Central East Regional Thoracic Program
and
Thoracic Diagnostic Assessment Unit

Lung Surgery

Important Patient Information

Welcome to the Central East Regional Thoracic Surgery Division at Lakeridge Health in Oshawa. Your lung surgeon has scheduled you for lung surgery.

Inside the booklet you will find information about what to expect during your hospital stay and your recovery at home.

More Information about the process before and after surgery can be found in the booklet called “The Surgical Passport”.

Contact your Thoracic Nurse Navigator at
Phone: 905-576-8711    Ext. 4503
Toll Free: 1-866-338-1778   Ext.4503

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Section 1– Members of your Health Care Team

During your hospital stay you may meet the following people on your health care team:

**Thoracic Surgeon (also known as a lung surgeon)**
The Thoracic Surgeon will discuss your care and answer any questions about lung surgery. The Thoracic Surgeon will guide your care.

**Thoracic Nurse Navigator**
The Thoracic Nurse Navigator will support you and guide your plan of care with the health care team.

**Nurse**
Nurses will care for you before and after your surgery. They will provide emotional support, medications, nursing care, and teaching instructions.

**Physiotherapist**
The physiotherapist will provide chest physiotherapy, mobility progression and exercises to aid your recovery process.

**Social Worker**
The Social Worker may meet with you and your family if you wish. Social Workers provide counseling, community information, and discharge planning. Speak to your health care team if you would like to speak with a Social Worker.

**Registered Dietitian**
You have access to a Registered Dietitian who can provide nutrition counseling to support your recovery.

**Respiratory Therapist**
Respiratory Therapists can provide care to patients who have difficulty breathing, have chest tubes, require oxygen therapy, and take inhaled medications.

**Community Care Access Case Manager**
The community care access case manager will help plan your discharge to ensure you have the supports you need for care at home.

**Critical Care Team**
Depending on your surgery, you may go directly to the Critical Care Unit after surgery. Here, you will be monitored during your immediate recovery.

**Surgical Unit—7th floor (G wing)**
You will be transferred to the surgical unit after the immediate post-operative phase of your surgery.
Section 2 – Why do I need lung surgery?

In your body, you have 2 lungs. Your right lung has 3 parts. Your left lung has 2 parts. These parts are called lobes. Your surgeon may need to remove an entire lung or sections from one or both of your lungs.

Lung surgery may be needed because of an infection in your lungs or to remove a tumour.

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

Any lung tissue that is removed during lung surgery is sent to the lab to be reviewed.

Diagram of the Lungs

Image obtained from University Health Network (2008).
Section 3 – Different Types of Lung Surgery

Below is a list of the many different types of lung surgery:

- **Lobectomy** — the removal of one lobe (or part) of the lung

- **Bilobectomy** — the removal of two lobes (or parts) of the right lung

- **Pneumonectomy** — the removal of one entire lung

- **Pleural Pneumonectomy** — the removal of one entire lung and the lining of the chest cavity (the pleura), the diaphragm and a portion of the pericardium (the sac surrounding the heart)

- **Chest Wall Resection** — the removal of a part of the rib(s)

- **Wedge Resection or Segmentectomy** — the removal of a portion of lung tissue

- **Pleuroscopy/Thoracoscopy** — to look at the lining of your chest wall and lungs with a telescope. Sometimes, the surgeon will take a sample of the lining

- **Bullectomy** — the surgical removal of blisters that may form on the surface of your lungs

- **Pleurodesis/Talc Poudrage** — to insert a special chemical in your chest. This is used to control fluid build up in the space outside of your lungs that may lead to lung collapse.
Section 4 – Different ways that lung surgery can be done

1. **Thoracotomy** - is a method of lung surgery also known as open lung surgery. The Thoracic Surgeon makes a large incision between two ribs to open the chest cavity. After the surgery, your Thoracic Surgeon will close the ribs, and incision with stitches.

2. **Video Assisted Thoracic Surgery (also known as VATS)** - Lung surgery done this way uses a long thin tube with a camera and small surgical instruments. These are inserted into the chest through small incisions made between your ribs.

3. **Mediastinoscopy** - A small incision is made at the bottom of your neck. The Thoracic Surgeon uses a long thin tube with a camera to view the inside of your upper chest and the front of your lungs. At the same time the surgeon may do minor surgery.

4. **Thoracoscopy** - A small incision made between the ribs. The Thoracic Surgeon uses a long tube with a camera to look inside the chest and outside the lungs. This procedure is done to remove blood or fluid, take a sample of tissue or to perform a pleurodesis.
Section 5 – What happens if the tumour is cancer?

If your Thoracic Surgeon tells you that the mass/tumour is lung cancer then further treatment will depend on many things such as:

- Lung cancer cell type
- Size of the tumour
- Location of the tumour in the lungs
- Stage of the cancer
- Your age and general health
- Your feelings about the treatment

Surgery is a procedure that may cure lung cancer in its early stages.

Radiation therapy and/or chemotherapy are other treatments for lung cancer. You may have one or both of these.

Your healthcare team will provide you with information and support to help you to make a decision that is best for you.
Section 6 – Preparing For Lung Surgery

1. Pre-Operative Visit

- Before your lung surgery you will be scheduled to attend a pre-operative appointment. This appointment is important. At this appointment information and teaching for your lung surgery will be reviewed with you.

- Please refer to your Surgical Passport booklet for important information about your pre-operative appointment.

2. Helpful Hints Before your Lung Surgery

Your lung surgery will be cancelled or delayed if you miss your pre-operative appointment.

- Have someone help you when you return home after surgery.
- Read information and be ready to ask questions so you know what to expect.
- If you have a cold prior to surgery, contact your Doctor or Nurse Navigator.

- Stop Smoking As Soon As Possible before Surgery—Ideally 6 weeks!
  - Smoking puts you at risk for lung problems after surgery.
    Tobacco smoke destroys cilia (tiny hairs that line the airway). Cilia help you cough secretions from your lungs. This is important after surgery.

  - Tobacco in any form should be avoided. This includes pipes, cigars, cigarettes, and chewing tobacco.

  - It is never too late to stop smoking. Smoking cessation programs can help you. Your thoracic nurse navigator can assist you with smoking cessation resources in your community.

Free Canadian Cancer Society Smokers Help Line
TOLL FREE: 1-877-513-5333
Section 7 – What to expect the day of your surgery

You can expect:

- An intravenous line (IV) to maintain body fluids, and for pain control.
- Chest tubes to help keep your lungs open and drain extra fluid.
- Continuous Oxygen with humidity.
- A small “arterial” catheter in your wrist to allow for frequent blood tests.
- A dressing over the incision.
- A catheter from your bladder allows urine to drain. It also helps to monitor your kidney function.
- The Nurse will explain and give information to you for “PCA” (Patient Controlled Analgesia Pump).
- Epidural Catheter (a small flexible tube in your back) for pain control. There is a video about “PCA” you may watch.
- You will be on bed rest until later in the day.
- You may be helped to sit at the side of the bed. Do not try this yourself the first time.
- Every 4 hours, the nurse will help you dangle at the side of the bed for a few minutes.
- Do your deep breathing exercises and supported coughing exercises every 4 hours while awake. You will be shown how to use an “incentive spirometer” to help expand your lungs.
- Please ask for help if there is anything you do not understand.
- You will be allowed fluids to drink later in the day.
- You will be given medication to control any nausea or vomiting.
Section 8 – What to expect after lung surgery

During your hospital stay, the health care team will help you prepare to go home.

- Each person recovers at his or her own pace. Recovery time depends on a number of things such as type of lung surgery, age, general health and mental attitude.

- If your surgery is done using VATS (Video Assisted Thoracic Surgery) then the average recovery time is 4-6 weeks.

- If your surgery is by Thoracotomy, the recovery time will be longer and could take up to 3 months. With this method of surgery you may also experience pain for sometime after the procedure.

- Depending on the type of surgery you have your hospital stay will be 2-7 days.

1. Pain

After surgery you will receive pain medication as needed. It is important to take pain medication when you have pain. This will help you to recover. Be sure to tell your healthcare team if your pain medication is not working.

You will only be on the pain medication for a short time and will not become addicted to it.

Epidural Pain Control

- This is a common method of pain control after lung surgery. A small tube is put into your back by the doctor. The tube is attached to a pump and the pump will deliver the pain medication through the tube.

- You may have epidural pain control for about 3-5 days after lung surgery. After this time you will be put on another form of pain medication, for example pain pills, if required.

- Even with epidural pain control you can still sit at the side of the bed and walk around.
Section 8 – What to expect after lung surgery (Continued)

Listed below are some common side effects of pain medication. Tell your nurse if you have any of these side effects when on the pain medication. Pain medication can be adjusted to manage side effects and pain control.

**Common Side Effects of Pain Medication**

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

**Constipation***

- Constipation is a common side effect from pain medication. Your health care team can help you manage constipation due to pain medication.

- You will be prescribed a stool softener and mild laxative to manage any constipation while on the pain medication. Your normal routine should return once you stop taking the pain medication.

- Drink plenty of fluids (a minimum of 6 cups per day unless your doctor or dietitian tells you otherwise).

- If you have no diet requirements or special needs add bran, high fibre breads, cereals, berries, dried fruit or prune juice to your diet.

If you have no bowel movement within **3 days** contact your health care team.
2. Getting Out of Bed

The first step to get moving after lung surgery is sitting up on the side of your bed. Members of your healthcare team will help you with this. Right after lung surgery, sitting up may not be easy. See the pictures and steps below to help you sit up after surgery.

**Getting out of Bed after Lung Surgery**

- Roll onto your side where there is no incision.
- Place your upper hand on the bed below your elbow.
- Raise 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.

![Figure 1 — Getting out of Bed after Lung Surgery](image)
3. 3-5 Days After Surgery

The nurse and/or doctor will continue to assess:

- Breathing.
- Circulation.
- Hydration (your need for fluids).
- Signs of bleeding and/or infection.
- Healing of incision (wound and dressing).
- The IV will be discontinued.
- After the chest tubes are removed, you will have another chest x-ray. It is important to see that your lungs are expanding enough.
- You may have another EKG to monitor your heart function.
- The PCA will be discontinued, and you will be started on analgesic (pain pills).
- After the chest tubes are removed, you should be walking in your room and then the hallway as you feel comfortable.
- Continue with Deep Breathing and Supported Coughing Exercises every four hours.
4. **Shortness of Breath**

You may have shortness of breath after lung surgery. As you recover it is important for your lungs to expand and clear mucous out. Good pain control, getting up out of bed after surgery and doing your deep breathing and coughing exercises will all help. See Appendix A at the back of this booklet for instructions on deep breathing and coughing.

**Oxygen**

- After lung surgery your oxygen levels will be monitored by your healthcare team.

- You may need to receive oxygen by face mask (see Figure 2) or nasal prongs for a few days after lung surgery. Nasal prongs sit below your nose and provide oxygen in your nose only.

- When your lungs are working well enough your healthcare team will take the oxygen off.

5. **Chest Tube**

- A chest tube is a hollow tube placed between the ribs and into the pleural space (see Figure 3). After lung surgery, 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.

- The chest tube is placed into the side of your chest through small incisions. A small stitch and tape will hold the tube in place. The chest tube will be attached to a container to collect any fluid.

- The chest tube is usually removed when drainage decreases or stops. Sometimes you may be sent home with the chest tube in place for a few more days.

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Figure 2
Oxygen Mask

Figure 3
Chest Tube

Image Obtained from charlestonpulmonology.com
6. Incisions

The size and location of your incision will depend on your type of lung surgery. Your Thoracic Surgeon will tell you how big your incision will be and where your incision will be located.

- Do not put lotions or creams on the incision until it is completely healed.

- There may be a "bump" along your incision. This bump will get smaller over time.

- The area around your incision may feel numb. This is normal. It may last forever or only for several months.

- Your incision may have stitches or staples. The Thoracic Surgeon will tell you when these are going to be removed. Usually stitches and staples are removed 7-10 days after your lung surgery at your follow-up appointment.

- If you have steri-strips on your incision these should be removed 10 days after discharge.

7. Other Tubes and Lines

**Urinary Catheter (Foley Catheter)**

- A Foley catheter is a hollow tube that drains your bladder. The tube will be connected to a bag to collect the urine you pass. The nurse will measure the amount of urine passed.

- The Foley catheter is usually in for 1-2 days after lung surgery.

**Intravenous Line (IV)**

- You will have an IV line after surgery. This is used to give you fluid and medication. The IV line is taken out once you are drinking well.

**Arterial Line**

- After surgery if you spend time in the critical care unit you will have an arterial line. This is another type of IV line that can be used to take blood samples, measure blood pressure, give fluids and medications.
8. Nutrition

• The night after your surgery you will be offered a full diet meal.

• Your appetite should return to normal within a few weeks. Your appetite will get better as your physical activity improves.

• If you are having difficulty eating after surgery you can ask your health care team to see a Registered Dietitian.

• Some other helpful tips for eating during recovery:

  • If you have little to no appetite try smaller, more frequent meals.
  
  • Ensure you drink fluids (at least 6 cups per day unless your doctor or dietitian tells you otherwise).
  
  • Eat high protein and high calorie foods.
  
  • Soups, plain foods and light meals can be easier to digest.
  
  • If poor appetite continues to be a problem, contact your health care team and ask to see the Dietitian.

9. Emotions

After surgery you may feel tired and discouraged for days or weeks. As you recover and build your strength, this should improve.

Please talk to your health care team if you are concerned about your emotions.
You can ask your health care team to see a social worker.

10. Medications

During your hospital stay, your regular medication may change. Your medications may be reviewed by the doctor before you leave the hospital.
Section 9 – Activity at home after lung surgery

After surgery gradually increase your activity. Follow the four recommended exercises in APPENDIX A at the end of this booklet. These four exercises 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

Other Activities after Surgery

- **Showering / Bathing**
  - Check with your surgeon if you can shower once you get home. Be sure you feel strong enough and ask for help where needed. You should have a daily shower. Use a mild soap. Let the water run over your incision. Pat the incision dry with a towel.

- **Travel**
  - Check with your Thoracic Surgeon about travel. It is usually recommended that **you do not travel by air for 2-3 weeks**.

- **Lifting**
  - **Avoid** heavy lifting, carrying, pushing or pulling for 4 - 6 weeks. This includes vacuuming, carrying heavy groceries, shoveling snow, etc.
  - You may only lift up to 22kg (10 pounds) during recovery. Your surgeon will tell you when you can start lifting more and return to your regular activities.

Heavy lifting can strain your incision. **DO NOT LIFT** if you have any discomfort.
Returning to work

- You can plan to be off work for at least 4 - 6 weeks. Depending on your job, you may need to be off for 8 - 12 weeks.
- Talk with your surgeon to decide when it is safe for you to return to work.

Driving

- You should not drive until you are off the pain medication. The pain medication can make you drowsy.
- You must also have full movement of your arm and shoulder before you drive. After surgery this usually takes 2 - 3 weeks.

Sexual Activity

- You may resume sexual activity as before your surgery, once you are feeling well.
- Avoid activities that cause strain on your incision.

Sports

- Swimming:
  - You may swim once your incision is healed and you get direction from your surgeon.
  - NOTE: If you had a pneumonectomy (whole lung removed), you may not float as you did before. You must try swimming in shallow water first. **When out on a boat, always wear a life jacket.**
- You can golf after 3-4 weeks.
- Avoid jogging, tennis, aerobics, and racquetball for 4 - 6 weeks.
- Talk to your surgeon about sky diving and scuba diving. **Scuba diving is not recommended after some lung surgery.**
Section 10 – Follow up appointment

- On the day of discharge from the hospital you will be given a time and date for a follow up appointment to see your Thoracic Surgeon.

- If you do not get an appointment for follow up with the Thoracic Surgeon before leaving the hospital, call the number below to arrange a follow-up visit. **Do this within a week of going home.**

  Phone: 905-576-8711 Ext. 4503  
  Toll Free Phone: 1-866-338-1778 Ext. 4503

The day of your follow up appointment:

- Bring your hospital and health card with you to your follow up appointment.

- Bring your medication list and all medications you are taking in their original containers.

- You will need to have a chest x-ray before you see the Thoracic Surgeon. **Your surgeon’s office will arrange this and notify you of the process.**

- At the follow up appointment the Thoracic Surgeon will listen to your lungs, check your incision and review your chest x-ray.

- Any reports from your lung surgery will be reviewed and a treatment plan will be discussed.
Section 11 – When to call the Thoracic Nurse Navigator?

Contact your Thoracic Nurse Navigator for anything that concerns you about your lung surgery and/or recovery.

Be sure to call if you have any of the following:

- New redness or swelling around your incision(s)
- Any drainage or pus from your incision(s)
- Increase in pain at your incision(s)
- Diarrhea
- Nausea or vomiting
- Weight loss or continued poor appetite
- New shortness of breath or an increase in shortness of breath
- New or worsening cough
- Coughing up mucous that is yellow or green in colour, and/or has a bad smell
- New pain, redness or swelling in one or both of your legs

Contact your Thoracic Nurse Navigator at
Phone: 905-576-8711 Ext. 4503
Toll Free: 1-866-338-1778 Ext. 4503
Section 12 – When to go to The Emergency Department?

Go to the nearest Emergency Department if you feel you have an emergency, and cannot get in touch with your thoracic nurse navigator and you feel unwell or have a concern that cannot wait.

Go to the Emergency Department if you have any of the following:

- Pain that is not relieved with medication or rest
- Your incision dressing becomes wet or soiled from a large amount of blood and/or drainage of body fluids
- Cough up a large amount of fresh blood
- You have chills or a fever (temperature over 38.5 degrees)
Recommended Exercises After Lung Surgery

1. Deep breathing and coughing exercises

1. Take a deep breath in through your nose
2. Hold for a second or two.
3. Blow the air out slowly through your mouth, gently as if blowing out a birthday candle. This is called pursed lip breathing. Try to blow out for twice as long as you breathe in for.
4. Repeat slowly 5 times then...
5. Support your incision with a pillow or your arms, take a deep breath and cough deeply, twice in a row. If your cough is wet, but you are unable to expectorate mucous, you may need to rest briefly, then...
6. Repeat steps 1-5, until you have cleared the mucous.
7. If your cough is dry, repeat the deep breathing exercises only (steps 1-4).
8. Practice these exercises at least 3 times a day, before eating or at least an hour after eating. Continue these exercises until you are comfortable doing your regular activities of daily living and your cough is dry.

- Repeat these exercises 10 times every hour while you are awake.
- Continue to do these exercises until your first follow up appointment with the Thoracic Surgeon.

2. Walking

- Walking is the best exercise you can do after lung surgery. When, where and how long you walk will depend on your condition when you leave the hospital.
- Walk at least once every day as you can tolerate.

Places to walk:

1. Up and down the hallways of your apartment or condominium.
2. Outside in a park or along a sidewalk. Make sure there are benches along the way. You may need to sit down and rest.
3. In shopping malls, early in the morning. Many malls now cater to people who need to exercise indoors. Many malls open their doors as early as 7:30 am. This way you can exercise before crowds arrive.
Recommended Exercises After Lung Surgery (Continued)

3. 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 2-3 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.

Continue these exercises until your joint stiffness is gone.

A. With your hands together and elbows straight, lift arms upwards over your head, within comfort, then slowly lower. Repeat 10 times.

B. Sit with your back straight and feet firmly on the floor. Pull your shoulder blades together while turning your thumbs and hands outwards. Repeat 10 times.

C. Lift your arm on the affected side up and out (away from the body) with thumb leading the way. Repeat 10 times.
E. Lying on your back with knees bent, hold a wooden stick/towel in both hands and rest it on your stomach. Lift your arms straight up and over your head to the floor. Hold for approximately 20 seconds (breathe normally) - return to starting position. Repeat 10 times.

4. Posture

After you have surgery with a chest incision, it is easy to develop bad posture. It is important that you keep good posture after your surgery. When you are sitting, standing or walking, make sure your shoulders are level and your back is straight.

APPENDIX A

Recommended Exercises After Lung Surgery (Continued)

3. Shoulder and arm exercises

D. 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, changing towel/cane position to opposite hands. Repeat 10 times.
If you need information about the time of your lung surgery, tests or appointments with your Thoracic Surgeon, call your Thoracic Surgeon’s office at the number listed below.

Central East Thoracic Clinic & Diagnostic Assessment Program
Lakeridge Health Oshawa
1 Hospital Court
Oshawa, Ontario
L1G 2B9

Phone: 905-576-8711 Ext. 4503
Toll Free: 1-866-338-1778 Ext. 4503

References


