

SYDNEY
HEART & LUNG SURGEONS

Lung/Thoracic Surgery Handbook

continuity
OF care



Welcome

to Sydney Heart and Lung Surgeons.
The Practice is at the forefront of cardiothoracic surgery.
We are committed to restoring patients to active lives
as quickly as possible.

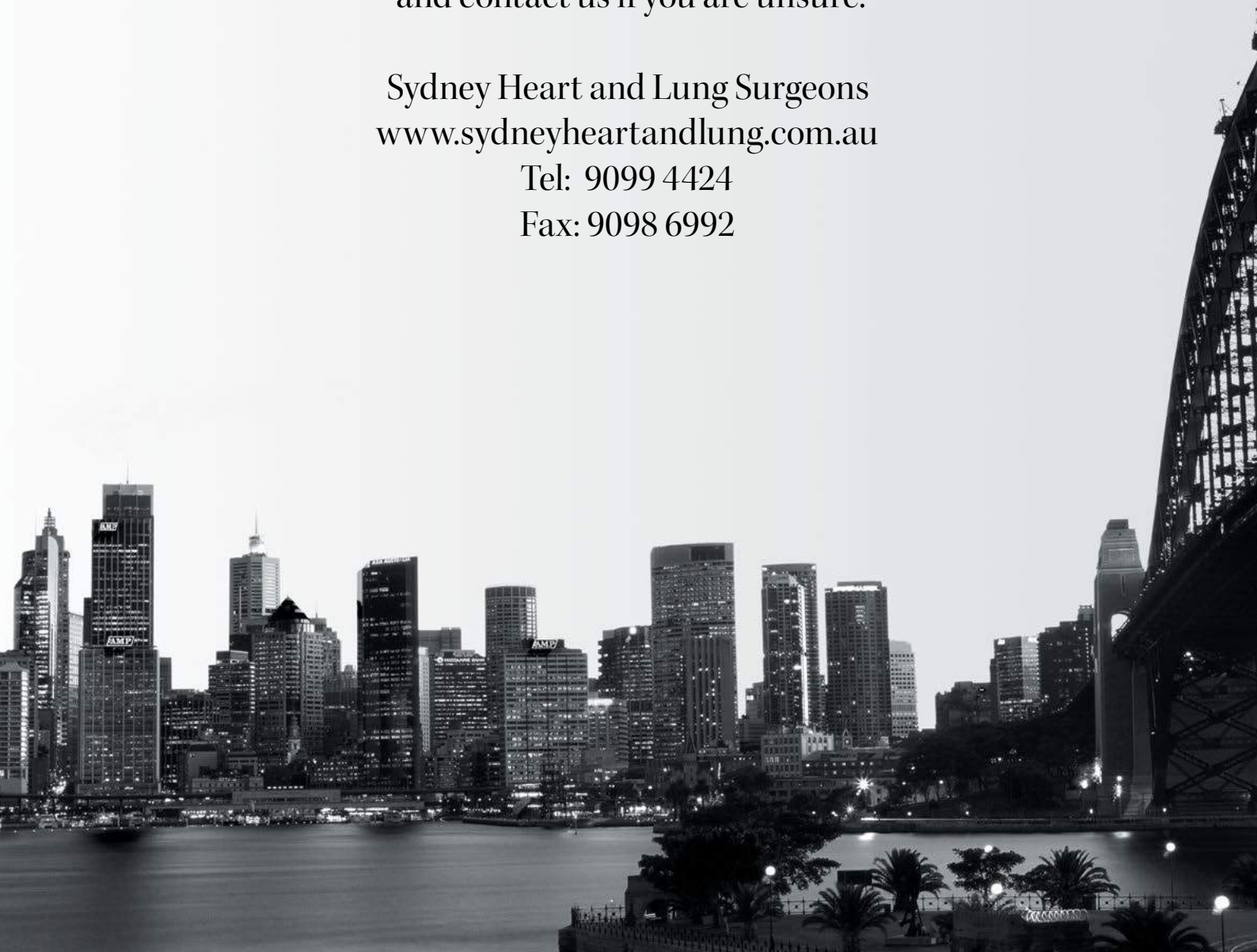
This booklet will provide you with information to make
your hospital stay and recovery at home
as easy as possible.

Each patient is different and the information in the book
may vary from your doctor's individual advice.
Always follow the instructions given by your doctor
and contact us if you are unsure.

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Lung Surgery

There are many factors that can influence recovery from lung surgery however, you can effectively control the following:



SMOKING

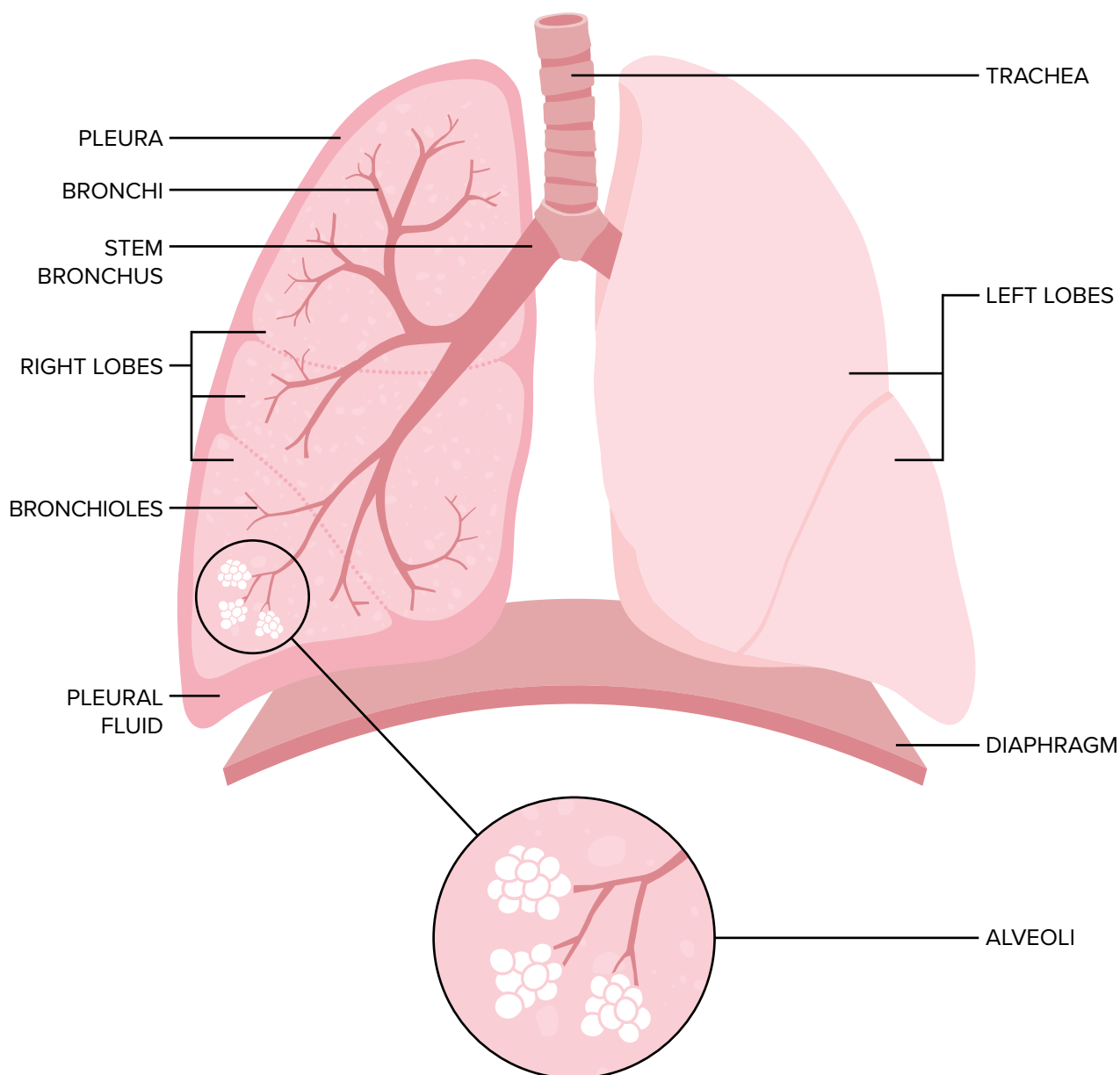
You must stop smoking. If you are a non-smoker or have ceased smoking years ago, this factor is not applicable. SURGERY WILL BE CANCELLED IF YOU SMOKE WITHIN 4 WEEKS OF THE OPERATION DATE.



EMOTIONAL OUTLOOK

Have positive feelings about recovery. It is expected that when you leave hospital you will be able to return to your normal activities of daily living independently even though you might be a little slower than usual.

The Lungs



The operation you will require is determined by a number of factors including:

- The type of lung disease you have.
- The amount of lung tissue involved.
- The surrounding structures that may be affected.

Lung Operations

BRONCHOSCOPY

The surgeon passes an instrument called a bronchoscope down your trachea (wind pipe). This provides a view of the air passages and tissue samples for biopsy can be taken at this time.

THORACOSCOPIC VATS BIOPSY

Video assisted surgery. Small incisions are made in the chest wall to allow insertion of instruments and a small camera. Samples are taken for biopsy.

MEDIASTINOSCOPY AND BIOPSY

The surgeon will explore and biopsy mediastinal lymph nodes that lie around the trachea in the upper chest behind the breastbone. A small cut is made in a skin fold in the front of the neck. An instrument called a mediastinoscope is then passed downwards, outside and along the trachea to the lymph node area.

LOBECTOMY

This surgery involves removal of a lobe from either the right or left lung. Sometimes 2 of the 3 lobes may be removed from the right lung.

PNEUMONECTOMY

Pneumonectomy means removal of an entire lung. There are many people living fulfilling lives with only one lung.

SEGMENTECTOMY OR WEDGE RESECTION

A portion of the lung less than a lobe can be removed by removing a discrete segment (segmentectomy) or by cutting across lung tissue as a wedge resection.

PLEURODESIS

Sterile talc powder is instilled into the pleural space. This causes inflammation between the two membranes that surround the lung so they adhere to each other. This procedure is performed so that the lung will not collapse and fluid will not be produced or collect in the space.

PLEURECTOMY AND DECORTICATION

The pleura (lung lining) can be surgically peeled away (pleurectomy) or scraped clean (decortication). These procedures are used when lung tissue cannot fully expand usually due to prolonged collapse as a consequence of excess fluid or infection.

CORRECTIVE SURGERY

Surgery may be required to correct congenital chest disorders, such as Pectus Excavatum or pectus carinatum, or removal of rib bone tumours. Corrective surgery may involve bars or plates inserted across the ribs via small incisions either side of your chest. These are removed after a period of time and the chest grows normally. The rib may be removed for rib bone tumours or growths. Your surgeon will discuss the methods and technique used to correct any of these conditions to provide you with the best possible outcome.

Surgical Techniques

Sometimes a combination of surgical methods is required. Your surgeon will discuss the most appropriate technique for your surgery.

THORACOTOMY

The chest cavity is entered via an incision on the back of the chest and then the ribs are spread to enable entry into the pleural space. The incision is usually 15-25cm long.

THORACOSCOPY

A number of small incisions are made in the chest to allow a small television camera and instruments to be passed into the chest. The surgery is performed via these small incisions. (keyhole surgery).

MEDIAN STERNOTOMY

The chest organs are accessed by opening the chest down the centre of the sternum (breastbone). This technique enables your surgeon to treat problems in the centre of the chest.

DA VINCI ROBOT

The surgical robot that may be used via keyhole surgical approach to enhance access and tissue manipulation.

MINIMALLY INVASIVE SURGERY

A surgical approach using small (keyhole) incisions to perform operations within the body.

This approach results in:

- Smaller incisions and better cosmetic result.
- Less bleeding and risk of infection.
- Less pain after the operation.
- Shorter hospital stay.
- Faster recovery and return to work.

DA VINCI ROBOT

The Da Vinci robot is a state-of-the-art surgical system that provides an effective and less invasive treatment option. The benefits of this system include:

- No Sternotomy.
- Lower risk of infection.
- Shorter hospital stay.
- Less pain and scarring.
- Faster recovery and return to normal activities.



Your Hospital Stay

You will be admitted either the day before or the day of your surgical procedure. The following is a list of items you should bring to hospital.

ITEMS YOU SHOULD BRING TO HOSPITAL

- All health care cards.
- X-rays, scans, test results or discs related to the procedure.
- All current medications in the original packaging.
- Nightwear and comfortable loose fitting clothes.
- Dressing gown and non slip footwear/slippers.
- Personal toiletries including lip balm.
- Glasses, hearing aides and walking aides.

In most cases it is necessary for you to fast from 12 midnight the night before your procedure. This means nothing to eat or drink from midnight. If you are required to fast from a different time you will be advised of the time to stop eating and drinking.

You will need to shower with antimicrobial soap the night before and the morning of your procedure. Your chest area will be shaved once you are admitted to hospital.

Most medications are continued up until admission. The exceptions are blood thinners.



Stop taking warfarin/Coumadin/Plavix/clopidogrel/aspirin and fish oil 7 days before surgery.

If you have a coronary stent notify SHLS and we will discuss with your cardiologist whether you should continue aspirin.

You will be advised if you need to stop any other medications prior to your procedure.

An anaesthetist will visit you before your operation to discuss anaesthesia and the type that will be used for your operation.

You may be ordered a pre-med to be given to you shortly before going to the operating room. It will make you feel drowsy and relaxed.

After Your Surgery

You will wake up from the anaesthetic in the recovery room where you will be observed closely until you are ready to be transferred to the ward or Intensive Care Unit (depending on the procedure performed). You will have an oxygen mask over your face and be sitting up quite high in the bed. The nursing and medical staff will monitor your temperature, heart rate, blood pressure, blood oxygen level, wound, chest drainage and pain levels.

Upon waking from anaesthesia you may feel disorientated. Please remember, medical and nursing staff are there to assist you and chest drains and other line systems must be kept attached to you for your own benefit.

One of the risks after surgery is blood clots forming in the legs and lungs. You will be given stockings to wear and injections (normally given in your abdomen) to help prevent clots.

CHEST DRAINS

You will have 1 or 2 tubes inserted in your chest wall. They are necessary to assist the re-expansion of the lung, drainage of fluid from the chest cavity and to allow air that has leaked from the operation site to escape.

The chest drains will be the cause of some of the initial pain. The tubes remain in until the lung has re-expanded, air leak resolved and drainage volumes are minimal. Chest x-rays are performed regularly while the drains are in place and soon after they are removed.

INTRAVENOUS LINES/DRIPS

You will have a line inserted into a vein. Medications such as antibiotics and pain relief are administered through these lines. If you experience nausea and vomiting, drugs may be administered through this line to help alleviate the symptoms.

PAIN RELIEF

Patient Controlled Analgesia or PCA is often used for pain relief. The most commonly used narcotic is Fentanyl but Morphine may also be used. The drug is administered through the drip line. You regulate the administration through the push of a button. A pre-set prescribed dose of drug is administered when the button is pushed. There is a lock out period (usually 5 minutes) so you cannot have too much of the drug in a short period of time. The PCA puts you in control of your pain relief. You are able to anticipate a painful event such as getting out of bed, removal of drains or physiotherapy and push the button. Pain relief will enable you to work better and harder at your physiotherapy.

Painbuster is a pain management system that may also be used in the post operative time. The system includes a small round pump filled with local anaesthetic to treat your pain after surgery. The pump is attached to a catheter (small tube) near your incision site. The pump automatically delivers the medicine at a slow flow rate. Do not squeeze the pump as the pump provides the force needed to deliver the medicine. The pump is completely portable and can be attached to your clothes or hospital gown. The catheter will be removed painlessly in hospital and a small dressing placed over the site.

OXYGEN THERAPY

All patients require oxygen via a mask immediately after surgery. The mask is usually replaced with nasal prongs when lower levels of oxygen are required. While you are using the PCA you will be administered oxygen. Oxygen dries your mouth and lips, so apply lip balm for comfort during this time.

PHYSIOTHERAPY

A physiotherapist will visit you soon after you return to the ward or Unit after surgery. You will begin with breathing and arm exercises, and walking. Early mobilisation is an effective way of preventing complications of the chest. You will take deeper breaths to expand the bases of your lungs. This also helps to generate more effective coughs and clear secretions from your lungs.

Gradually the distance you walk should be increased. You will be advised when you are ready to walk on your own. You will increase your walking to 5-6 times a day around the ward at a comfortable pace.

Once you leave hospital you will be expected to walk regularly at home. Make sure to continue a frequent walking programme to improve your lung fitness, and assist with secretion clearance. Walking will also stimulate bowel activity, appetite and an overall feeling of improved mental and physical well-being.

NAUSEA AND VOMITING

The symptoms of nausea and vomiting may be related to the anaesthetic and or the pain relieving medication. Nausea and vomiting is managed with ant-nausea medication. If you have previously had nausea/vomiting with some pain relieving medication it is important to advise staff of your previous experiences.

ATRIAL FIBRILLATION

A common side effect of lung surgery is a rapid heart rate called atrial fibrillation (AF). Patients experiencing AF feel that their heart is thumping out of their chest. Patients may feel washed out, short of breath and frightened. The cause of AF post lung surgery is unknown but the condition will be managed with medications and electrolyte replacement, which may be required for a short period of time post operatively. The surgeon may request a cardiologist to visit you in hospital if you experience AF.

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Excercise Programme

Your goal should be to return to your pre-operative level of activity as soon as possible after surgery. Regular exercise has many benefits. Exercise reduces the risk of blood clots post surgery. It helps to lower weight and cholesterol and manage stress. By the time you are discharged from hospital you will be independent, able to walk up a flight of stairs and be increasing your physical activity each day. Remember it will take some weeks to increase your level of fitness after a major operation. Be patient, work hard and begin with short but frequent amounts of exercise.

ARM EXERCISES POST THORACOTOMY

After a thoracotomy, you may find your rib cage feels stiff or tight on the side of the operation. Below are exercises to help relieve tightness. Perform these exercises morning and night, **3 times**, and hold each movement for **10 seconds**. Within 4-6 weeks your shoulder movement should be similar to your preoperative state.

SHOULDER FLEXION

Lift your arm forward and raise it toward the ceiling. Hold it for 10 seconds then lower it slowly. Initially it may be too sore to lift straight up. In this case you can walk your fingers up the wall. Hold for 10 seconds when you feel a stretch.

SHOULDER ABDUCTION

Lift your whole arm sideways away from your body. Hold it for 10 seconds then lower gently. You may walk your fingers up the wall at first if this exercise is too painful.

SIDE FLEXION

Standing, keep both arms relaxed by your side. Gradually lean sideways to slide one arm down your leg. Lean away from the operation side to feel a stretch on that side.

POSTURAL STRETCH

Sitting on a chair, hold a stick or towel with a wide grip. Lift the stick up with your arms straight and extend your upper trunk at the same time.

Once your drain has been removed and your wound is closed and healed, it is time to start massaging your scar. This will keep the scar tissue mobile and helps shoulder movement. Initially the scar may feel sensitive. The more you touch the scar, the less sensitive it will be. Vitamin E cream, sorbolene or lanolin oil may be used to massage your scar. Use your finger tip and massage in a circular motion so that the scar and skin move over your ribcage. Start off gently and then as you become used to it press a little harder.

Going Home

You will be admitted either the day before or the day of your surgical procedure. The following is a list of items you should bring to hospital.



You are advised by the RTA not to drive a motor vehicle for 4 weeks following thoracotomy and 2 weeks following thoracoscopic surgery.

WHAT TO EXPECT AFTER YOUR DISCHARGE FROM HOSPITAL

- You will receive a letter to take to your GP within the first week after discharge. Your GP can monitor your progress, prescribe medications and remove stitches if needed.
- You will have a review with your referring respiratory specialist in 3 – 4 weeks after discharge from hospital.
- You will have an appointment to see the surgeon (4 – 6 weeks) and will need to bring a new chest xray. This needs to be arranged before your follow up appointment by either asking your local doctor for a referral for chest x-ray or presenting at the consulting rooms 1 hour before your appointment to collect a form to go the X-ray department. The X-ray department is located in the RPA medical centre on Ground Floor or at MMI at the Macquarie University Hospital.
- Please note for our rural patients, follow up will be with your respiratory specialist closer to home.

RESULTS

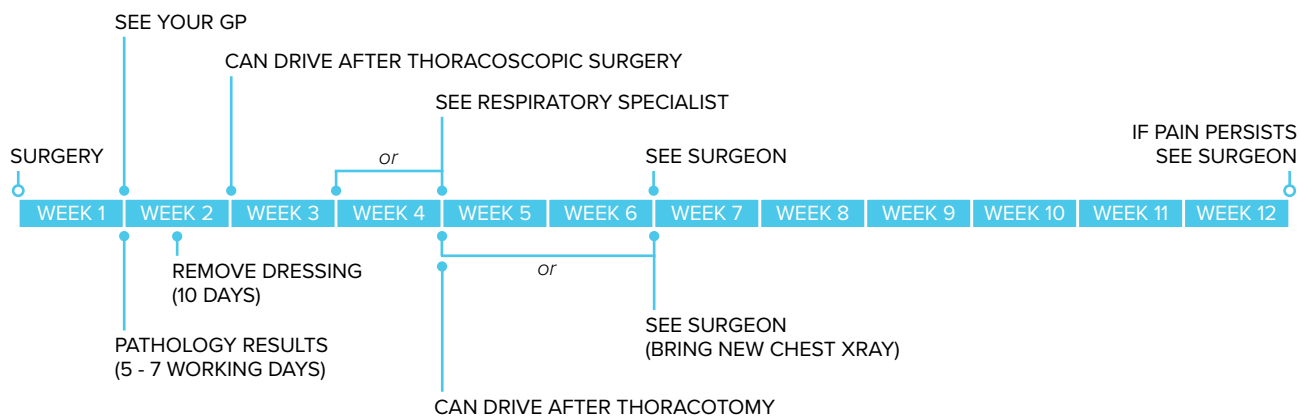
Pathology results take 5 – 7 working days to process. There may be need for other treatments such as radiotherapy or chemotherapy, depending on those results. Your doctor will discuss further treatment if required.

WOUNDS

The main wound will either have a dissolving stitch or surgical clips. You will be able to shower because the wound will have a water-proof dressing. **The dressing is to be removed 10 days after surgery.** If the dressing rolls or is leaking it will need to be removed earlier. Your local doctor can remove any clips if necessary.

Drain sutures are removed 5 days after the drain is taken out. Often this is done while you are still in hospital. Occasionally fluid will leak from the drain holes. If this happens at home, cover the holes with a clean cloth or dressing. Take a note of what the leakage looks like and visit your local doctor. If the leakage is fresh bright red blood, please notify Sydney Heart and Lung Surgeons or contact the hospital where you had surgery.

Recovery Timeline



Common Concerns

The most common concerns after surgery relate to pain relief and constipation.

PAIN

The site of and sensation of pain is similar in both Thoracoscopy and Thoracotomy. The pain experience varies greatly amongst individuals. It can persist for days, weeks or months but usually subsides to a tolerable level, with pain killers, within 4-6 weeks of surgery. Pain is commonly experienced on the front of the chest and below the ribs. The breast area can feel any or all of the following: numb, tingly, hot, tight and heavy.

Drug dependence and tolerance is a concern but if pain hinders daily activity, breathing, exercising or sleep, then better pain management is required.

You will be prescribed pain medication suitable for your use. Please take the medication as prescribed.

If pain is persistent and unrelieved it will need further investigation to treat possible causes for the pain.

If pain persists for more than 3 months, then return to either the surgeon or respiratory physician for review. You may need a referral to a Chronic Pain Consultant.

CONSTIPATION

Prevention begins on the day of surgery. You will be prescribed stimulants and softeners to help prevent constipation. Once bowels have opened you may need to regulate the dose of aperients. Other non medications that assist in regulating bowel movements are fresh fruit and vegetables, prunes, exercise and water (provided you are not on a fluid restriction).

SEXUAL ACTIVITY

The time to resume sexual activity is when you and your partner feel both physically and emotionally ready. If you become short of breath try to take a more passive role in your activity. You could try other positions to reduce the effort that is placed on your respiratory system.

Resources

The Cancer Council NSW

Help line 131120

www.cancercouncil.com.au

The Cancer Council provides information booklets about all aspects of all cancers. The Staff is well trained to answer any questions you may have. There is a telephone support group for lung cancer patients and carers.

Lung Foundation Australia

07 3357 6388

www.lungfoundation.com.au

Lung Foundation Australia supports all aspects of lung health. The foundation runs community education and a toll free patient information and support centre with a lung care nurse. They provide educational fact sheets and support research and community awareness Australia wide. Pulmonary Rehabilitation classes are run by exercise professionals who are specially trained in exercising people with chronic lung conditions and heart failure.

Dust Diseases Authority

1800 550 027 or 02 8223 6600

www.ddb.nsw.gov.au

The Dust Diseases Authority replaced the Dust Diseases Board and is part of a new organisation, Insurance and Care NSW.

The Authority provides financial compensation and support to people who have had work related exposure to harmful dust in NSW. Along with compensation the board also funds on-going assistance to improve quality of life. This includes mobility aids, personal care and medication and treatment from health professionals, as well as general assistance such as domestic support and respite care for families.

Asbestos Diseases Foundation of Australia

1800 006 196 or 02 9637 8759

www.adfa.org.au

This not for profit foundation provides support for people with asbestos related disease and family members, carers and friends. It is a community based group providing support to meet the needs of patients.

Asbestos Diseases Research Institute

02 97676 9800 or info@adri.org.au

www.adri.org.au

The Asbestos Disease Research Institute is the world's first stand alone research facility dedicated to asbestos related diseases. It is located in the Bernie Banton Centre at Concord Hospital. A biobank or tissue bank is pivotal to the research being done at ADRI – you may be invited to donate some tissue at the time of surgery.

Chris O'Brien Lifehouse

www.mylifehouse.org.au

The Chris O'Brien Lifehouse provides comprehensive information regarding understanding all types of cancer.

Contact Information

All public hospitals offer rehabilitation programmes as an outpatient. Contact your nearest public hospital for details.

Sydney Heart and Lung Surgeons wish you a speedy recovery. For assistance contact the rooms on: 9099 4424 or contact@sydneyheartandlung.com.au.

Please do not hesitate to contact the Nurses if you have any concerns regarding your treatment.



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