

Central East Regional Thoracic Program and Thoracic Diagnostic Assessment Unit

Your Lung Surgery

Your Thoracic Surgeon has scheduled you for lung surgery. This booklet will give you information about what you can expect during your hospital stay and after you go home. It is important that you also read “The Surgical Passport” booklet that was given to you.



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Your healthcare team

This is a list of the healthcare team members you may see while you are in hospital.

Thoracic Surgeon (also known as a lung surgeon)

The Thoracic Surgeon will tell you about the lung surgery you will be having and answer your questions. The Thoracic Surgeon will guide your care.

Thoracic Nurse Navigator

The Thoracic Nurse Navigator will give you support and help plan your care with members of your healthcare team.

Nurse

Nurses will care for you before and after your surgery. They will give you the support, medications and information you need while you are in hospital.

Physiotherapist

The physiotherapist will give chest physiotherapy to you and teach you exercises that will help you get moving after your surgery. Exercises will help you recover from your surgery.

Social Worker

A social worker can help you and your family with some of the concerns or challenges you may have. Social workers are trained in counselling techniques to help you solve problems, make decisions and improve your feelings of wellbeing. Ask a member of your healthcare team about seeing a social worker.

Dietitian

A dietitian can talk to you about what to eat and drink to help you recover from your surgery. Ask a member of your healthcare team about seeing a dietitian.

Respiratory Therapist

You will be seen by a Respiratory Therapist if you have difficulty breathing, have chest tubes, need oxygen therapy or take inhaled medications.

Central East Local Health Integration Network (CE LHIN) – Home and Community Care

A Care Coordinator from the CE LHN will help plan your discharge from hospital and make sure you have the supports you need for your care at home.

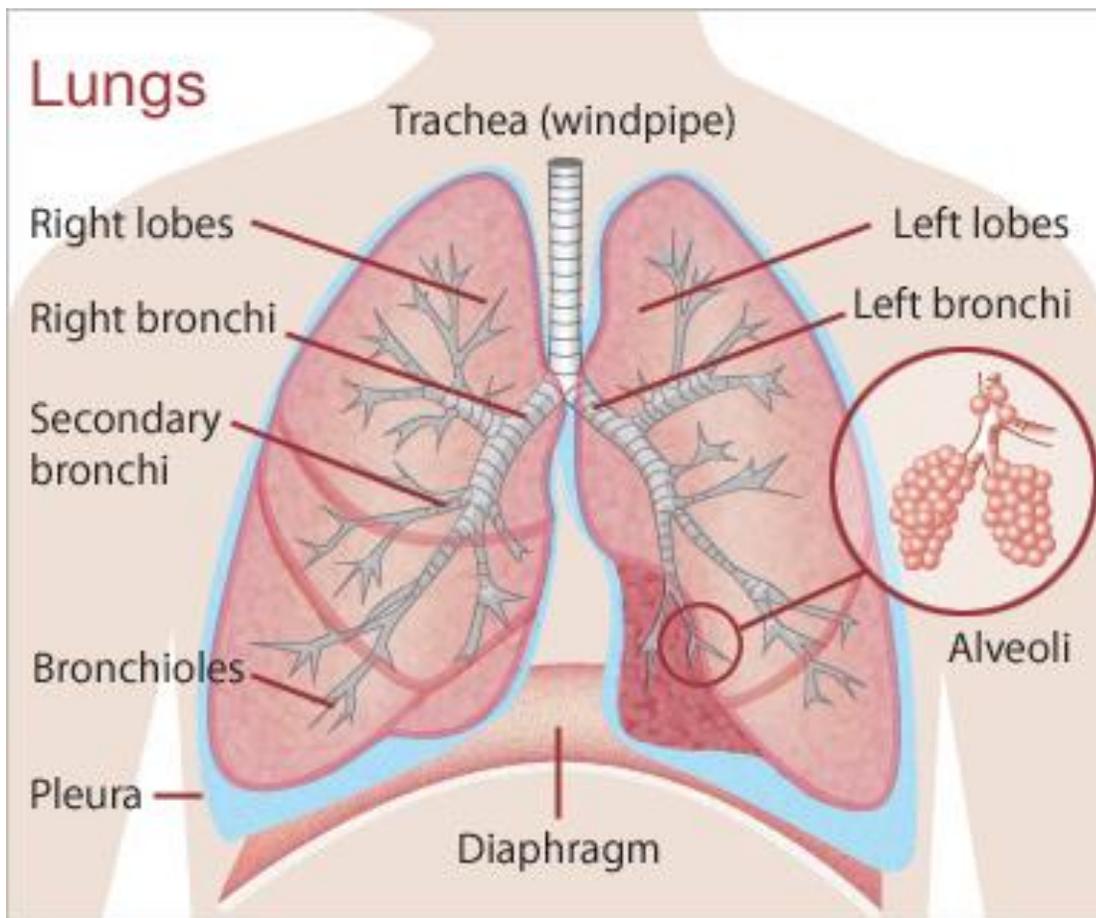
Why you may need to have lung surgery

In your body, you have 2 lungs. Your right lung has 3 lobes or parts. Your left lung has 2 lobes. You may need to have lung surgery because of an infection in your lungs or to remove a tumour. Your surgeon may need to take out an entire lung or sections from one or both of your lungs.

A mass or tumour in your lung can be benign or malignant. Benign means that it is not a cancer and malignant means that it is a cancer.

Any of your lung tissue that is removed during your surgery is sent to the lab to be looked at.

A picture of what your lungs look like



Different types of lung surgery

1. **Lobectomy:** The removal of one lobe (or part) of your lung.
2. **Bilobectomy:** The removal of two lobes (or parts) of your lung.
3. **Pneumonectomy:** The removal of one of your lungs.
4. **Pleural Pneumonectomy:** The removal of one of your lungs and the lining of your chest cavity (the pleura), the diaphragm and a part of your pericardium (the sac surrounding your heart).
5. **Chest Wall Resection:** Parts of your ribs are removed with your lung.
6. **Wedge Resection or Segmentectomy:** The removal of a wedge shaped section or large section of your lung.
7. **Pleuroscopy/Thoracoscopy:** The surgeon looks at the lining of your chest wall and your lungs using a long thin tube with a camera. Your surgeon may take a sample of the lining to have further tests done on it.
8. **Bullectomy:** The surgical removal of blisters that may have formed on the surface of your lungs.
9. **Pleurodesis/Talc Poudrage:** A special chemical is put between the lining of your chest wall and the outside of your lung. This is used to stop fluid from building up around your lung and to stop your lung from collapsing.

How your lung surgery may be done

1. **Thoracotomy:** This is also called open lung surgery. Your Thoracic Surgeon makes a large incision (cut) between 2 of your ribs to open your chest cavity. After your surgery, this incision is closed up with staples.
2. **Video Assisted Thoracic Surgery (also known as VATS):** Your lung surgery is done using a long thin tube with a camera and small surgical instruments. These are put into your chest through 4 small incisions (2 inches long) that are made between your ribs.
3. **Bronchoscopy/Mediastinoscopy** This is a day surgery procedure that is done in the operating room. You will be given a general anesthetic. A bronchoscope (a thin, lighted tube with a camera) is put into your mouth and down your windpipe to look into your breathing passages. Through this tube, your Thoracic Surgeon can collect cells or small samples of tissue so they can be examined more closely under a microscope. A small opening (incision) will be made at the bottom of your neck. Your Thoracic Surgeon will put a mediastinoscope (a thin, lighted tube with a camera) into this opening to view the inside of your upper chest in the space between your lungs. Through this tube, your Thoracic surgeon can collect samples of tissue so they can be examined more closely under a microscope.
4. **Thoracoscopy:** Your Thoracic Surgeon will make a small incision between your ribs. Your surgeon will use a long tube with a camera to look inside your chest and outside your lungs. This procedure is done to remove blood or fluid, take a sample of your lung tissue or to do a pleurodesis.

If the mass or tumour in your lung is cancer

You may only need to have surgery to treat your lung cancer. You may also be offered radiation and/or systemic therapy treatments. Deciding what is the right choice for you can depend on:

- The cell type of your cancer
- The size of your tumour
- The location of the tumour in your lung(s)
- The stage of your cancer
- Your age and overall health
- Your feelings about the treatment

Your healthcare team will give you the information and support you need to make a decision that is right for you.

Before your lung surgery

1. Your pre-operative appointment

- You will be scheduled for a pre-operative appointment. **Your lung surgery will be cancelled or delayed if you miss this appointment.**
- Please read the **Surgical Passport** booklet you were given before you go to this appointment.
- At this appointment you will be given more information about your lung surgery.

2. What you need to do to be ready for your lung surgery

- Ask someone to help you when you return home after surgery.
- Read the information you have been given. Talk to your Nurse Navigator about any questions you have or if there is any information that you do not understand.
- If you get sick with a cold before your surgery, it is important that you call to tell your Nurse Navigator.
- **Stop smoking 6 weeks before your surgery.** This includes all tobacco products (pipes, cigars, cigarettes and chewing tobacco). Smoking puts you at risk for lung problems after your surgery. Tobacco smoke destroys the tiny hairs that line your airway (cilia). Cilia help you cough up any secretions from your lungs. This is something you will need to do after you have your surgery. If you want to talk to someone about how to quit smoking, you can ask your Nurse Navigator about it or call the Canadian Cancer Society Smokers Help Line (a free service) at 1-877-513-5333.

What you can expect after your lung surgery

You will stay in hospital for 2-7 days. This will depend on the surgery you have. You may go to the Critical Care Unit to be monitored for a few days or hours after your lung surgery. You will go to the surgical unit on the 7th floor (N wing) for the rest of your hospital stay. Your healthcare team will help you to get ready to go home. Each person recovers differently. How you recover from your surgery can depend on the type of surgery you had, your age, overall health and your attitude.

If your surgery is done using VATS (Video Assisted Thoracic Surgery) it may take up to 4 to 6 weeks for you to recover. If your surgery is done by a Thoracotomy, your recovery time will be longer and could take up to 3 months.

Managing your pain

- You will have some pain or discomfort around your incisions. You may also have feelings of numbness through your chest and shoulders and into your abdomen.
- You will be given medication to manage your pain. It is important to take this medication when you have pain. This will help you to recover. If you have questions or concerns about this, talk to a member of your healthcare team.
- Your healthcare team will ask you about your pain. Tell your healthcare team if your pain medication is not working.
- You may be given your pain medication through an epidural catheter (a small flexible tube put in your back by a doctor) for 3 to 5 days after your lung surgery. The epidural catheter is attached to a Patient Controlled Analgesia (PCA) Pump. This Pump gives you the pain medication you need through the epidural catheter. You will still be able to sit at the side of the bed and walk with help from your healthcare team.
- The nurse will give you more information about the epidural catheter and about "PCA".
- When the epidural catheter is taken out, you will be given a different medication to control your pain (for example: a pill).

Side effects you may have from your pain medications

You may have side effects from the medication you are given to manage your pain. These side effects are expected and normal. It is important to tell your nurse if you have any of these side effects. These side effects will not last and can easily be managed.

- Nausea and Vomiting
- Constipation
- Headaches
- Sleepiness
- Itching

How to manage your constipation

- You will be given a prescription for a stool softener and a mild laxative. This will help stop you from having problems with constipation. Once you stop taking the pain medications, your bowel movements should return to what is normal for you.
- Drink 6 cups of fluids (1 cup = 250ml) in 24 hours. Do this unless your Thoracic Surgeon or a dietitian tells you something different.
- Add bran, high fibre breads, cereals, berries, and dried fruit or prune juice to your diet (unless these foods are a problem for you normally).
- Tell a member of your healthcare team if you do not have a bowel movement for 3 days.

How to manage your nausea and vomiting

- You will be given medications to manage any nausea (upset stomach) or vomiting you may have.

Your incision(s)

- Your Thoracic Surgeon will tell you how big your incision(s) will be and where your incision(s) will be located. The size and location of your incision(s) will depend on the type of lung surgery you have.
- There may be a "bump" along your incision(s). This bump will get smaller over time.
- The area around your incision(s) may feel numb. This is normal. It may last for 2 to 3 months or it may never go away.
- If you have steri-strips on your incision(s) they will need to be taken off 10 days after you go home. It is normal for the steri-strips to fall off before this.
- Your incision may have stitches or staples. The Thoracic Surgeon will tell you when these will be taken out. Usually stitches and staples are taken out 7 to 10 days after your lung surgery at your follow-up appointment.
- Do not put lotions or creams on your incision(s) until it is completely healed.

Tubes and lines you may have

Intravenous Line (IV)

- You will have an IV put into one of the veins in your arm. The IV is used to give you fluids and medications. Your IV will be taken out after you are drinking enough fluids.

Chest Tube

- A chest tube is a tube placed between your ribs and into the pleural space of your lung. You may have 1 or 2 chest tubes in place to drain fluid and blood out of your chest. This will help your lung refill with air and drain out any extra fluid.
- Each chest tube is put into the side of your chest through small incisions. A small stitch and tape will hold the tube in place. Each chest tube will be attached to a container to collect any fluid that drains out.
- Chest tubes are usually taken out when the drainage of fluid decreases or stops. The chest tube(s) may have to stay in when you go home.
- After your chest tubes are removed, you will have another chest x-ray. This lets the doctor see if your lungs are expanding enough.

Arterial Line

- If you go to the Critical Care Unit after your surgery you will have an arterial line (a small tube) in your wrist. This is another type of IV that can be used to take samples of your blood, measure your blood pressure and give you fluids and medications.

Foley Catheter

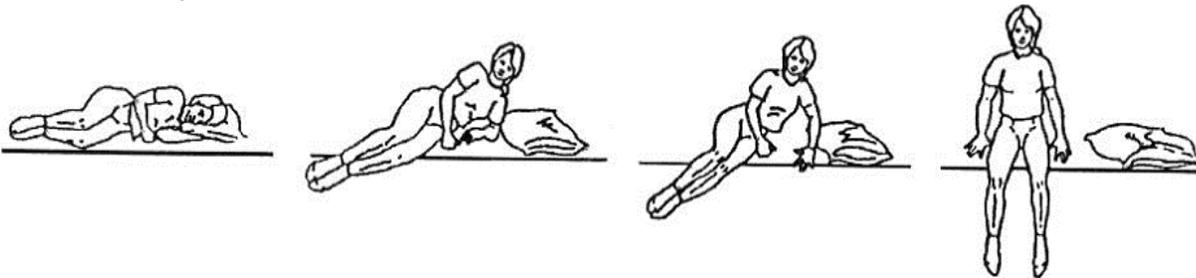
- You will have a Foley catheter for 1 to 2 days after your surgery. A Foley catheter is a hollow tube that is placed into your bladder to drain out your urine. The Foley catheter will be connected to a bag to collect the urine you pass. Your nurse will measure the amount of urine in the bag. This will help your healthcare team see how well your kidneys are working.

Your breathing

- After your surgery your oxygen levels will be monitored by your healthcare team.
- You may need to be given oxygen by face mask or nasal prongs (into your nose) for a few days after your surgery.
- When your lungs are working well, your healthcare team will take your oxygen off.
- You may have shortness of breath after your surgery. As you recover it is important for your lungs to expand and for you to cough up any mucous. Having good management of your pain, getting up out of bed after your surgery and doing your deep breathing and coughing exercises will help you with this.
- You will need to do your deep breathing and coughing exercises every 4 hours while you are awake.
- You will be shown how to use an incentive spirometer. This is a device that will help you with your breathing and to expand your lungs. See [pages 13 and 14](#) for instructions on how you can do deep breathing and coughing exercises.

Getting out of bed after your surgery

- You will be on bed rest for a few hours after your surgery.
- Your healthcare team will help you to sit at the side of the bed for the first time. It will not be easy or comfortable for you to sit up without help.
- See the pictures and steps below to help you sit up after surgery.
 - Roll onto your side where there is no incision.
 - Put your upper hand on the bed below your elbow on your other arm.
 - Lift your upper body off the bed by pushing down on the bed with your upper hand and pushing up with your elbow
 - Swing your feet and legs over the edge of the bed and bring your body to a sitting position



Your diet

- After your surgery, you will be able to drink fluids.
- You will be able to go back to eating your normal diet after you manage to drink fluids well.
- Your appetite should return to normal within a few weeks.
- Your appetite will get better as your physical activity increases.
- If you are having problems eating after your surgery, talk to member of your healthcare team and ask to see a dietitian.
- If you don't feel hungry, eat smaller, more frequent meals.
- Drink 6 cups (1 cup = 250ml) of fluids every 24 hours unless your doctor or dietitian tells you something different.
- Eat foods that are high in protein and calories.

Your Emotions

- After your lung surgery you may feel tired and discouraged for days or weeks. You will feel better emotionally as you feel stronger physically. Please talk to any member of your healthcare team if you have concerns about your emotions. You can ask to see a social worker at any time.

Your Medications

- Your Thoracic Surgeon may make some changes in the medications you are taking. You will need to talk to your healthcare team about the medications you will need to take when you go home.

Going home after your lung surgery

When you get home after your lung surgery, you will need to continue to slowly increase your activity. There are four exercises that we would like you to do that will help with your recovery at home. The four exercises are:

1. Deep breathing and coughing
2. Walking
3. Shoulder and arm exercises
4. Posture

See [pages 13 and 14](#) for instructions on how you can do these exercises.

Showering / Bathing

- Ask your Thoracic Surgeon when you can have a shower.
- You need to feel strong enough to get in and out of the shower. Ask for help if you need it.
- Use a mild soap for showering or bathing. Let the water run over your incision. Pat your incision dry with a clean towel and do not rub it.

Travelling

- Ask your Thoracic Surgeon when you can travel.
- **Do not** travel by plane for 4 weeks after your lung surgery.

Lifting

- **Do not** lift anything over 4.5kg (10 lbs.) after your lung surgery.
- **Do not** do any heavy lifting, carrying, pushing or pulling for 4 to 6 weeks after your surgery. This includes vacuuming, carrying heavy groceries, shoveling snow, etc.
- Heavy lifting can put a strain on your incision. **Do not** lift if you have any pain or discomfort.
- Your Thoracic Surgeon will tell you when you can start lifting more.

Going back to work

- You can plan to be off work for at least 4 to 6 weeks. Depending on your job, you may need to be off for 8 to 12 weeks.
- Ask your Thoracic Surgeon about this.

Driving

- **Do not** drive while you are taking pain medication. Your pain medication can make you very sleepy and it will be unsafe for you to drive.
- Before you drive, you must have full movement of your arm and shoulder. This usually takes about 2 to 3 weeks after your lung surgery.

Sexual Activity

- You may resume your normal sexual activity when you are ready to.
- **Do not** do anything that will put a strain on your incision.

Sports

- You may go swimming after your incision has healed. Talk to your Thoracic Surgeon about this. If you had a pneumonectomy (whole lung removed), you may not float as well as you did before. The first time you go swimming, do it in shallow water to see how well you can float. Always wear a life jacket when you go boating.
- You can go golfing 3 to 4 weeks after your lung surgery.
- You can go jogging, play tennis/ racquetball or do aerobics 4 to 6 weeks after your lung surgery.
- Ask your Thoracic Surgeon about whether or not you can safely go skydiving or scuba diving.

Your follow-up appointment

You will be given a follow up appointment to see your Thoracic Surgeon. If you are not given this appointment before you leave the hospital, call the receptionist at your Thoracic Surgeon's office within a week after you go home.

Dr. Dickie at 905-576-8711 or 1-866-338-1778 at extension 36357

Dr. Parajian at 905-576-8711 or 1-866-338-1778 extension 36342

Dr. Trainor at 905-576-8711 or 1-866-338-1778 extension 34481

Coming for your follow up appointment

- Bring your Cancer Centre ID card and your Ontario Health Card (OHIP) with you to your follow up appointment.
- **You will need to have a chest x-ray** before you see the Thoracic Surgeon. Your Thoracic Surgeon's office will order this for you and tell you what you need to do.

At your follow up appointment

- Your Thoracic Surgeon will listen to your lungs, check your incision(s) and review your chest x-ray.
- Your Thoracic Surgeon will talk to you about the results of your lung surgery and what other treatment you may need to have.

When to call your Thoracic Nurse Navigator

Call your Thoracic Nurse Navigator if you:

- Have any new redness or swelling around your incision(s)
- Have any drainage or pus from your incision(s)
- Have any increase in pain or pain that does not go away with your pain medication
- Have diarrhea
- Are nauseated or vomiting
- Are not able to eat or drink
- New shortness of breath or an increase in your shortness of breath
- Have a cough that is new or that is getting worse
- Have a cough with mucous that is yellow or green in colour, and/or has a bad smell
- Have any new pain, redness or swelling in one or both of your legs

You can talk to your Thoracic Nurse Navigator by calling your Thoracic Surgeon's office. (Monday to Friday from 8:00am to 4:00pm – except on holidays).

Dr. Dickie at 905-576-8711 or 1-866-338-1778 at extension 36357

Dr. Parajian at 905-576-8711 or 1-866-338-1778 extension 36342

Dr. Trainor at 905-576-8711 or 1-866-338-1778 extension 34481

When you need to go to the emergency department

Go to the emergency department at the hospital closest to you if:

- You are not able to contact your Thoracic Nurse Navigator about any of the symptoms listed above
- Your incision dressing becomes wet or soiled with a large amount of your blood or body fluids
- You cough up a large amount of fresh blood
- You have a fever above 38.3° C/100.9°F at any time or above 38.0° C/100.4°F for more than an hour

Exercises for you to do after your lung surgery

Deep breathing and coughing exercises

1. Take a deep breath in through your nose.
2. Hold your breath for 1 to 2 seconds.
3. Blow the air out slowly through your mouth. Blow gently as if you are blowing out a birthday candle. This is called pursed lip breathing. Blow out for twice as long as you breathe in.
4. Support your incision with a pillow or your arms and then take a deep breath in and cough deeply. Do this 2 times in a row. If you feel congested and you are not able to spit up any mucous, you may need to rest for a few minutes before you repeat steps 1 to 4 again. You will need to do this until you have cleared the mucous.
5. Repeat steps 1 to 4 for 5 times.

Do these exercises at least 3 times a day. Do these exercises before you eat or at least an hour after you eat. Keep doing these exercises until your first follow up appointment with the Thoracic Surgeon.

Walking

Walking is the best exercise you can do after your lung surgery. When, where and how long you walk will depend on how you feel after you leave the hospital.

At least once a day, walk (choose 1):

- Up and down the hallways of your apartment or condominium
- Outside in a park or along a sidewalk. Walk where there are benches along the way as you may need to sit down and rest.
- In a shopping mall. Many malls open their doors as early as 7:30 am. Walking early in the morning will let you exercise before the mall gets busy.

Shoulder and arm exercises

After lung surgery the shoulder on the side of your operation may become stiff. This is because of the location of your incision. Do these exercises 2 to 3 times a day. Sit or stand in front of a mirror. Watching yourself in the mirror helps you to keep good posture. Make sure that your shoulders are level at the same height. Keep doing these exercises until your joint stiffness is gone.

1. With your hands together and elbows straight, lift your arms up over your head then slowly lower them. Do this 10 times.
2. Sit with your back straight and your feet firmly on the floor. Pull your shoulder blades together while turning your thumbs and hands outwards. Repeat 10 times.
3. Lift your arm on your affected side up and out (away from your body) with your thumb leading the way. Do this 10 times.
4. Hold a towel or cane behind your back with one hand over your shoulder and the other behind your back (as if drying your back). Gently pull on one end causing a stretch on the opposite side. Then pull on the opposite end. Repeat this by changing the position of your hands. Do this 10 times.
5. Lying on your back and with your knees bent, hold a wooden stick/towel in both of your hands and rest it on your stomach. Lift your arms straight up and over your head. Hold it there for 20 seconds, (keep breathing normally) before lowering your arms back down. Do this 10 times.

Your posture

After your lung surgery it is normal for you to have bad posture. It is important that you keep good posture after your surgery. When you are sitting, standing or walking, keep your shoulders at the same height and keep your back straight.

Please talk to any member of your healthcare team if you have questions or if you do not understand any of the information in this handout.

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