

# Open Thoracotomy Pulmonary Resection

Please bring this guide to the hospital  
on the day of your surgery.

### **Disclaimer**

This is general information developed by The Ottawa Hospital and adapted by Nova Scotia Health Authority. It is not intended to replace the advice of a qualified health care provider. Please talk with your health care provider to determine the appropriateness of this information for your situation.

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# Introduction

You are being admitted to the Victoria General Hospital at Nova Scotia Health Authority (NSHA) for Pulmonary Resection. This guide will tell you how to get ready for surgery, your hospital stay, and care at home after surgery.

The Health Care Team has put together a Clinical Pathway so you will know what will happen to you before surgery and on a day-to-day basis after surgery. This Clinical Pathway is a general guideline about your care. Your hospital stay will depend on the type of surgery you are having. You will be placed on either the Thoracotomy/Pneumonectomy Clinical Pathway (pages 15-16) or the Thoracotomy/Lobectomy Clinical Pathway (pages 17-18).

Please read and bring this guide to the hospital. Your Health Care Team members will refer to this guide during your hospital stay.

**The Thoracic Clinic is located at the Victoria General Hospital, Dickson building, 1st and 4th floors.**

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# Health Care Team

These members of the health care team will help you during your hospital stay.

## **Thoracic Surgeon**

The thoracic surgeon and team of surgical residents will talk about your care with you and answer any questions you have. The thoracic surgeon will be in charge of your care.

## **Nurse Practitioner**

The nurse practitioner (NP) works with the surgeons and residents. The NP will help you to manage any acute or chronic conditions, prescribe medications, order and interpret laboratory or diagnostic tests, and perform procedures.

## **Registered Nurse and Licensed Practical Nurse**

Registered nurses (RN) and licensed practical nurses (LPN) will care for you before and after your surgery. They provide emotional support, medications, nursing care, and teaching instructions.

## **Physiotherapist**

The physiotherapist (PT) will help you with getting out of bed, walking, deep breathing, coughing, and arm and shoulder exercises.

## **Social Work**

Social work services can be accessed at any point during your stay. A social worker will meet with you and your family for counselling, community information, and discharge planning services as needed. Before and after your surgery, you may feel a variety of emotions, such as fear, sadness, anger and/or loss of control. Sometimes help is needed to cope with these feelings.

## **Intermediate Care Unit (IMCU)**

The IMCU team includes doctors, nurses, a physiotherapist, a respiratory therapist, a social worker, a dietitian, and an occupational therapist. The 6th floor intermediate care unit is a monitoring unit located on the thoracic unit.

## **6A Thoracic Unit**

The team includes doctors, nurses, physiotherapists, respiratory therapists, a social worker, a continuing care coordinator, a dietitian, and an occupational therapist.

# Getting Ready For Surgery

## Helpful points before coming to hospital

- Stop smoking! Tobacco in any form should be avoided. This includes pipes, cigars, cigarettes, and chewing tobacco. Tobacco smoke has many harmful substances that damage cells. Over time these cells can become cancerous. Smoking also places you at risk for lung complications after surgery. Tobacco smoke destroys cilia (lining of the airway). Cilia help clear secretions (mucus). As a result, you will be less able to clear secretions after surgery.
- Even shortly before surgery, stopping smoking helps recovery. It is never too late to stop smoking. The following smoking cessation programs can help you stop smoking:
  - **Getting Started Sessions**
    - › this service consists of a 1 hour information session where participants get information about the stopping process as well as options for followup support. The program is free. Getting Started Sessions are offered regularly throughout NSHA.
  - **Keeping it Going Sessions**
    - › this is a 4 week program where participants receive a workbook, tips, advice and strategies, and an invitation to try Nicotine Replacement Therapy (NRT) to support them in their efforts to be tobacco-free.
- If you would like to know more about Stop Smoking Services, please call 902-424-8866.
- Another helpful resource is the Lung Association of NS; please call 902-443-8141.
- Make plans for help in your home after surgery before coming into hospital.
- Look at your Clinical Pathway so you and your family know what to expect on a daily basis.

## Pre-admission visit

- You will have blood tests, urinalysis (urine tests), an electrocardiogram (heart test), and a chest X-ray.
- An anesthesiologist (doctor who gives you sleeping medication during surgery) will ask you questions about your health, and explain your anesthetic (sleeping medication) and pain control.
- A nurse will ask you questions and tell you about leg, breathing, and coughing exercises, pain control, and skin preparation. It is helpful if you practice deep breathing and coughing exercises before your surgery (see page 10).

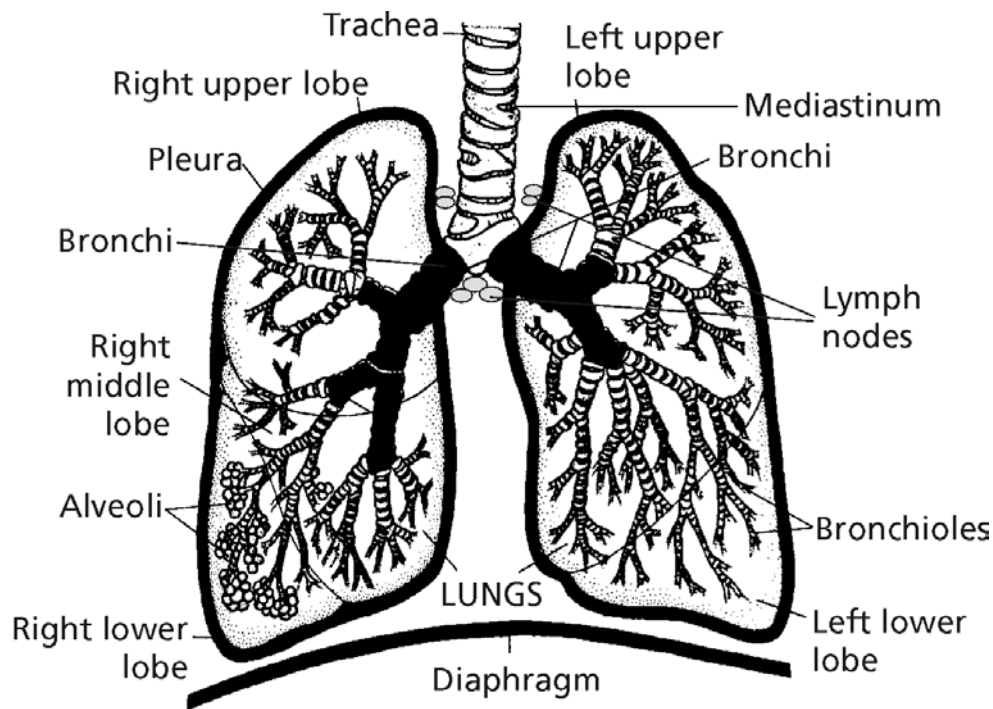
## Day before and day of surgery

- Do not eat or drink after midnight the night before your surgery. **If you have been told** to take your usual medication on the morning of surgery (for example, your blood pressure pills or heart pills), use only a sip of water.
- Do not smoke or drink any alcohol 24 hours before surgery.
- Bring in both home and work telephone numbers of your spouse or a relative who will be helping you, so they can be contacted if needed.
- Bring your personal care items, such as toothbrush, comb, shampoo, and cream. Do not bring scented products. NSHA is scent-free.
- Do not bring any valuables. The hospital is not responsible for the loss of any item.
- If you have a personal directive, please bring a copy with you.
- Bring in appropriate-fitting footwear such as sneakers.

# Thoracic Surgery

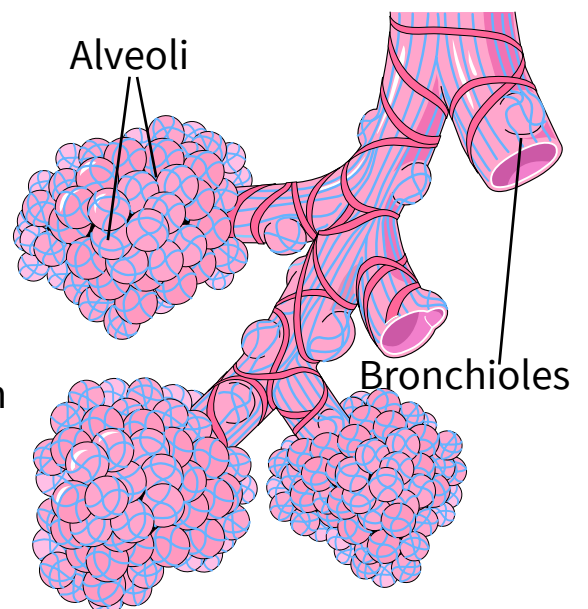
## The lungs

The lungs are part of the respiratory (breathing) system. They take up most of the space in the chest. They are separated from each other by the mediastinum, an area that contains the heart, trachea (windpipe), esophagus, and many lymph nodes. The right lung has 3 sections, called lobes, and is a little larger than the left lung, which has 2 lobes. The lining of the chest wall is called the pleura.



The lungs exchange oxygen and carbon dioxide. Oxygen is in the air we breathe. Air enters the nose and mouth, then travels down the windpipe (trachea) into the large airways or tubes called bronchi. In the lungs, the bronchi divide into smaller tubes called bronchioles. The bronchioles end in tiny air sacs called alveoli.

This is where oxygen passes into the bloodstream and is carried to the cells. The cells need oxygen to live and carry out their normal functions. The lungs also get rid of carbon dioxide, a waste product of the body's cells. At rest, a person breathes at a rate of 12-14 breaths per minute and moves about 500 mls of air with each breath.





## Lung cancer

Lung cancers are generally divided into 2 types: non-small cell lung cancer and small cell lung cancer. Non-small cell lung cancer is more common than small cell lung cancer.

The cancer cells of each type grow and spread differently. Treatment for lung cancer depends on the lung cancer cell type, size, location in the lungs and extent (how far it has spread), as well as the person's age, general health, and feelings about the treatment. Surgery, radiation, and chemotherapy can treat lung cancer. Surgery is a procedure that may cure lung cancer in its early stages if it has not spread to other parts of the body. Your treatment includes surgical removal of part or the entire lung. This is called pulmonary resection.

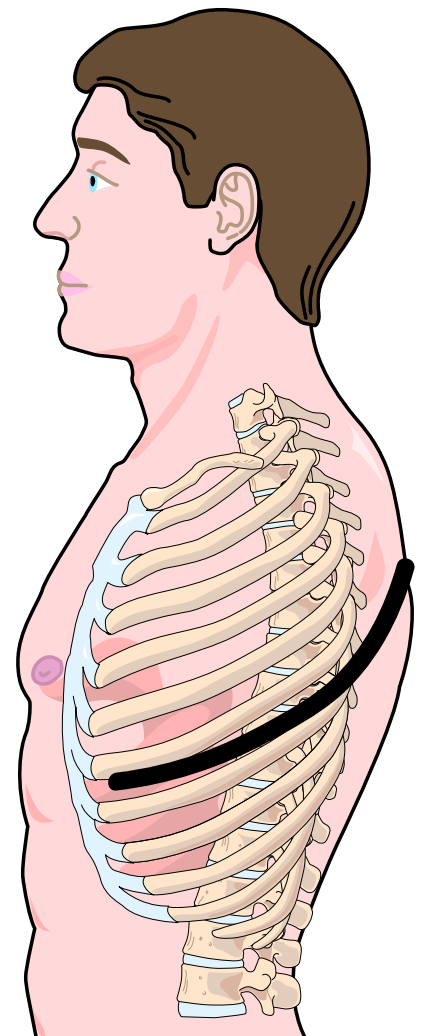
## Pulmonary resection

Three main types of surgery are used in lung cancer treatment. The type depends on the size and location of the tumour, the extent of the cancer, and the general health of the patient. The surgeon will remove only the diseased portion of the lung.

- › a surgery to remove a small part of the lung is called a segmental or wedge resection.
- › a surgery to remove a lobe of the lung is called a lobectomy.
- › a pneumonectomy is the removal of an entire lung.

During the procedure the chest wall is opened, ribs are spread apart, and the lung is entered to remove the diseased portion, which causes the lung to collapse. After lung surgery, air and fluid may collect in the chest. The air and fluid are drained through a tube (chest tube) which is connected to a drainage system.

An incision (cut) will usually go from just below your underarm to around your back. The incision is closed with sutures (stitches) or staples and covered with a dressing.



The surgery is done under a general anesthetic, which means that you will be asleep. The length of surgery depends on the extent of the resection, and may take up to 5 hours. After surgery, you will wake up in the Post-Anesthetic Care Unit (PACU). You will stay there until you are stable and then be transferred to the 6th floor Intermediate Care Unit (IMCU) for an overnight stay.

**Several monitoring devices will be used. These include:**

- A cardiac monitor to observe your heart function.
- A clip attached to your finger to monitor oxygen levels in your blood.
- 1 or 2 intravenous (IV) lines in your arm or neck.
- A small tube in an artery (art line) in your wrist for frequent blood tests and blood pressure measurement.

You may also have other tubes including a chest tube(s), Jackson-Pratt Drain (JP drain), and urinary catheter.

Two (2) family members at a time may visit you in the Intermediate Care Unit. The IMCU visitors lounge is beside the 6th floor elevator. When you are ready, you will be transferred to a room on the 6A Thoracic Unit.

## **After Surgery**

### **Pain management**

Pain is personal. The amount or type of pain you feel may not be the same as others, even for those who have had the same surgery. The goal is minimal (as little as possible) pain at rest and managed pain with activity. With good pain control at rest, you will be comfortable enough to sleep. With activity, there may be a bit more pain, but the pain should not stop you from coughing, deep breathing, and moving about as well as you like.

Your pain will be assessed using a scale of 0–10. Zero (0) is no pain and 10 is the worst pain possible. You will be asked to rate your pain level during rest and activity. You will also be asked if the pain prevents you from moving and if you are satisfied with your pain. Pain is harder to control when it gets to be too much.

### **Why is pain control so important?**

Less pain means less stress on your body. Your body heals better with less stress. With less pain, you start walking, do your breathing exercises, and get your strength back quicker. This lowers your chances of other problems, such as infection and blood clots.

## **Pain control can help you:**

- Have greater comfort while you heal.
- Get well faster – with less pain you can start walking, do your breathing exercises, and get your strength back more quickly.
- Avoid problems such as pneumonia and blood clots.
- Leave the hospital sooner.

The Acute Pain Service (APS) team may be involved in your care to help manage your pain. If APS is involved in your care, your pain may be managed in one of two ways:

- › paravertebral catheter (PVC)
- › patient-controlled analgesia (PCA)

If you have a PVC, a pump will deliver a local anaesthetic medication continuously through the catheter. The drug “freezes” or “numbs” the area where you had surgery. You may need additional pain medication either by needle or pills.

PCA lets you control your own pain medicine. You will have a button to push that sends prescribed pain medication into your IV. The pump is programmed to make sure you can't give yourself more medicine than is safe and right for you.

## **Tell your nurse if you have any of the following:**

- › itchy skin
- › nausea and/or vomiting (feeling sick to your stomach and/or throwing up)
- › pain that does not get better

## **Key points:**

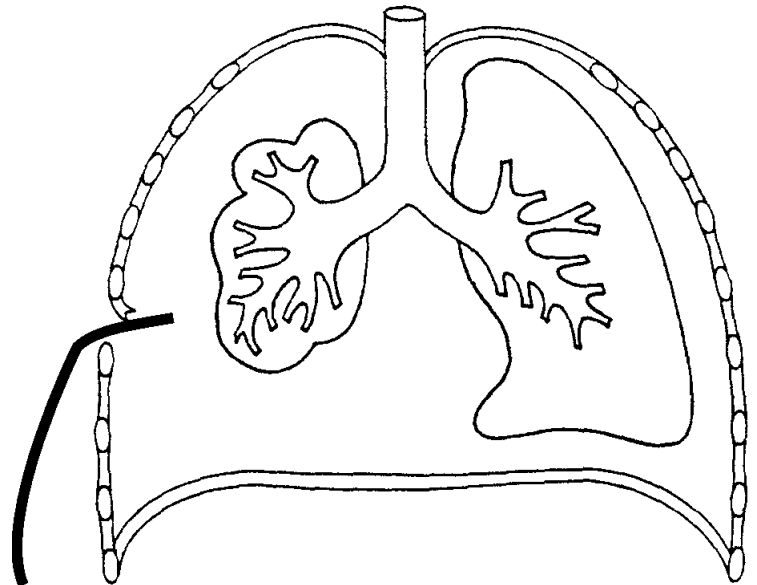
- › pain is harder to manage if it is out of control.
- › help us measure your pain using a 0-10 scale.
- › tell us if you have pain that will not go away or gets worse.

## Chest tube drainage

This section is for all pulmonary resection procedures except pneumonectomy (removal of the entire lung).

After chest surgery, extra air and fluid tend to collect in the chest cavity. One or two chest tubes will be placed around the lung in your chest. The chest tube(s) is attached to a drainage system to help drain the fluid and air. Expect to see blood in the tube for the first couple of days; this is normal.

An X-ray of your chest will be taken to decide when the tube(s) should come out. The tube(s) is generally removed after a few days, however it may be removed as soon as the day after your surgery.



**Chest tube drainage in the chest cavity**

The tube(s) is generally removed after a few days, however it may be removed as soon as the day after your surgery.

Avoid lying on the chest tube(s) while in bed. Do not pull on the tube(s). You will be helped to walk in the hall while the chest tube(s) is in place. Tell your nurse if you find it hard to breathe.

## Intravenous (IV)

You will have an IV to replace your fluids until you are able to drink well. Do not pull on the IV tubing. When you are walking, push the IV pole using your hand that does not have the IV.

## Urinary catheter

You will have a urinary catheter (tube) to drain urine out of your bladder. This catheter will be removed after a few days. The nurse will clean your catheter site every 8 hours to prevent infection.

## Wound care

The dressing on your incision is usually removed after a few days and the incision is left open to air to promote healing.

You will have a dressing at your chest tube site. It will be changed every 3 days or as needed.

## Oxygen

Oxygen is an important part of the air we breathe. Sometimes the body may need extra oxygen. This may be because of lung disease, heart disease, and the demands of surgery. Extra oxygen can help restore normal oxygen levels in the blood and body tissues and reduce the workload of the heart and lungs. During your hospital stay, you may receive extra oxygen. This is given through a mask over your nose and mouth or small tubes in your nostrils (nasal cannula).

The amount of oxygen in your blood is tested by placing a small clip on your finger. This is called pulse oximetry. This test is used to check that your body is getting the right amount of oxygen. When you no longer need extra oxygen, the clip will be removed.

## Deep breathing and coughing

The lungs exchange oxygen and carbon dioxide. Oxygen passes into the bloodstream from tiny air sacs called alveoli and is carried to the cells. The cells need oxygen to live and carry out their normal functions. The lungs also get rid of carbon dioxide, a waste product of the body's cells. Usually, the alveoli stay open because we tend to take large breaths. Because of surgical procedures, anesthesia, pain, or immobility (not moving), we tend to take smaller breaths, which may cause the alveoli to close. Deep breathing and coughing exercises after surgery will help keep your lungs healthy.

Deep breathing exercises work best when you are sitting up in a chair or on the side of the bed. **To do deep breathing exercises:**

- Support your incision with a small blanket or pillow.
- Take a deep breath in through your nose. Hold for 2-3 seconds. Breathe out through your mouth slowly.
- You may also use the incentive spirometer by putting your lips tightly around the mouthpiece. Breathe in deeply and try to hold the ball up as long as you can. Remove the mouthpiece, breathe and rest for a few seconds.
- Repeat either exercise 10 times every hour while you are awake, until your activity level increases.

Coughing exercises help to loosen any secretions that may be in your lungs. These can be done after your first 5 deep breaths. **To do coughing exercises:**

- Support your incision with a small blanket or pillow.
- Take a deep breath and cough – clearing your throat is not enough.

## Ankle exercises

These exercises help the blood circulate in your legs while you are less mobile. Do these 10 times every hour while you are awake, until your activity level increases.

With your legs flat on the bed:

- Point your feet toward your body.
- Point your feet away from your body.
- Move your ankles in a circle clockwise, and then counter-clockwise.

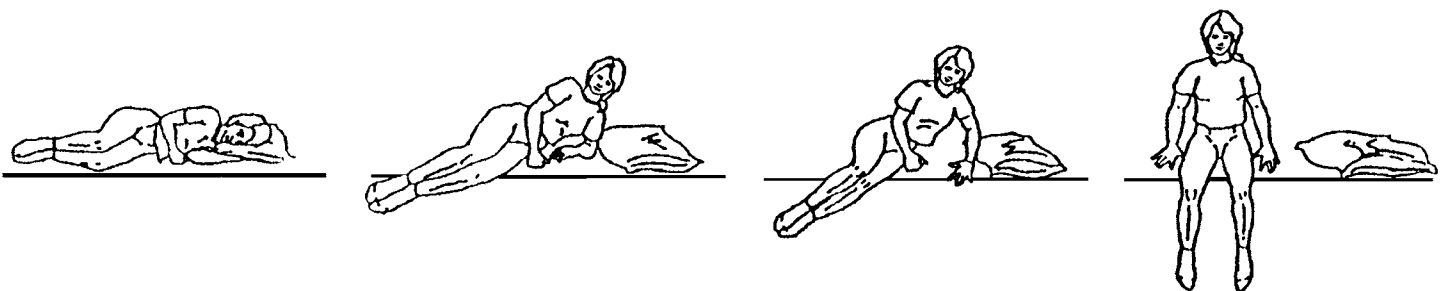
## Moving in bed

While you are in bed, it is important to move. Do not worry about the tubes you have in place, just avoid lying on your incision and chest tube. Move at least every 2 hours while awake.

- Support your incision with a small blanket or pillow.
- Bend your knees and roll (e.g., from your non-operative side to your back).

## Getting out of bed

- Do not get out of bed by yourself for the first time. A nurse will help you.
- Bend your knees and 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 lower elbow.
- Swing your feet and legs over the edge of the bed and bring your body to a sitting position.
- If you feel lightheaded, rest for a few minutes and call your nurse to help you.



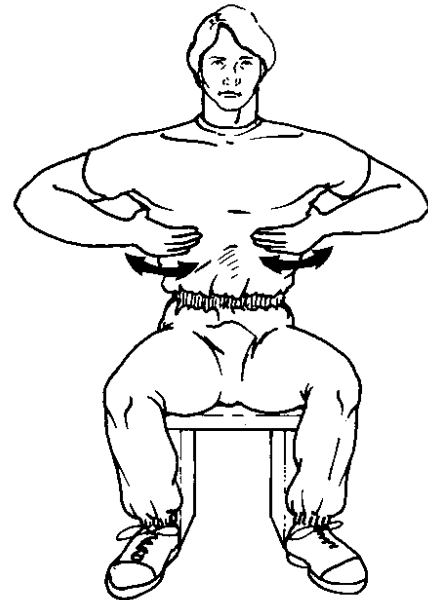
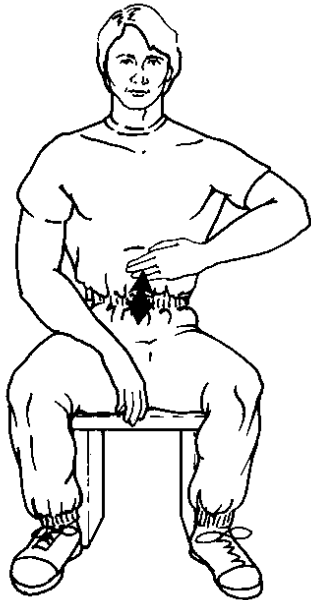
## Post-thoracotomy exercises

The physiotherapist will supervise and help you in the progression of this exercise program. Each exercise should be repeated 10 times every hour at first, unless you're told otherwise. Continue to do this program when you are at home. Some exercises will help you with airway secretion removal and help to avoid breathing problems such as pneumonia. Others will generally get you active in the recovery period.

### Post-op (post-operation) day #1

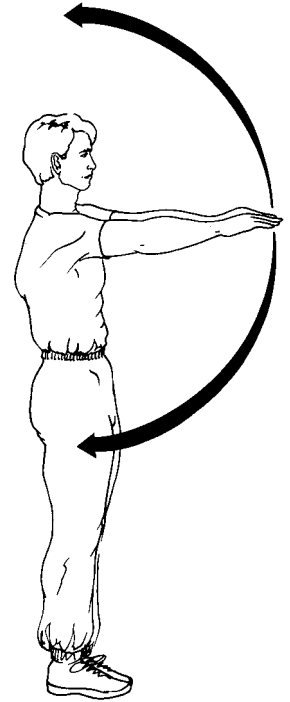
With help, you will be required to sit up in a chair and/or walk 2-3 times/day.

1. Sitting, with shoulders dropped and leaning forward, place one hand gently on your stomach just below your rib cage.
  - › you should feel your stomach expand (get bigger) as you breathe in and sink in as you breathe out. (This is diaphragmatic breathing.)
2. Sitting, place a hand on the ribs of the side of your surgery.
  - › breathe in deeply as you try to expand your rib cage sideways against your hand.
  - › breathe out of your mouth slowly.



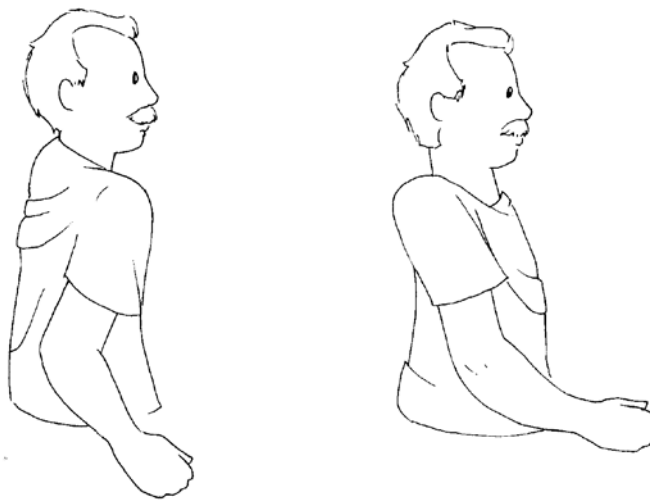
3. Take a deep breath in through your nose, hold for 2-3 seconds, then let the air out slowly through your mouth (lips pursed) breathing out as long as possible. Repeat this cycle 3 times in a row before coughing (#4).
4. Supported cough: use a pillow or folded blanket to support your incision as you cough to clear secretions out of your lungs.

5. In bed, or sitting, or standing, lift both arms up in front of you (keeping elbows straight) while breathing in. Lower your straight arms while blowing out. See image at right:
6. Feet and ankles: pump and circle constantly until walking on your own.
7. Incentive spirometer: the physiotherapist or nurse will show you how to use this to improve your breathing.



### Post-op day #2

- Continue with the post-op day #1 exercises and add the following exercises 3 times per day.
  - With minimal assistance, you should walk in your room and progress to the hallway at least 3 times.
8. Sitting or standing, roll your shoulders in both directions (make sure both shoulders are doing the same movement).



9. Sitting or standing with your arms by your side, lift your arms sideways (with elbows straight) leading with your thumbs.

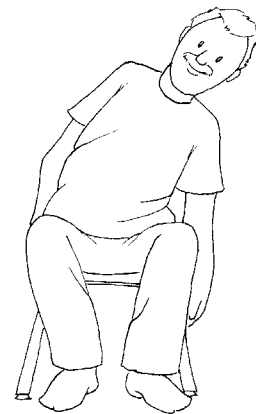
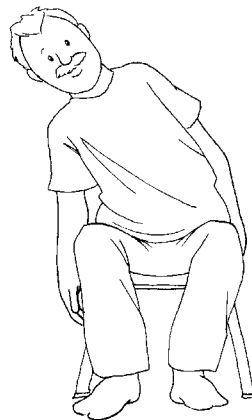
### Post-op day #3

- Do all the exercises (post-op days #1, 2, 3) 3 times per day.
- You should walk in the hallway without help 3 times.



10. Sitting with your arms crossed in front of you, hands on your shoulders:

- › turn your body to the right and repeat to the left until you feel a comfortable stretch to the incision.

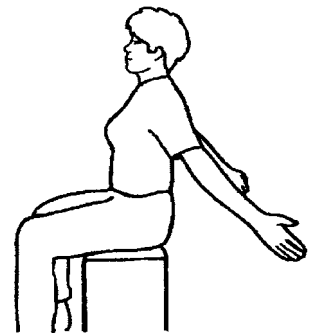


11. Sitting or standing, lean over to one side to reach the floor (as your hand slides down the side of your leg).

- › try not to lean forward or backward.
- › bring your other arm (the one not reaching for the floor) up to the side.

12. Sitting with your back straight, pull your shoulder blades together while turning your thumbs and hands outwards.

- › then, touch your elbows together in front of you.



## NOTES

- If you are concerned about using stairs at home, these can be practiced with help before discharge.
- Continue with exercises 2-3 times every day while your incision is healing.
- Check your posture often in front of a mirror. You may tend to lean towards your operated side and that shoulder may drop down and forward. Watch for this and correct it.
- Progress all your activities gradually. Let pain be your guide! Talk about increasing your activity level with your surgeon at the followup appointment.
- Remember, exercises are needed in the recovery phase but rest is also important!
- Sitting or standing using your arm on the operated side, reach with your hand to touch your opposite shoulder.
  - › once you can do this, try reaching further down your back.

Clinical Pathway – Pneumonectomy				
	Pre-admission	Day of admission/ surgery Pre-op	Day of admission/ surgery Post-op	Post-op day #1
Tests	<ul style="list-style-type: none"> <li>Blood work</li> <li>ECG</li> <li>Chest X-ray</li> </ul>	<ul style="list-style-type: none"> <li>Blood work (if ordered)</li> </ul>	<ul style="list-style-type: none"> <li>Chest X-ray</li> <li>Blood work</li> </ul>	
Consults				<ul style="list-style-type: none"> <li>Physiotherapy</li> </ul>
Treatments		<ul style="list-style-type: none"> <li>Intravenous (IV)</li> <li>Fluid restriction to 1.5L per 24 hours</li> </ul>	<ul style="list-style-type: none"> <li>Wound dressing</li> <li>Urinary catheter</li> <li>Pain catheter</li> <li>Intravenous (IV)</li> <li>Chest tube(s)</li> </ul>	<ul style="list-style-type: none"> <li>Wound dressing</li> <li>Urinary catheter</li> <li>Pain catheter</li> <li>Discontinue IV solution</li> <li>Removal of chest tube(s)</li> <li>Weight</li> </ul>
Medications	<ul style="list-style-type: none"> <li>Medication list/vials</li> </ul>	<ul style="list-style-type: none"> <li>Patient-specific medications</li> <li>Antibiotic</li> </ul>	<ul style="list-style-type: none"> <li>Patient-specific medications</li> <li>Pain medication: PCA or PVC</li> <li>Oxygen</li> <li>Anti-coagulant</li> <li>Bronchodilators</li> </ul>	<ul style="list-style-type: none"> <li>Patient-specific medications</li> <li>Pain medication: PCA or PVC</li> <li>Laxative</li> <li>Anti-coagulant</li> <li>Oxygen</li> <li>Bronchodilators</li> </ul>
Activity	<ul style="list-style-type: none"> <li>Regular activity</li> </ul>	<ul style="list-style-type: none"> <li>Regular activity</li> </ul>	<ul style="list-style-type: none"> <li>Head of bed up</li> <li>Deep breathing &amp; coughing every hour while awake</li> <li>Foot &amp; ankle exercises</li> </ul>	<ul style="list-style-type: none"> <li>Head of bed up</li> <li>Deep breathing &amp; coughing every hour while awake</li> <li>Up in chair for 1 hour, 3 times</li> <li>Goal is to walk 3 times</li> <li>Activity, as tolerated</li> <li>Post-op day #1 exercises as per guide</li> </ul>
Nutrition	<ul style="list-style-type: none"> <li>Normal diet</li> </ul>	<ul style="list-style-type: none"> <li>Nothing by mouth after midnight the night before surgery</li> </ul>	<ul style="list-style-type: none"> <li>Sips of clear fluids after surgery</li> </ul>	<ul style="list-style-type: none"> <li>Full fluid diet, then go back to normal diet</li> </ul>
Patient & Family Teaching/ Discharge Planning	<ul style="list-style-type: none"> <li>Review of Clinical Pathway instructions &amp; patient guide</li> <li>Stop smoking</li> <li>Discuss discharge plans &amp; expected length of stay</li> </ul>	<b>Patient teaching</b> <ul style="list-style-type: none"> <li>Review events of day of surgery</li> </ul>	<b>Patient teaching</b> Reinforce: <ul style="list-style-type: none"> <li>Positioning <ul style="list-style-type: none"> <li>› deep breathing &amp; coughing</li> <li>› foot &amp; ankle exercises</li> <li>› pain control goals</li> </ul> </li> <li>Positioning <ul style="list-style-type: none"> <li>› diet</li> </ul> </li> </ul>	<b>Patient teaching</b> Reinforce: <ul style="list-style-type: none"> <li>Positioning <ul style="list-style-type: none"> <li>› deep breathing &amp; coughing</li> <li>› foot &amp; ankle exercises</li> <li>› pain control goals</li> </ul> </li> <li>Positioning <ul style="list-style-type: none"> <li>› diet</li> <li>› smoking cessation</li> <li>› shoulder range of motion</li> <li>› activity</li> <li>› leg exercises</li> </ul> </li> </ul>

	Post-op day #2	Post-op day #3	Post-op day #4
Tests			
Consults			
Treatments	<ul style="list-style-type: none"> <li>• Removal of wound dressing</li> <li>• Removal of urinary catheter</li> <li>• Chest tube dressing</li> <li>• Pain catheter</li> <li>• Weight</li> </ul>	<ul style="list-style-type: none"> <li>• Removal of pain catheter</li> <li>• Removal of chest tube dressing</li> <li>• Weight</li> </ul>	<ul style="list-style-type: none"> <li>• Enema (if needed)</li> <li>• Removal of IV saline lock</li> </ul>
Medications	<ul style="list-style-type: none"> <li>• Patient-specific medications</li> <li>• Laxative</li> <li>• Pain medication: PVC &amp; switch to pain pills by mouth</li> <li>• Bronchodilators</li> <li>• Oxygen, as needed</li> <li>• Anti-coagulant</li> </ul>	<ul style="list-style-type: none"> <li>• Patient-specific medications</li> <li>• Laxative</li> <li>• Oxygen, as needed</li> <li>• Pain medication by mouth</li> <li>• Bronchodilators</li> </ul>	<ul style="list-style-type: none"> <li>• Patient-specific medications</li> <li>• Laxative</li> <li>• Pain medication by mouth</li> </ul>
Activity	<ul style="list-style-type: none"> <li>• Head of bed up</li> <li>• Deep breathing &amp; coughing every hour while awake</li> <li>• Up in chair for 1 hour, 3 times</li> <li>• Activity, as tolerated</li> <li>• Post-op day #2 exercises as per guide</li> <li>• Walk in hall 3 times with supervision</li> </ul>	<ul style="list-style-type: none"> <li>• Head of bed up</li> <li>• Activity, as tolerated</li> <li>• Post-op day #3 exercises as per guide</li> <li>• Walk in hall independently 3 times</li> </ul>	<ul style="list-style-type: none"> <li>• Head of bed up</li> <li>• Activity, as tolerated</li> <li>• Post-thoracotomy exercises: <ul style="list-style-type: none"> <li>› full program 2-3 times</li> </ul> </li> <li>• Walk in hall independently 3 times</li> </ul>
Nutrition	<ul style="list-style-type: none"> <li>• Normal diet</li> </ul>	<ul style="list-style-type: none"> <li>• Normal diet</li> </ul>	<ul style="list-style-type: none"> <li>• Normal diet</li> </ul>
Patient & Family Teaching/ Discharge Planning	<p><b>Patient teaching</b></p> <ul style="list-style-type: none"> <li>• Reinforce: <ul style="list-style-type: none"> <li>› deep breathing and coughing</li> <li>› exercises as per guide</li> <li>› smoking cessation</li> <li>› shoulder range of motion</li> <li>› leg exercises</li> <li>› activity</li> <li>› pain control goals</li> <li>› diet</li> </ul> </li> </ul>	<p><b>Patient teaching</b></p> <ul style="list-style-type: none"> <li>• Review discharge instructions as per education guide</li> <li>• Pain control goals</li> </ul> <p><b>Discharge planning</b></p> <ul style="list-style-type: none"> <li>• Confirm discharge home tomorrow by 11 a.m.</li> <li>• Review discharge issues/ plan with patient/family</li> </ul>	<p><b>Patient teaching</b></p> <ul style="list-style-type: none"> <li>• Review discharge instructions and post-thoracotomy exercise instructions as per education guide</li> <li>• Take education guide home</li> </ul> <p><b>Discharge planning</b></p> <ul style="list-style-type: none"> <li>• Prescription(s) provided</li> <li>• Followup appointment(s) provided</li> <li>• Discharge home by 11 a.m.</li> </ul>

<b>Clinical Pathway – Lobectomy</b>				
	<b>Pre-admission</b>	<b>Day of admission/ surgery Pre-op</b>	<b>Day of admission/ surgery Post-op</b>	<b>Post-op day #1</b>
Tests	<ul style="list-style-type: none"> <li>• Blood work</li> <li>• ECG</li> <li>• Chest X-ray</li> </ul>	<ul style="list-style-type: none"> <li>• Blood work (if ordered)</li> </ul>	<ul style="list-style-type: none"> <li>• Chest X-ray</li> <li>• Blood work</li> </ul>	
Consults				<ul style="list-style-type: none"> <li>• Physiotherapy</li> </ul>
Treatments		<ul style="list-style-type: none"> <li>• Intravenous (IV)</li> </ul>	<ul style="list-style-type: none"> <li>• Wound dressing</li> <li>• Urinary catheter</li> <li>• Pain catheter</li> <li>• Intravenous (IV)</li> <li>• Chest tube</li> </ul>	<ul style="list-style-type: none"> <li>• Wound dressing</li> <li>• Removal of urinary catheter</li> <li>• Pain catheter remains</li> <li>• Discontinue (IV) solution</li> <li>• Chest tube</li> </ul>
Medications		<ul style="list-style-type: none"> <li>• Patient-specific medications</li> <li>• Antibiotic</li> </ul>	<ul style="list-style-type: none"> <li>• Patient-specific medications</li> <li>• Pain medication: PCA or PVC</li> <li>• Oxygen</li> <li>• Anti-coagulant</li> <li>• Bronchodilators</li> </ul>	<ul style="list-style-type: none"> <li>• Patient-specific medications</li> <li>• Pain medication: PCA or PVC</li> <li>• Laxative</li> <li>• Anti-coagulant</li> <li>• Oxygen</li> <li>• Bronchodilators</li> </ul>
Activity		<ul style="list-style-type: none"> <li>• Regular activity</li> </ul>	<ul style="list-style-type: none"> <li>• Head of bed up</li> <li>• Deep breathing &amp; coughing every hour while awake</li> <li>• Foot &amp; ankle exercises</li> </ul>	<ul style="list-style-type: none"> <li>• Deep breathing &amp; coughing every hour while awake</li> <li>• Dangle legs</li> <li>• Up in chair</li> <li>• Activity, as tolerated</li> <li>• Post-op day #1 exercises as per guide</li> <li>• Walk at least 3 times</li> </ul>
Nutrition		<ul style="list-style-type: none"> <li>• Nothing by mouth after midnight the night before surgery</li> </ul>	<ul style="list-style-type: none"> <li>• Sips of clear fluids after surgery</li> </ul>	<ul style="list-style-type: none"> <li>• Full fluid diet, then go back to normal diet</li> </ul>
Patient & Family Teaching/ Discharge Planning	<ul style="list-style-type: none"> <li>• Review of Clinical Pathway instructions &amp; patient guide: <ul style="list-style-type: none"> <li>› smoking cessation</li> </ul> </li> <li>• Discuss discharge plans/ expected length of stay</li> </ul>	<b>Patient teaching</b> <ul style="list-style-type: none"> <li>• Review events of day of surgery</li> </ul>	<b>Patient teaching</b> <ul style="list-style-type: none"> <li>• Reinforce: <ul style="list-style-type: none"> <li>› deep breathing &amp; coughing</li> <li>› foot &amp; ankle exercises</li> <li>› pain control goals</li> <li>› positioning</li> <li>› diet</li> </ul> </li> </ul>	<b>Patient teaching</b> <ul style="list-style-type: none"> <li>• Patient has education guide</li> <li>• Reinforce: <ul style="list-style-type: none"> <li>› deep breathing &amp; coughing</li> <li>› smoking cessation</li> <li>› shoulder range of motion</li> <li>› activity</li> <li>› pain control goals</li> <li>› foot &amp; ankle exercises</li> <li>› diet</li> <li>› exercises as per guide</li> <li>› positioning</li> <li>› leg exercises</li> </ul> </li> </ul>

	Post-op day #2	Post-op day #3	Post-op day #4
Tests			
Consults			
Treatments	<ul style="list-style-type: none"> <li>Removal of wound dressing</li> <li>Removal of chest tube if output &lt;400ml/24 hrs and no air leak</li> <li>Pain catheter remains</li> </ul>	<ul style="list-style-type: none"> <li>Removal of pain catheter once chest tube removed</li> <li>Removal of chest tube if output &lt;400ml/24 hrs and no air leak</li> </ul>	<ul style="list-style-type: none"> <li>Removal of pain catheter once chest tube removed</li> <li>Removal of chest tube if output &lt;400ml/24 hrs and no air leak</li> </ul>
Medications	<ul style="list-style-type: none"> <li>Patient-specific medications</li> <li>Pain medication – PCA or PVC</li> <li>Switch to pain pills by mouth</li> <li>Oxygen, as needed</li> <li>Anti-coagulant</li> <li>Bronchodilators</li> <li>Laxative</li> </ul>	<ul style="list-style-type: none"> <li>Patient-specific medications</li> <li>Pain medication by mouth</li> <li>Oxygen, as needed</li> <li>Bronchodilators</li> <li>Laxative</li> </ul>	<ul style="list-style-type: none"> <li>Patient-specific medications</li> <li>Laxative</li> <li>Pain medication by mouth</li> </ul>
Activity	<ul style="list-style-type: none"> <li>Up in chair 3 times</li> <li>Activity, as tolerated</li> <li>Post-op day #2 exercises as per guide</li> <li>Walk in hall 3 times with supervision</li> </ul>	<ul style="list-style-type: none"> <li>Activity, as tolerated</li> <li>Post-op day #3 exercises as per guide</li> <li>Walk in hall independently 3-5 times</li> </ul>	<ul style="list-style-type: none"> <li>Activity, as tolerated</li> <li>Post-thoracotomy exercises: <ul style="list-style-type: none"> <li>full program 2-3 times</li> </ul> </li> <li>Walk in hall independently more than 5 times</li> </ul>
Nutrition	<ul style="list-style-type: none"> <li>Normal diet</li> </ul>	<ul style="list-style-type: none"> <li>Normal diet</li> </ul>	<ul style="list-style-type: none"> <li>Normal diet</li> </ul>
Patient & Family Teaching/ Discharge Planning	<p><b>Patient teaching</b></p> <ul style="list-style-type: none"> <li>Reinforce: <ul style="list-style-type: none"> <li>deep breathing &amp; coughing</li> <li>smoking cessation</li> <li>shoulder range of motion</li> <li>activity</li> <li>pain control goals</li> <li>diet</li> <li>exercises as per guide</li> <li>leg exercises</li> </ul> </li> </ul> <p><b>Discharge planning</b></p> <ul style="list-style-type: none"> <li>discuss expected length of stay/discharge plan with patient/family</li> </ul>	<p><b>Patient teaching</b></p> <ul style="list-style-type: none"> <li>Review discharge instructions as per education guide</li> <li>Pain control goals</li> </ul> <p><b>Discharge planning</b></p> <ul style="list-style-type: none"> <li>Review discharge issues/ plan with patient/family</li> <li>Confirm discharge home tomorrow by 11 a.m.</li> </ul>	<p><b>Patient teaching</b></p> <ul style="list-style-type: none"> <li>Review discharge instructions and post-thoracotomy exercise instructions as per education guide</li> <li>Pain control goals</li> </ul> <p><b>Discharge planning</b></p> <ul style="list-style-type: none"> <li>Prescription(s) provided</li> <li>Followup appointment(s) provided</li> <li>Received teaching pamphlets</li> <li>Discharge home by 11 a.m.</li> </ul>

## Going Home

### Discharge planning

When you are discharged from the hospital, you may need general help at home. It is best to make plans before being admitted to the hospital. Talk about your discharge plans with your nurse.

You may have concerns about how you will manage once you return home. These might include such issues as:

- I live alone. How will I manage?
- I'm worried and scared. Who can I talk to?
- I have young children and I'm told I can't lift anything. What do I do?
- My spouse is ill. Who will take care of them while I'm in the hospital?

If you have any concerns, ask to see a social worker as part of your discharge plan.

Arrange for someone to pick you up at 11 a.m. on the day of discharge. You will receive a prescription for medication. You will be given a followup appointment to see your thoracic surgeon in about 3-5 weeks. You will receive notification of your followup appointment date and time by mail or phone.

### Be sure you understand about:

- |                     |                              |                           |
|---------------------|------------------------------|---------------------------|
| › activity          | › medications                | › when to call the doctor |
| › followup visit(s) | › post-thoracotomy exercises | › wound care              |

### Followup

You will be contacted by phone or mail with an appointment to see your thoracic surgeon in 3-5 weeks at the Thoracic Surgery Clinic. You may need to have a chest X-ray before your appointment with the surgeon. Please go to the X-ray Department 15 minutes before your appointment, and bring the requisition for the X-ray with you. During this visit, your thoracic surgeon will listen to your lungs, check your incision, and review your chest X-ray. Discuss any specific concerns you have at this time with your thoracic surgeon. If you are unable to keep your appointment, please call the Clinic to let us know.

Followup care is a key part of your treatment and safety. Be sure to make and go to all appointments, and call your doctor if you are having problems. It's also a good idea to know your test results and keep a list of the medicines you take.

## **At Home**

### **Activity**

- Continue the shoulder and arm exercises, deep breathing exercises, and walking as discussed with your physiotherapist.
- Avoid hard exercise including lifting heavy objects such as grocery bags, snow shovelling, and pushing a lawn mower until after you have seen your doctor for your followup appointment.
- Do not lift anything over 5-10 pounds for 4 weeks.
- Return to your regular activities bit by bit over 6 weeks. Talk about any specific concerns with your doctor.
- Do not drive until after you have stopped taking opioid (pain) medication for at least 24 hours or you have seen your doctor for your followup appointment.
- Rest often as needed. Let your body be your guide.
- If you need to fly within 6-8 weeks after your surgery, please talk to your health care team.

### **Wound care**

- You may shower 3 days after your chest tube is removed. You may take a bath 1 week (7 days) after your chest tube is removed. Avoid hot tubs, jacuzzis, and saunas for 6 weeks. Soaking in a tub for long periods may slow healing of your incision. Clean your incision with mild soapy water. Pat the incision area dry. Do not rub the incision.
- Swelling or bruising may appear around the wound. This is normal and may continue for several weeks.
- Watch the incision for increased redness, tenderness, drainage, and open areas. Tell your doctor if any of these happen.
- There may be a stitch at the chest tube site. This will be removed by your family doctor in 7-10 days.
- Wear loose clothing while the wound is still tender.

### **Medication**

- Take pain medication as needed, for example, before going to bed and before activity. You should expect some pain for a length of time after discharge, but it should be manageable.
- Add fibre to your diet to avoid constipation (not being able to poop) from the pain medication, for example, bran, whole grains, and fruit. A laxative or stool softener may be needed until your bowels are regular.

### **When to call for help**

Call 911 any time you think you may need emergency care. For example, call if:

- › you passed out (fainted or lost consciousness).
- › you have severe (very bad) trouble breathing.
- › you have sudden chest pain and shortness of breath, or you cough up bright red blood.

### **Call your doctor or 811, or go to the nearest Emergency Department if:**

- You are not able to keep fluids down.
- You have a fever over 38°C/100.4°F.
- You have loose stitches, or your incision opens up.
- Bright red blood has soaked through the bandage over your incision.
- You have signs of infection, such as:
  - › increased pain, swelling, warmth, or redness at the incision site
  - › red streaks leading from the incision
  - › pus draining from the incision
  - › swollen lymph nodes in your neck, armpits, or groins
  - › a fever
- You cough up a lot more mucus than normal, or your mucus changes colour.

Watch closely for changes in your health, and be sure to contact your doctor if you have any problems.

For 24/7 advice from a Registered Nurse and general health information, call 811.



**We hope this guide has helped support you. The information comes from health care team members and patients like yourself. Your suggestions are important.**

## **Resources**

The diagnosis and treatment of lung cancer may have a major impact on you and the people close to you. The disease may affect your physical, emotional, social, spiritual, and practical needs. As a result, you may experience many issues. There are many resources available within the hospital, the community, and on the internet to help you and your family.

## **Publications**

- Living with Lung Cancer: A Guide For Patients and their Families, 4th Edition. Available from Trial Publishing Co., P.O. Box 13355 Gainesville, Florida 32604
- What You Really Need to Know About Cancer: A Comprehensive Guide for Patients and Their Families. R. Buckman, Key Porter, 1995.
- Everybody's Guide to Cancer Therapy: How Cancer is Diagnosed, Treated, and Managed Day to Day. M. Dollinger, E.H. Rosenbaum, G. Cable. Sommerville House, 1995.
- Coping With Cancer Magazine
  - › Phone: 615-790-2400
  - › E-mail: [info@copingmag.com](mailto:info@copingmag.com)
  - › <http://copingmag.com/cwc>

## **Organizations**

- Canadian Cancer Society:
  - › Phone: 1-888-939-3333

**What are your questions?**

**Please ask. We are here to help you.**

## **Online Cancer Resources**

- Nova Scotia Health Authority’s Cancer Care Program:  
<https://library.nshealth.ca/Cancer>
- Nova Scotia Health Authority’s Cancer Care Program – Support Group Info:  
<https://library.nshealth.ca/Cancer/Support>
- Canadian Cancer Society: [www.cancer.ca](http://www.cancer.ca)
- Cancer Care Ontario: [www.cancercare.on.ca](http://www.cancercare.on.ca)
- U.S. National Cancer Institute: [www.cancer.gov](http://www.cancer.gov)
- Health Canada: [www.hc-sc.gc.ca/en/health-canada.html](http://www.hc-sc.gc.ca/en/health-canada.html)
- CancerCare®: [www.cancercare.org](http://www.cancercare.org)
- OncoLink® (Abramson Cancer Center of the University of Pennsylvania):  
[www.oncolink.org](http://www.oncolink.org)
- Lung Cancer Canada: [www.lungcancercanada.ca](http://www.lungcancercanada.ca)

## **Questions for my health care team:**

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**Looking for more health information?**

Find this pamphlet and all our patient resources here: <http://library.nshealth.ca/PatientGuides>

Contact your local public library for books, videos, magazines, and other resources.

For more information, go to <http://library.novascotia.ca>

Connect with a registered nurse in Nova Scotia any time: call 811 or visit <https://811.novascotia.ca>

Learn about other programs and services in your community: call 211 or visit <http://ns.211.ca>

*Nova Scotia Health Authority promotes a smoke-free, vape-free, and scent-free environment.*

*Please do not use perfumed products. Thank you!*

[www.nshealth.ca](http://www.nshealth.ca)

*Prepared by: Thoracic Clinic Health Care Staff*

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The information in this pamphlet is to be updated every 3 years or as needed.