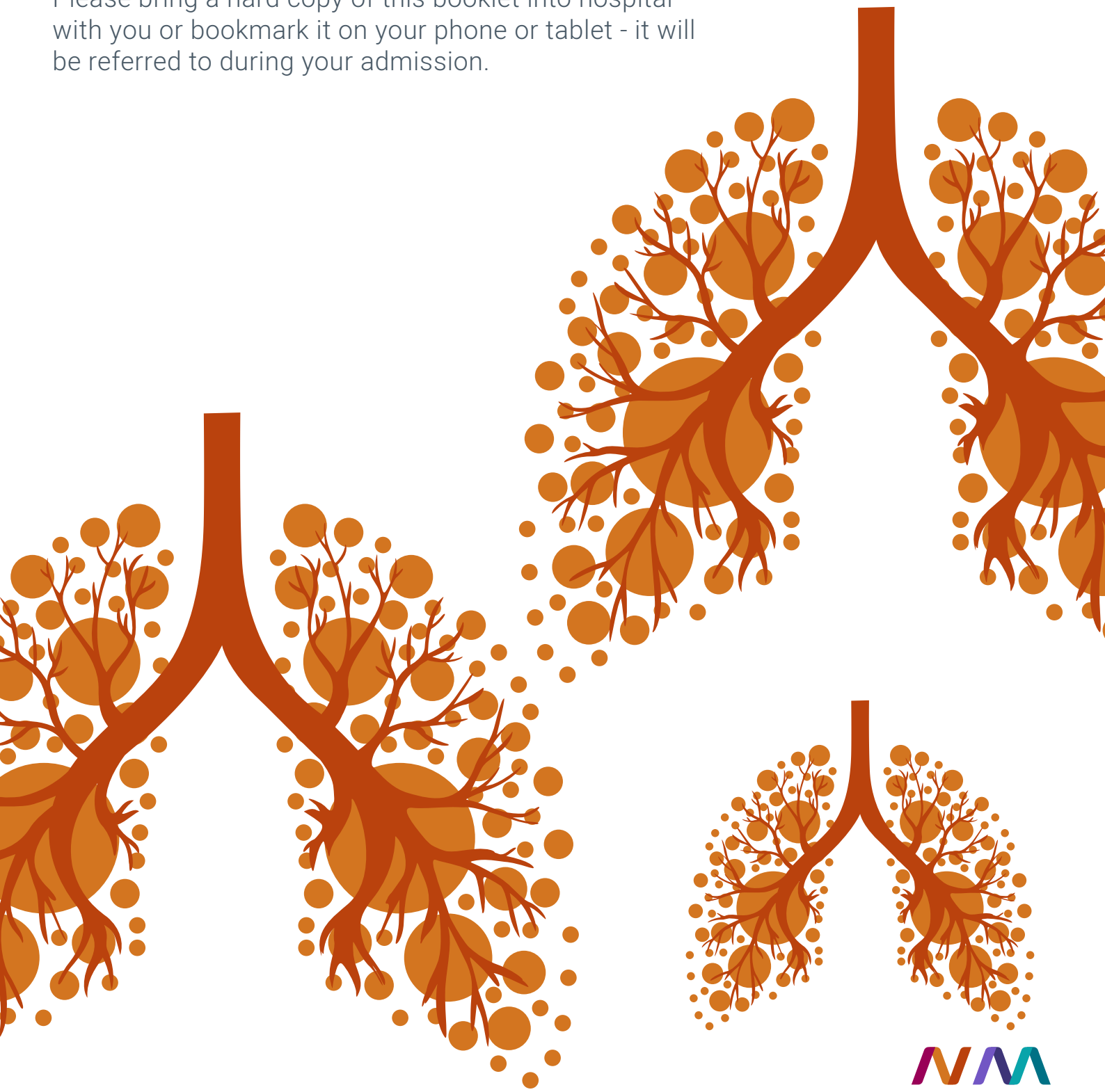
Government of **Western Australia**
North Metropolitan Health Service
Sir Charles Gairdner Osborne Park Health Care Group

Thoracic surgery

Patient information

Please bring a hard copy of this booklet into hospital with you or bookmark it on your phone or tablet - it will be referred to during your admission.



Contents

Introduction

Welcome to Sir Charles Gairdner Hospital. This booklet has been designed to help patients undergoing thoracic surgery, and their families, better understand what will happen during their hospital stay. It will also help prepare you for your return home.

Please feel free to ask any questions at any time.

Type of surgery _____

Date of surgery _____

Your surgeon is _____

Your patient educator is _____

Your physiotherapist is _____

Admission to hospital

As per your admission letter, you will either be admitted on the day of your surgery or the night before.

If you are being admitted on the day of surgery, you will need to call the Short Stay Unit (SSU) on (08) 6457 3099 between 3pm and 5pm the day before your surgery to find out admission and fasting times.

If you are being admitted the night before, please phone Ward G62 via Switchboard on (08) 6457 3333 at 11am on the day of your admission to confirm bed availability and reporting time.

What do I need to bring?

- ✓ Toiletries in a small bag
- ✓ Any medications you are taking
- ✓ Any medications currently prescribed
- ✓ Glasses with protective cover, dentures, hearing aids if you use them
- ✓ Pyjamas or nightgown
- ✓ A hard copy of this booklet or bookmark it on your phone or tablet.

Please leave all jewellery (including wedding bands) with your family. Avoid bringing valuables and large sums of money into hospital. The television and phone service is operated via a private company; please ask for an information brochure and price list when you are admitted.

When can family members visit?

We welcome visitors; however, there is a strict rest period with no visiting between 1pm and 3pm every day. While you are in hospital, information provided over the phone is limited to your next of kin only. After your surgery you will be transferred to Ward G62. It is a good policy for visitors to check with the nursing staff before coming into the hospital to ensure that you are up to receiving visitors.

Before surgery

Diet requirements: It is very important that the week prior to your surgery you eat a healthy diet of fruit and vegetables. This will help reduce the risk of you becoming constipated after the operation.

Shave: Your nurse will clip your hair on the side of the chest to be operated on if required on the day. The shaved area extends from your breastbone around to the middle of your back and possibly your forearms.

Shower: You will be asked to shower with an antiseptic soap the morning of your surgery. This is to help reduce the risk of infection. You will be given the soap and instructions at your pre-admission clinic appointment.

Bloods/x-ray: These are taken for screening and comparison after the operation. Most of the time these will be completed in the pre-admission clinic. You will also have your blood group cross-matched in case you need a blood transfusion during your admission.

Fasting: You will be asked to fast from midnight before the surgery. However, fasting times can vary depending on the timing of your operation. You will be informed when to fast by the nurses. You will be given further information on this when you call SSU the working day prior.

Medication: Your surgeon or a member of the surgical team will inform you of what medication you can take before surgery at your pre-admission clinic appointment.

Tests: You may be required to undergo further tests/investigations prior to your surgery. This may include a CT scan, breathing test, myocardial perfusion scan, etc.

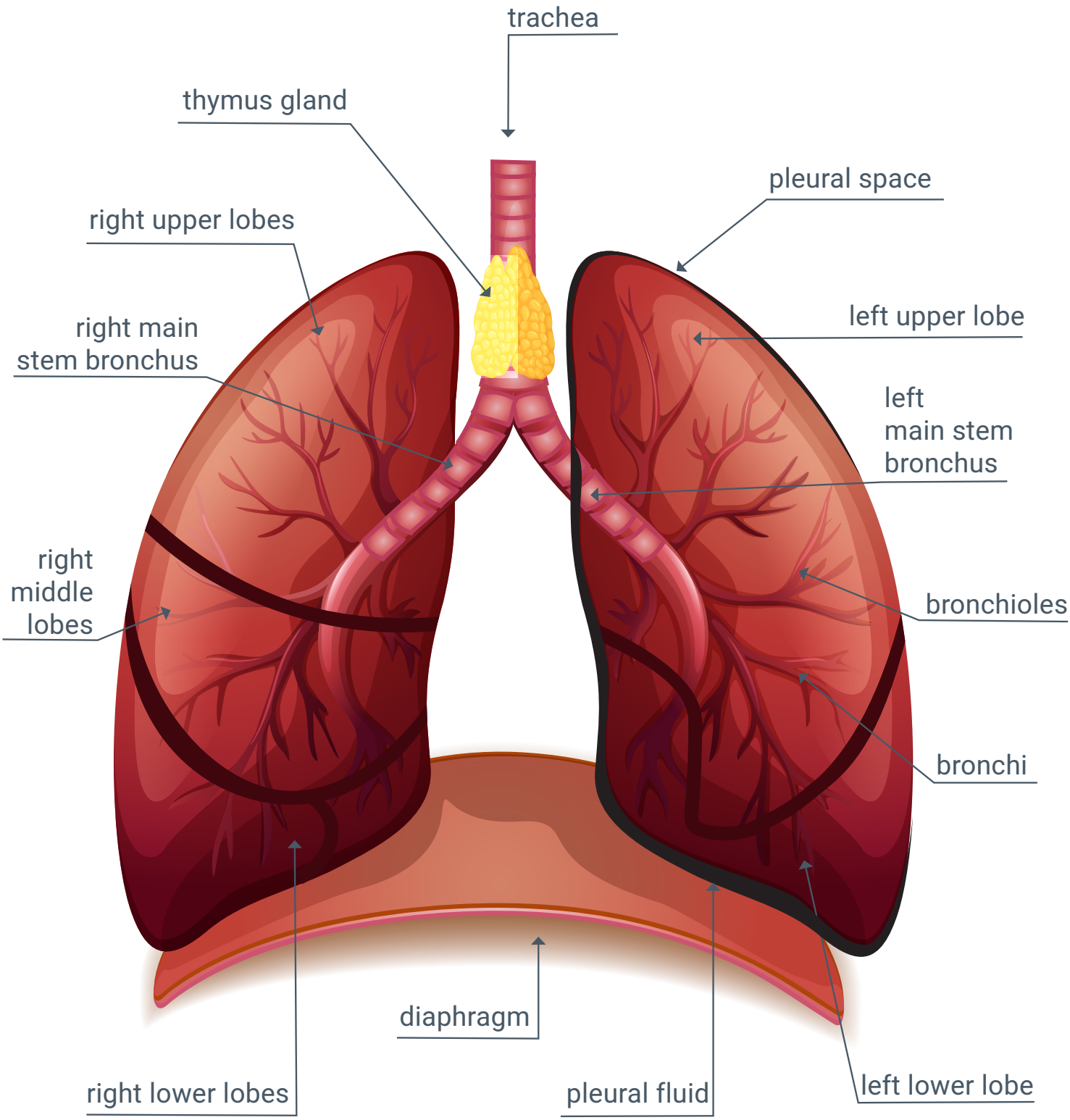
About your lungs

Your lungs fill most of the chest (thoracic) cavity, which is made up of the ribs, the breastbone and the diaphragm. When we breathe, air enters the windpipe (trachea). This divides into two branches called the left and the right bronchi. These bronchi divide into smaller branches (bronchioles), which end in small sacs (alveoli) where the exchange of gases, such as oxygen and carbon dioxide, take place.

Each lung is divided into lobes. The right lung has three lobes, while the left lung has two lobes. The left lung is smaller than the right lung to account for the space taken up by the heart. Covering each lung is a double-walled layer called the pleura. Between the pleura is a small amount of fluid, which serves to reduce friction and allow the lungs to expand easily when we breathe.

The thymus

Your thymus gland is situated in the upper chest beneath the breastbone. In the adolescent years, it is involved in the development of the immune system. After puberty, it reduces in size and is replaced by fat. In some instances, the gland can sometimes trigger the production of antibodies that result in muscle weakness (myasthenia gravis).


trachea
thymus gland
pleural space
right upper lobes
left upper lobe
right main
stem bronchus
left
main stem
bronchus
right
middle
lobes
bronchioles
bronchi
diaphragm
right lower lobes
pleural fluid
left lower lobe

Types of lung surgery

The following are different types of lung surgery. Your surgeon will discuss your operation with you.

Biopsy: Removing a sample of lung tissue for examination

Pleurodesis: The “sticking together” of the pleura

Decortication: The removal of fibrous tissue surrounding the surface of the lung (usually after an infection)

Wedge resection: The removal of a section of lung

Lobectomy: The removal of a lung lobe

Pneumonectomy: The complete removal of one lung

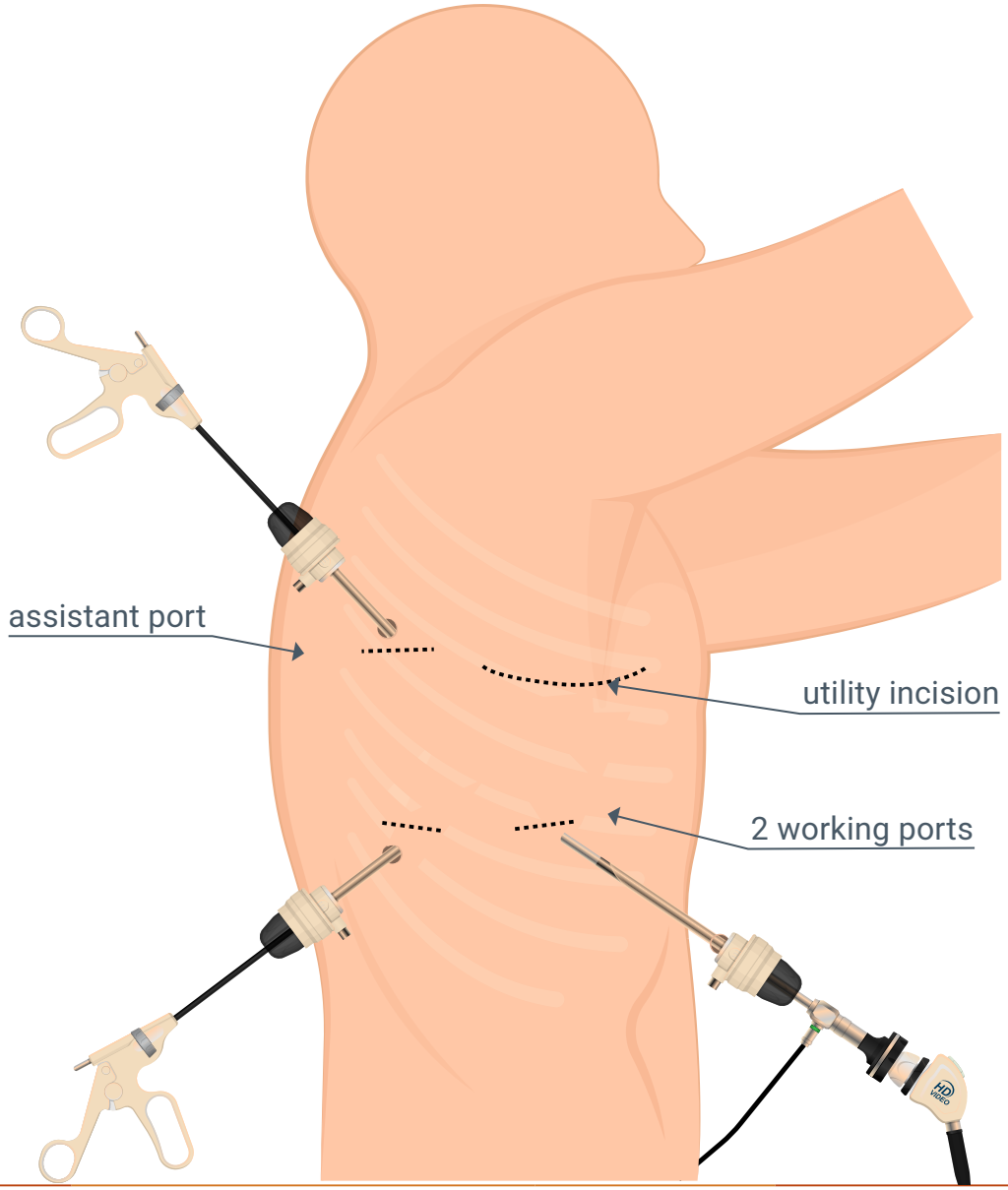
Thymectomy: The removal of the thymus gland.

The resected specimen is sent to pathology for formal examination and it can take up to 14 working days to formulate results. These results are discussed with you at your follow-up appointment within two to four weeks of your procedure.

How does the surgeon reach the lungs?

To get to the lungs there are two techniques the surgeon can use. Your surgeon will discuss this with you before your operation. One approach is **video assisted thoracoscopic surgery** (VATS), where the surgeon uses a camera to view inside the chest to perform the operation. This requires only small incisions through the skin, usually 3-5cm. However, this technique is not suitable for all operations. Thymectomy surgeries are carried out using the VAT technique on either side of your chest.

The second approach is called **thoracotomy**. This means that the incision begins midway between your waist and your armpit and follows along your ribs to the middle of your back. The wound is sutured together after your surgery using dissolvable stiches (under the skin). This incision usually takes six to eight weeks to fully heal. This practice, however, is relatively uncommon. Your surgeon may instead perform a utility incision (as illustrated below) to explore and reach the targeted part of your lung.



After surgery

After the operation you will be transferred to the recovery room where you will be monitored for an hour or two. Once stable, you will be transferred to Ward G62.

Equipment attached to you

Oxygen: You will have an oxygen mask on your face initially, but once your oxygen levels permit, your nurse will change this to the nasal oxygen. Your oxygen levels will be monitored closely and will be removed when these levels are satisfactory, and you are getting back on your feet.

Intravenous line (IV): You will have a drip in your arm through which we give you fluids and pain medication. This will usually be removed in one to two days.

Nerve block: A nerve block is a slow and continuous infusion that is given to you through a small, fine catheter inserted in your back to numb the area operated on.

Patient controlled analgesia (PCA): Another way to control your pain after your operation is through patient-controlled analgesia (PCA). You are actively encouraged to take control of giving yourself pain relief medicine. This means you will need to press a button, which in turn gives you a dose of painkiller through the drip. You cannot overdose on the painkiller because the pump will control how much you receive using a five-minute lockout system.

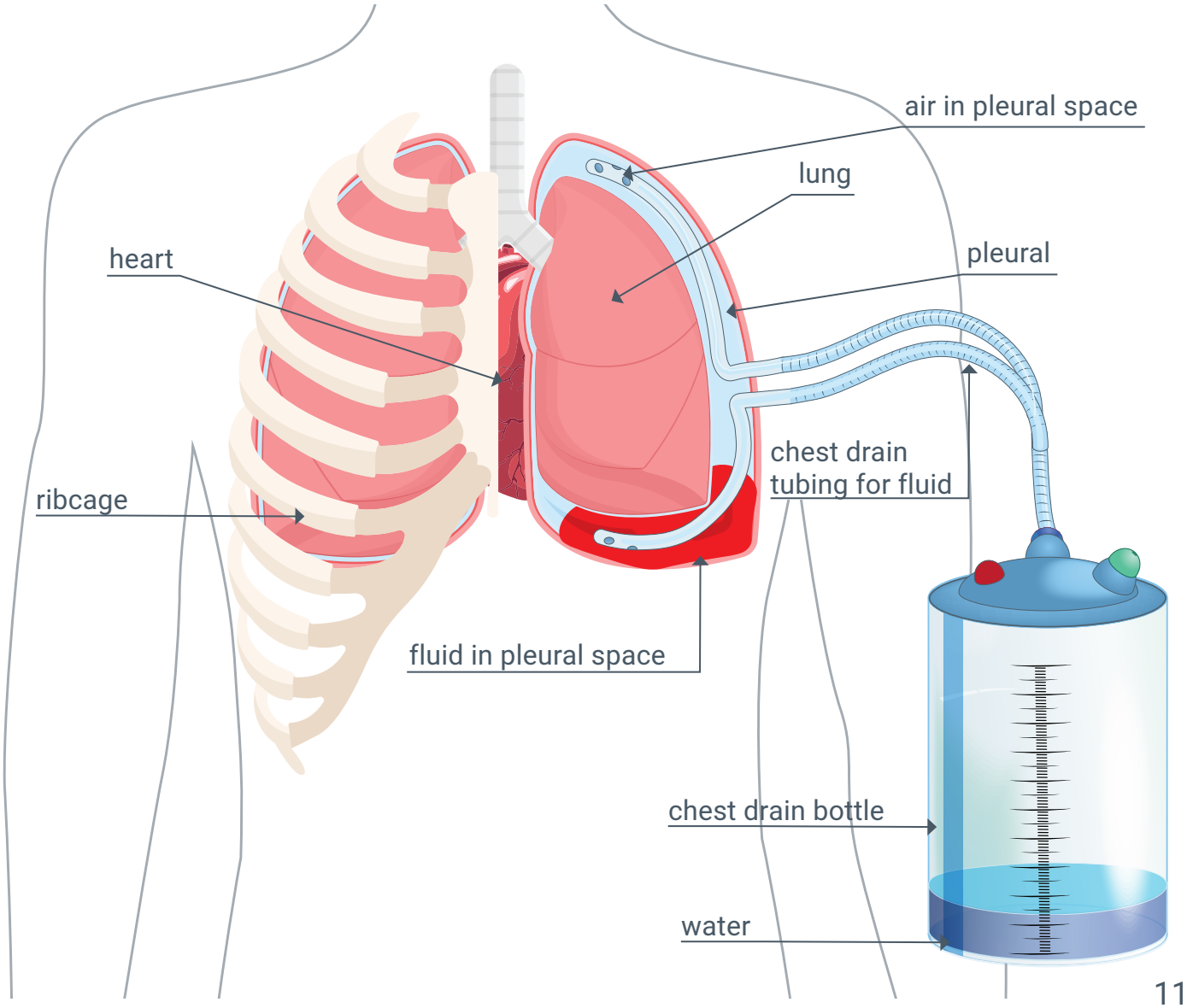
In addition to the nerve block and PCA, you will also be given a slow-release oral painkiller and regular paracetamol, which are important in controlling your pain. The pain specialist team will visit you the day after your surgery to assess the effectiveness of your pain relief regimen. Your nurse will also routinely ask you to rate your pain on a scale of one to 10, with 10 being the worst pain imaginable. This allows the team to monitor, assess and treat your pain appropriately.

Urine catheter: Depending on the type of surgery you are undergoing, you may have a urinary catheter on return from surgery. A urinary catheter is a soft plastic tube that is placed in the bladder to drain urine. It is a comfort measure so you don't need to get up in the early stages after your operation, but it also allows the nurses to monitor your kidney function. The catheter is routinely removed the day after your surgery.

Chest drains: You will have chest drains, usually one or two, on the side operated on. These drainage tubes are connected to bottles that sit at your bedside. The chest drains are needed to drain fluid and assess the presence of air leaking from your lung tissue, both factors that prevent your lungs from expanding fully. Doctors and nurses will be checking on these containers to see how much fluid is draining and if there is an air leak. They will ask you to cough while they assess this.

The chest drains cannot be removed if the volume of fluid draining is higher than normal and/or if there is evidence of air leaking. The chest drains are sometimes attached to additional tubing connected to suction, which speeds up the recovery process. The drain should not limit your mobility but you will need some assistance when walking. The physiotherapist will educate you further when they review you on the day after your operation.

You will generally be in hospital until the drains are removed. The time varies with each person and type of surgery.



The recovery stage

On return to Ward G62 your nurse will check your vital signs frequently. The head of your bed is elevated 45 degrees to help your breathing. It is advised that you lie on your back or the opposite side to your incision. Positioning is used for comfort and to help your lung inflate more fully and aid secretion clearance, which helps your recovery. You will be able to eat and drink as tolerated straight after your surgery. Please inform your nurse if you experience any nausea.

For pneumonectomy patients only

If the operation you are having is a pneumonectomy, you will return to the High Dependency Unit (HDU) on Ward G62. This room is monitored and equipped with higher levels of staffing than a standard room. Initially you will be in this room most of the time or until your condition stabilises and when a bed becomes available on the ward.

When you return from theatre you will have additional attachments to the equipment described earlier. You will have an intravenous drip in the right upper shoulder or neck, allowing staff to give medicine and take blood samples. This is usually removed after two to three days. If you have had a pneumonectomy you will only be allowed to lie on your back.

Physiotherapy after surgery

It is important to try to do post-operative exercises each hour immediately after your operation.

Use a pillow to support/splint your wound, breathe in deeply and then cough out (don't just clear your throat). Your physiotherapist will educate you further on this.

Repeat the following exercises five times every one to two hours

- Raise both your arms together in front of you towards the ceiling as you breathe in, then lower your arms as you breathe out.
- Point both feet toward the foot of the bed, hold for three seconds, then relax.
- Pull both feet down towards yourself, hold for three seconds, then relax.
- Rotate ankles, clockwise and anticlockwise, in a circular motion.
- Bend your knees up and down in bed.

The morning after your operation the nurse will help you get out of bed, shower and sit out in the chair. A chest x-ray will be taken each day to determine if the lungs are fully expanded and when the chest drains can be removed.

Posture

It is important to be aware of your posture after the operation, as you may tend to protect the side that you have been operated on by leaning towards it. To promote healing of your wound in the correct position, it is important that when you are standing or sitting that you keep your back straight, your shoulders level and your head up. Use a mirror to see how symmetrical you are.

Walking

It is essential to slowly build up your fitness again after your surgery. Aim to start with one or two walks a day at a comfortable pace for five minutes and increase the time each day by about a minute. You should be able to walk and talk at the same time. Once you can manage to walk for 20 minutes, reduce to one walk a day while continuing to increase the time.

It is important that you start with short achievable distances and, as you improve, slowly increase the pace and distance that you cover with each walk. It would be ideal if you could build up your walking time to 30 to 40 minutes once a day. There is no need to avoid stairs or inclines. If you get excessively short of breath, develop pain or dizziness, stop and rest.

Pulmonary rehabilitation

Your physiotherapist can refer you to pulmonary rehabilitation, a specialised eight-week program for people with lung disease. You will be encouraged to attend two classes a week for eight weeks, although this can be altered according to your needs. There will be other people with lung disease in these classes. You will also be prescribed an exercise program to do at home on two or three days each week. Please let your physiotherapist know if you are interested in this.

Benefits of pulmonary rehabilitation include:

- ✓ Increased physical fitness and functioning
- ✓ Decreased breathlessness and fatigue
- ✓ Improved wellbeing
- ✓ Improved knowledge and ability to manage lung conditions
- ✓ Reduced hospital admissions.

Why participate?

Many people with lung disease avoid activity due to breathlessness and muscle tiredness. This sets up a vicious cycle of worsening breathlessness, muscle weakness and fatigue so that less activity and exercise is achieved. Breathlessness is an uncomfortable, frightening symptom. However, if you have lung disease, breathlessness on activity is not harmful. This specialised program will give you the confidence to be active and provide ways to exercise that are safe and effective.

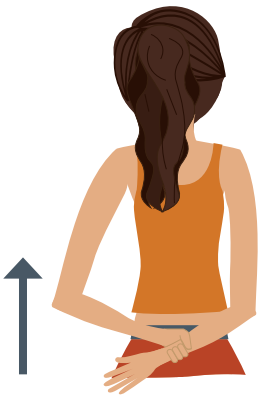
Stretches

To maintain the mobility of the shoulder and to keep the muscles from becoming tight on your operated side, it is essential to do a range of motion exercises after your surgery. The following exercises should be performed five times each, twice a day, for the first four to six weeks after your operation. Aim to hold each stretch for up to 10 seconds. You should feel a comfortable stretch when doing these exercises.

1. Sit on an upright chair without arms (eg: a dining chair) so your back is supported and your arms are free to move sideways.

2. Clasp hands together. Keeping elbows straight or slightly bent, lift your arms upwards as far as you can in front of you.

3. Lift your arms sideways, away from your body, up towards your head.



4. Move your arm on the operated side up behind your back, trying to reach your hand towards your opposite shoulder blade.

5. Lift your arm on the operated side behind your head, trying to reach towards the back of your neck.

Discharge plan and follow-ups

You will be required to attend two to three follow-up appointments following your discharge.

1. **GP follow-up one week after discharge**
   You will need to organise this. Other reasons to seek medical attention include:
   - Wound infection
   - Increased shortness of breath
   - Pain
   - Fever or chills
   - Dizziness or feeling faint.

2. **Cardiothoracic team follow-up after two to four weeks**
   We will book this appointment for you. If you are from the country, or find it difficult to get to the hospital, this appointment can be made via Telehealth.

3. **Respiratory physician follow-up**
   The respiratory team may also book an appointment to follow up and discuss further management, if indicated.

Country patients

If you are from the country, we request that you stay in Perth for five to seven days after your discharge in case any post-operative complications arise. We will see you at our clinic at the end of your stay and clear you to return home if appropriate.

Please contact the Patient Assisted Travel Scheme (PATS) department in your area prior to your surgery for travel assistance. If you require accommodation advice, please inform your local PATS office or the cardiothoracic patient educator as soon as possible.

General wound care

Observe wounds each day for signs and symptoms of infection (even if you have a plastic dressing in place). This includes any:

- Redness
- Swelling
- Increased pain
- Increased heat
- Any discharge/pus.

If you have any of these symptoms, contact your local GP or the cardiothoracic patient educator immediately.

To care for wounds that are uncovered

Wash them in the shower before the rest of your body. Use any soap that you may have at home and gently pat dry.

When your drainage tubes are removed a large dressing is placed over these small incisions. It needs to stay in place for 48 hours. Therefore, you may need to remove the dressing yourself if you are at home by this time. There may be a stitch in place where the tube(s) have been. If so, your general practitioner can remove the stitch **seven days after your drain was removed.**

Avoid swimming pools, spas and baths for six weeks, or until the wounds are completely healed. Do not apply any creams, lotions or powders to your wounds.

Pain relief

During the next four to six weeks you will get various types of pains associated with the wound or the muscles in your chest, shoulders and back. The pains are quite often more evident as you become more active and the wound begins to heal. Your stretches should help ease some of the wound pain, too. It is important to take regular pain relief such as paracetamol every four to six hours. If your pain becomes intolerable, see your GP.

Lifting

For the first two weeks after your surgery, you will need to be careful with lifting, pulling and pushing with the arm on the side affected by the operation. This is to assist the healing process. If you have any pain or concerns, stop what you are doing immediately. Ensure that the unoperated side does most of the work. However, it is still important not to overdo it, even with your good arm and back.

Driving

If you have had VAT surgery, there are no driving restrictions. But a good rule is if you have pain, don't do it. If you have had a thoracotomy and large incision, it is recommended that you do not drive for four weeks after surgery. In the meantime, it is fine to be a passenger and you are still required to wear a seatbelt.

Flying and scuba diving

Due to atmospheric pressure changes associated with flying and scuba diving, these activities must be avoided for at least four to six weeks after your surgery. Discuss any concerns with your surgeon.

Work

You will also need to discuss when you can return to work with your surgeon as it will depend on your job. This can be done in hospital or at your follow-up appointment.

Support

If you have had lung surgery for cancer, it is common to feel overwhelmed. These feelings are part of coming to terms with what is happening to you. Of course, family are a great resource at this time, but please let your nurse know if you would like to talk to someone from the social work team or our chaplain. Other support services are also available.

Useful contacts

Cardiothoracic patient educator

Phone (08) 6457 3333 (during working hours) and ask for the cardiothoracic patient educator to be paged on 4391.

Cardiothoracic Department

Phone (08) 6457 2383 (during working hours), Monday to Thursday.

Cardiothoracic physiotherapist

Phone (08) 6457 3333 (during working hours) and ask for the cardiothoracic physiotherapist to be paged on 4060.

After hours

Phone the hospital switchboard on (08) 6457 3333 and ask for Ward G62 and speak to the shift coordinator. If the matter is urgent and you are medically unstable, please call an ambulance or come to the Emergency Department immediately.

We hope this booklet has helped you with your hospital stay and recovery after lung surgery.

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August 2023.

Thoracic surgery

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We are proud to be a smoke-free site. Thank you for not smoking or vaping. Ask a staff member about free nicotine therapy to help your cravings during your hospital stay.

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