

Better, Faster Recovery from Thoracic Surgery

With the Enhanced Recovery after Surgery (ERAS) Program



STRONG
MEMORIAL HOSPITAL

What is Enhanced Recovery After Surgery (ERAS)?

Enhanced Recovery After Surgery (ERAS) is a program based on scientific evidence that encourages a healthy recovery after surgery. Our goal is to improve your surgical experience and help you get back to normal as soon as possible.

We do this by working together to manage your care before and after surgery. **You** are a very important part of the team.

This booklet will:

- Help you prepare for your surgery.
- Explain how you play an active part in your recovery.
- Give you daily goals to achieve.

Research shows that you will recover faster if you do the things explained in this booklet. There are instructions about eating and drinking, physical activity, and controlling your pain. These tips will help you to feel better faster and safely go home sooner.

Please bring this booklet with you on the day of surgery. Use it as a guide during your hospital stay. We may refer to it as you recover and review it with you when you are ready to go home.

Having surgery can be stressful for you and your support network. The good news is that you are not alone. We will support you each step of the way. Please ask us if you have questions about your care. We want to be sure to answer all your questions!

Use this space to write down your questions as you go through the booklet. There is additional space at the end as well.

Questions for my surgical care team:

Your Surgical Care Team

You will see many different people from your team during your hospital stay. We work together to check your condition and plan the best steps towards a healthy recovery.

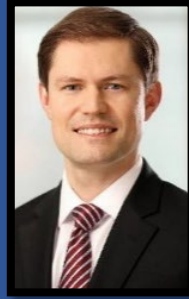
Surgeons:



Dr. Carolyn Jones
Attending Surgeon



Dr. Paul Feingold
Attending Surgeon



Dr. Michal Lada
Attending Surgeon

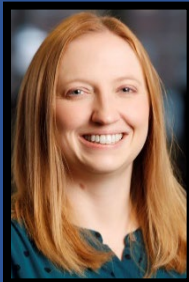


Dr. Christian Peyre
Attending Surgeon



Dr. Ryan Campagna
Attending Surgeon

Advance Practice Providers:



Wendy Hurley
*Physician Assistant
(PA)*



Kara Mestnik
*Nurse Practitioner
(NP)*



Alicia Frelier
*Nurse Practitioner
(NP)*



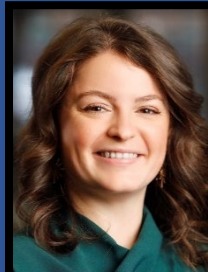
Stephanie Monnat
*Nurse Practitioner
(NP)*



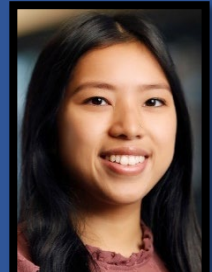
Olga Feeney
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Taylor McCabe
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Sarah Espiritu
*Nurse Practitioner
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Navigators:



Tammy Carmel
*Nurse Practitioner
(NP)*



Melissa Sayles
*Registered Nurse (RN)
Nurse Navigator*



Wendy Linville
Patient Navigator

Other team members include:



Anesthesiologists, Residents, Fellows, Registered Nurses (RNs), Patient Care Technicians (PCTs), Respiratory Therapists, Physical Therapists, and Environmental Services (the people who help us keep our spaces clean)

**Contact
us**

URMC Thoracic & Foregut Surgery at AC2
601 Elmwood Avenue
Rochester, NY 14642
Phone: (585) 275-1509
Fax: (585) 276-2356

Getting Ready for Surgery

Surgery date: _____

With some preparation, you can prevent many problems during and after your surgery. Try to be as strong and healthy as possible before surgery.

Stay healthy:

- ✓ Quit smoking.
- ✓ Exercise regularly. Staying physically active can help you recover after your surgery. We suggest you do at least one of the following every day to keep your stamina up:
 - 20 minutes of exercise
 - Walk 1 mile (brisk pace)
 - Take 7,500 steps a day
- ✓ Avoid alcohol. Drinking more than 2 alcoholic beverages a day (or more than 14 drinks a week) is considered high alcohol consumption. Alcohol use can weaken your immune system, weaken your heart, increase your stress response, and slow your healing. You can help decrease the chance of having complications from your surgery by not drinking alcohol for 4 weeks before your surgery. If you drink more than 2 drinks a day (or more than 14 drinks a week), we suggest you slowly reduce how many alcoholic beverages you are drinking and stop completely 4 weeks before your surgery.
- ✓ Eat a variety of healthy foods. Your body burns a lot of energy during and after surgery. Fuel up by increasing your calories from nutrient-packed foods.

Have a plan:

- ✓ Discuss your surgery with family, friends, and your support network
- ✓ Ask someone to help you when you get home. It might be easier to have more than one person help. You may need help with bathing, shopping, cooking, housework, and pet care.
- ✓ Coordinate transportation home from the hospital and to your follow-up appointments
- ✓ Read your pre-admission instructions. They will tell you what to bring to the hospital, what to leave at home, and how to prepare for your upcoming surgery.
- ✓ Review your pre-admission and medication instructions.

Stock up on the medicines, foods, and drinks you'll need before and after your surgery, including:



- If instructed, a bottle of MiraLAX® (8.3 oz.) powder.
- If instructed, liquid nutritional supplements. You will need at least 15 servings. *See list below.*
- Acetaminophen (Tylenol®)
- Milk of Magnesia

COMMONLY AVAILABLE NUTRITIONAL SUPPLEMENTS:

Supplement Name	Serving Size	Protein (grams)	Calories	For Diabetes?
BOOST PLUS®	8 oz.	14	360	
Boost Glucose Control®	8 oz.	16	190	Yes
Boost Breeze®	8 oz.	9	250	
Carnation Instant Ready to Drink®	8 oz.	10	240	*
Carnation Instant Breakfast Powder®	1 packet	5	130	*
Carnation Instant Breakfast Powder Light Start - No Sugar Added®	8 oz.	5	150	Yes
Ensure Plus®	8 oz.	13	350	
Ensure Enlive®	8 oz.	20	350	
Ensure Original®	8 oz.	9	220	
Ensure Clear®	10 oz.	8	180	
Ensure High Protein®	8 oz.	16	160	
Glucerna Shake®	8 oz.	10	180	Yes
Impact Advanced Recovery®	6 oz.	18	200	
Kellogg's Special K Protein Shake®	10 oz.	15	190	
Premier Protein®	11.5 oz.	30	160	
Premier Protein Clear®	16.9 oz.	20	90	Yes

*Available in "No Sugar Added" for people with diabetes

7 Days Before Surgery

Date: _____



- Stop taking vitamins and herbal supplements of any kind, unless your doctor tells you something different.
- Discuss aspirin use and anticoagulants (medicine that stops the blood from clotting) with your doctor. You may need to stop taking them for a while. Or your doctor may want you to take a different kind of anticoagulant until after surgery.

5 Days Before Surgery

Date: _____



If we told you to do a bowel regimen...

- Start your bowel regimen by drinking 17 grams of MiraLAX® in 8 oz. of fluid (like water, coffee, or juice). Do this one time per day. If you have not had a bowel movement by the afternoon of the second day of the regimen, increase to 17 grams two times per day. If you start to experience more than 2-3 bowel movements, reduce back to once daily. If you are having loose stools, you may stop or skip a few doses.
- MiraLAX® is a laxative. Laxatives are used to treat and prevent constipation. You are constipated if you find it hard to have a bowel movement (BM, poop) or you rarely have a BM (less than 2-3 times per week).
- Be sure to increase the amount of fluids you drink while taking MiraLAX®.
- Why is it important to do this? Being sure your bowels are empty before surgery lessens chances of complications while you are in the hospital.

If we told you to drink nutritional supplements...

- Start drinking 3 bottles of nutritional supplements each day



Liquid nutrition supplements are high in protein and contain vitamins and minerals. They are usually available in a variety of flavors. You can find these at Walmart, Target, drug stores, and supermarkets.

Examples include Ensure[®], Impact Advanced Recovery[®], or Boost[®]. Many stores also have generic brands, which have the same basic ingredients.

See page 6 for a list of commonly available brands and serving sizes.

3 Days Before Surgery

Date: _____



If we told you to take Flomax...

- Start 3 nights before surgery.

Flomax helps reduce the symptoms of an enlarged prostate gland by relaxing the muscles in the bladder and prostate so you can pee easily after surgery.

1 Day Before Surgery

Date: _____

- Call the surgical center to find out what time you should arrive and when your surgery will begin

Strong Surgical Center

Call (585) 275-8256 between 2:30 p.m. and 7:00 p.m.

Please note: If your surgery is scheduled for a Monday, please call on the previous Friday



I should arrive to the surgical center at: _____

My surgery will begin at: _____



- If you are doing a bowel regimen, drink your last dose of MiraLAX before midnight



- For breakfast, lunch, and dinner eat healthy, normal meals.
- No solid foods after midnight.**



- Continue drinking your nutritional supplements as directed by your provider.



- No smoking after midnight.




- Before going to sleep, shower or bathe with soap and water.
- Use a clean washcloth and a clean towel.
- Put on clean bedtime clothing, and sleep on clean sheets.


On the Day of Surgery

Date: _____



- Do not eat any solid foods.**
- It is OK to have clear liquids up to 4 hours before you get to the hospital. See *chart below for guidance.*

YES	
Gatorade® or other sports drinks	
Apple, lemonade, or other fruit juice without pulp	
Clear nutritional supplements, like Ensure Clear®	
Tea or coffee (hot or cold) <u>without</u> added milk, milk products, creamers	
Soda	
Clear broth or bouillon	
Clear popsicles, Italian ice, or sorbets	
Clear Jell-O	
Water or flavored waters	

NO	
Alcohol...of any kind	
Tomato, orange, or grapefruit juice	
Oatmeal or other cooked cereals	
Tea or coffee with added milk, milk products, creamers	
Milk, milkshakes, yogurt, sherbet, or smoothies	
Soups with meat, noodles, rice, beans, or vegetables	
Frozen treats containing milk, pieces of fruit, or other solid chunks	
Jell-O with fruit or pieces of fruit	
Any solid food, like meats, fats, bread, rice, or vegetables	



- If you have diabetes, please **do not** take the following medications on the day of your surgery:
 1. Short-acting or Regular Insulin – *you will not be eating*
- Other medications you should **NOT** take on the morning of surgery:
 1. _____
 2. _____
 3. _____
 4. _____

- Take only the medicines we told you to take, at the usual time, before leaving for the hospital. You may take **TYLENOL®** (acetaminophen), if needed.

Take medicines with very little water, less than 1 oz. (2 tablespoons)



- Medications to take:

1. _____
2. _____
3. _____
4. _____



- No smoking.



- Shower or bathe with soap and water.
- Put on clean clothes.

Before coming to the hospital, remove all makeup, (including mascara), jewelry (including wedding band, watch and any metal piercings), hair accessories and nail polish from toes and fingers. Do not bring any valuables (money, wallet, purse, jewelry, or contact lenses).



Remember to bring:

- Photo ID
- Completed Health Care Proxy (if not already on file)
- Comfortable clothes to wear home
- Chewing gum
- If you sleep with a CPAP machine at home, bring it with you

After Surgery



- Be active. We will help you get out of bed just hours after your surgery. We expect you to walk several times per day and be out of bed in a chair for all meals.

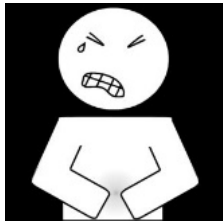
This is the most important thing you can do to help with a quick recovery. This will help speed up the return of bowel function, improve circulation, and prevent infection and blood clots.



- You can drink clear liquids as soon as you are awake, as directed by your team. Drink what you can without getting sick. Let your nurse know if you are feeling sick to your stomach.



- On the day after your surgery, you can start eating regular foods. Eat small amounts and chew very well. Drink liquids between meals so you will not require IV fluids.



- You just had major surgery and can expect some pain.
- We will carefully monitor your pain and work with you to control it. We will give you two or more pain medicines. Each medicine does different things – and they work together – to help with controlling your pain.
- As soon as possible, we will switch you from IV (intravenous) pain medicines to medicines you can take by mouth.
- Please speak up if your plan needs to be adjusted. If your pain level is too high, that will slow your progress. Without proper pain control, you will not be able to cough and deep breathe effectively. This can lead to complications like pneumonia, for example.



- You will receive an injection (shot) of Lovenox®
Lovenox® is a medicine that helps prevent blood clots. We give this medicine to you as a shot, usually in the evenings.



- Although you may be “regular” before surgery, many people have constipation (trouble pooping) after surgery. This is related to anesthesia and the use of opioid pain medicine.
- We will probably recommend that you take some medicines to keep you from being constipated.
- It is important to stay well hydrated. Drinking plenty of water or other fluids, helps avoid constipation.



- Every day, we will check your vital signs – blood pressure, heart rate, blood oxygen level, temperature, and respirations. For the first day or more, this will be done every 1 to 4 hours.



- You will have daily goals. These include targets for activity, eating, and drinking. You may have meetings with specialists to help you with healthy eating, home care, managing your pain, and getting stronger through exercise (physical therapy).
- You will work with a respiratory therapist (a specialist in breathing) throughout your stay. The therapist will help you with:
 - ✓ Coughing and breathing deeply to prevent pneumonia
 - ✓ Learning how to use a “cough” pillow
 - ✓ Using an Incentive Spirometer (to exercise your lungs)
 - ✓ Using a Flutter Valve (to clear mucus)
- You will take the pillow, the spirometer, and the flutter valve home.
- At home, you will continue working on building up your lungs.



- Some people need extra (supplemental) oxygen after lung surgery. This makes breathing easier and helps you stay more active. The oxygen flows through a nasal cannula (CAN-you-lah), which consists of a tube that runs into both nostrils.
- If you need supplemental oxygen, we will take care of setting it up so you will have it at home. It is short-term for most people, while their lung is healing from surgery.

Going Home

How long you stay in the hospital will depend on the type of surgery you have. You can go home when you are medically ready and it is you. This could be as soon as the day after surgery or it could be up to 5 days after surgery. We will talk with you about going home (discharge) every day.

Generally, it will be safe for you to go home when:

- ✓ Your pain is controlled with pills.
- ✓ You are eating without feeling sick.

I want to go home as soon as possible!

We get it. Here is what you can do to help make that happen:

- ✓ Do your leg and breathing exercises as directed. Use the examples in this booklet.
- ✓ Stay active. If the pain is unbearable...stop and ask to discuss your pain regimen.
- ✓ Remember to be up and walking at least four times each day. We encourage you to walk some stairs, too. Ask the nurses to help if necessary.
- ✓ Eat small, frequent meals throughout the day.
- ✓ Remember to drink plenty of fluids.

Before you leave the hospital, your care team will review your discharge instructions with you. We will cover things like:

- ✓ Signs and symptoms of infection and when to call your doctor.
- ✓ Home activity and how much weight you can safely lift (no more than 10 pounds, which is about the same as a gallon of milk).
- ✓ Showering and wound care, including care of your stitches and your chest tube (if you go home with it).
- ✓ Medicine changes.
- ✓ Managing pain.
- ✓ Follow-up appointments.

Your doctor will let you know when it is safe for you to start driving again.

You may need extra help from family and friends for the first few days.

Please make plans for extra help at home.



What else can I expect after surgery?

For 4-6 weeks, you may have a cough with or without bloody sputum (a type of thick mucus produced by the lungs).

You may have a clear, light pink, or watery yellow drainage from the place where the tube went into your chest. If you do, put a dry bandage over it. Change the bandage as needed, until the drainage stops. Keep your skin as dry as possible.

Nerve pain is normal with lung surgery. We give you special medicine – before and after surgery – to help lessen nerve pain.

People describe this nerve pain as band-like, starting at the back and traveling along the rib cage to the front, below the nipples. It will eventually go away, but may take some time.

How do I prevent infection?

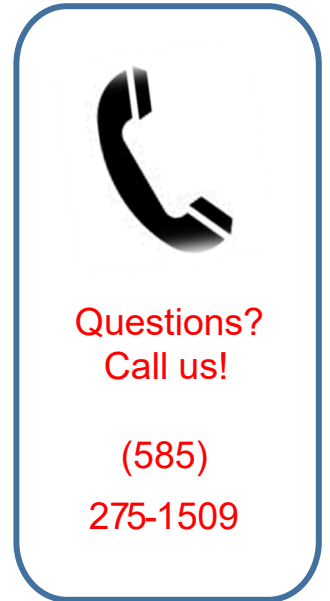
Surgical site infections may occur in the part of your body where surgery took place. Infections happen in about 1-3 out of every 100 patients who have surgery.

Things my surgical team does to prevent infection

- ✓ We may remove some of your hair immediately before surgery using electric clippers if the hair is in the area where the incision will occur.
- ✓ We will give you antibiotics before your surgery starts.

Things I do – before and after surgery – to prevent infection

- ✓ Good hand washing is the best way to prevent infection.
- ✓ Tell your doctor about other medical problems you may have. Problems such as allergies, diabetes, and obesity could affect your surgery and your treatment.
- ✓ Quit smoking. Patients who smoke get more infections. Talk to your doctor about how you can quit. We can help!
- ✓ Do not shave near the surgery site. This can irritate your skin and make it easier to get an infection.
- ✓ Make sure that everyone on your healthcare team cleans their hands before examining you; either with soap and water or an alcohol-based hand rub.



It is OK to remind us about clean hands or glove use during your hospital stay.

- ✓ Family and friends who visit should not touch your surgical wound or bandages.
- ✓ Family and friends should wash their hands before and after visiting you.

How do I take care of the incision sites?

- ✓ You will have small incisions (cuts) under your shoulder blade and near your armpit. Under the skin, we close the incisions with dissolvable sutures (stitches). We also use a special adhesive (glue) on top of the skin. Do not pick at the skin glue!
- ✓ Over the next few weeks, the skin glue will flake off. This is normal.
- ✓ When we remove your chest tube, we may close it up with sutures. You can remove the bandage 2 days after we remove the chest tube. After that, it is OK to take a shower.
 - Clean the site with normal soap and water.
 - Do not apply any lotions, creams, or powders.
 - It is normal to see a clear, light pink, or watery yellow drainage.
 - Call us if you have a bad-smelling, thick yellow drainage. This is not normal. This is a sign of possible infection.

What are some signs of infection?

- ✓ Fever higher than 101° F.
- ✓ Tender, red skin around the incision(s).
- ✓ Thick or bad-smelling drainage from around the surgical site.
- ✓ Vomiting (throwing up) for more than 8 hours.
- ✓ Having a lot of pain or pain that is getting worse.
- ✓ Changing the bandage multiple times every day.

How do I prevent blood clots?

When a blood clot forms in a deep vein, usually in the leg, it is called a deep vein thrombosis or DVT, for short. When the clot breaks off and travels from the leg up to the lungs, it has called a pulmonary embolism (PE). DVT and PE are serious, life-threatening conditions.

Surgery, being less active, being overweight and smoking increase your chances of developing blood clots. To prevent blood clots:

- ✓ While you are in the hospital, wear IPC (intermittent pneumatic compression) devices or knee-high sleeves on your legs. (You will not need these when you go home.) IPCs inflate and deflate regularly to help circulate blood.

- ✓ The devices use cuffs around the legs that fill with air and squeeze your legs, much like a blood pressure cuff. Then the cuff deflates and relaxes. The process then repeats over and over. This increases blood flow through the veins of your legs and helps prevent blood clots.
- ✓ Continue to do ankle and foot exercises regularly.
- ✓ You might need a daily shot of a medicine called Lovenox to prevent blood clots. We will give this to you in the hospital. If you need this medicine after you go home, we will teach you how to give yourself the shot.

Foot and Ankle Exercises

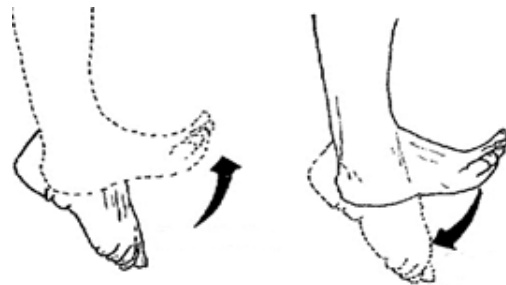
Help prevent blood clots by exercising your feet and ankles to your calf muscles moving

Exercise tips for success:

- Sit up straight – no slouching
- Start by repeating each exercise 2 to 3 times. Work up to doing each exercise 10 times.
- Try to do the exercises several times each day
- Do all exercises slowly

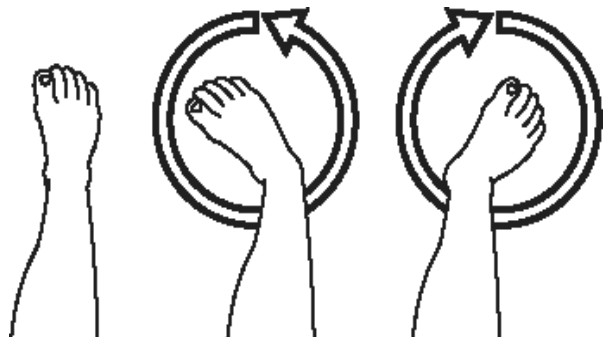
Ankle Pumps

Move each foot up and down like you are pressing down and lifting up on a car's gas pedal



Ankle Circles

1. Draw a circle in the air with each foot
2. Move only your ankle, not your whole leg
3. Draw another circle in the opposite direction



Ankle Alphabet

1. Write the alphabet in the air with each foot
2. Move only your ankle, not your whole leg
3. Complete the alphabet, taking short rests if needed



How do I prevent lung infections or other complications?

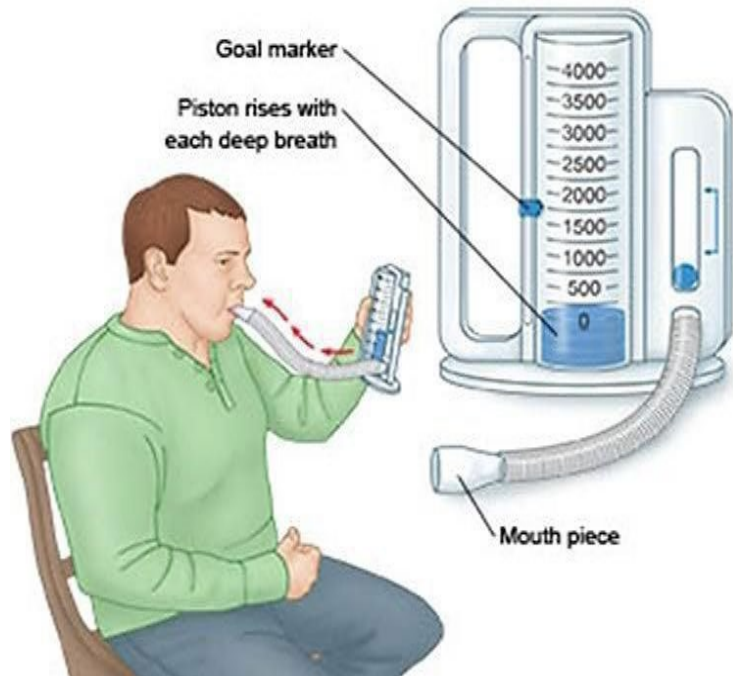
Lung infections can occur for several reasons: you had lung problems to begin with, you just had surgery, or you are less active than usual. To prevent lung infections:

- ✓ Use your incentive spirometer and flutter valve every hour while you are awake.
- ✓ Practice deep breathing and coughing, if possible. While coughing, support your incision for comfort. Place your hands flat on top of each other and apply slight pressure to the surgical site or you can firmly hold a pillow across the surgical site to help you breathe deeply and cough. Ask for pain medicine, if necessary.

How to use an incentive spirometer

An incentive spirometer (spi-RAH-meh-ter) is a tool that helps you do breathing exercises. It measures how deep you inhale (breathe in).

- ✓ Sit up as straight as you can. You may sit in a chair or in your bed.
- ✓ Hold the spirometer in an upright position.
- ✓ The Respiratory Therapist will place the goal marker on the level you need. This is your goal - to make the piston (indicator) rise to that level.

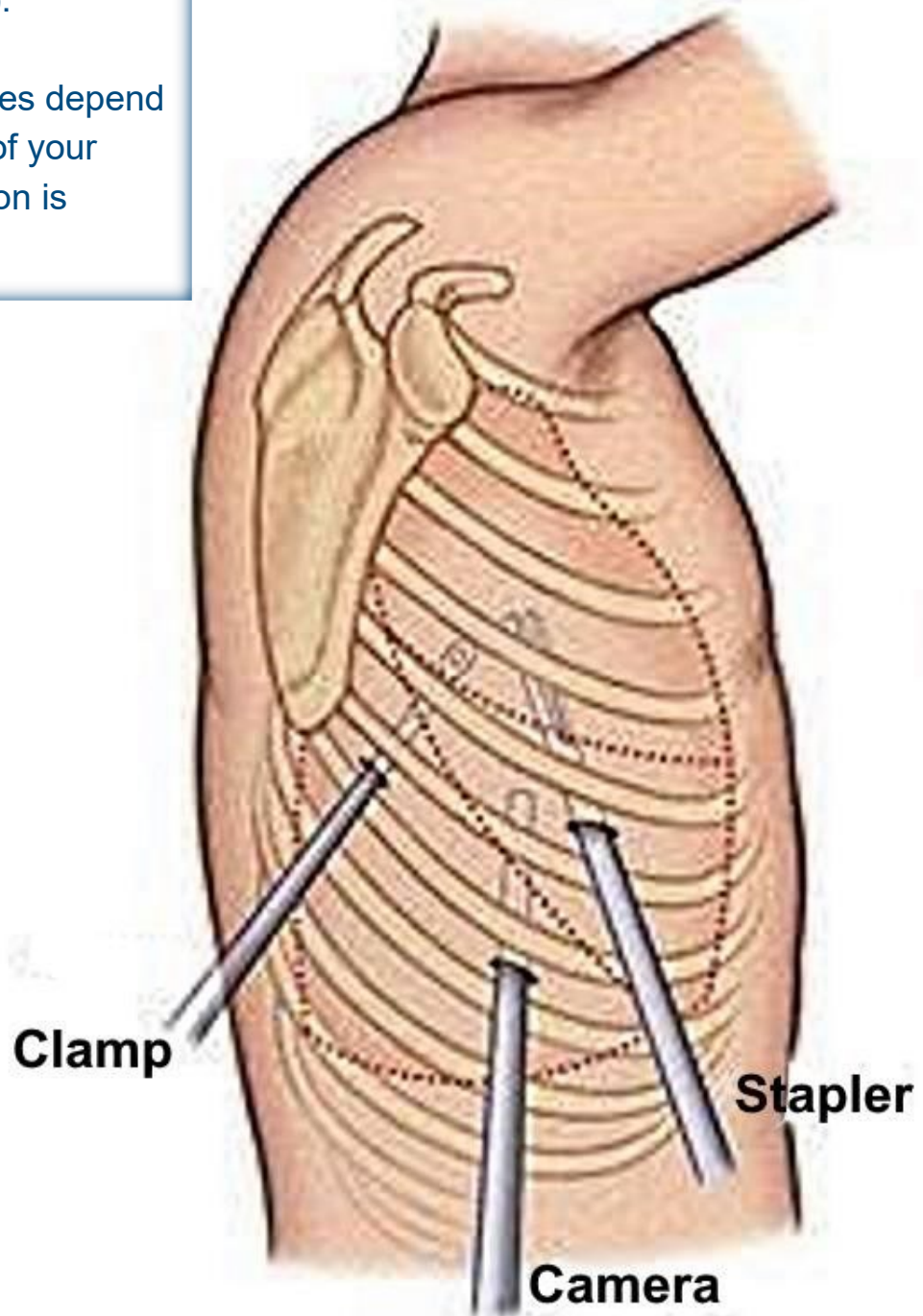


- ✓ Breathe out normally. Place the mouthpiece into your mouth and tightly seal your lips around it.
- ✓ Breathe in slowly and deeply through your mouth. Breathe in as deeply as you can. This will make the indicator rise. Try to raise the indicator as high as you can to reach your goal. If you are having trouble getting the indicator to rise up, make sure your lips are sealed fully around the mouthpiece. Try thinking about sucking up the last bit of milkshake with a straw when breathing in.
- ✓ When you cannot breathe in any longer, hold your breath for 2 to 5 seconds.
- ✓ Remove the mouthpiece from your mouth. Then, breathe out slowly.
- ✓ Rest and breathe normally. The indicator will return to the bottom.
- ✓ Repeat this exercise 10 times per hour.

When you are done, try to cough a few times. This will help remove fluid from your lungs and keep your lungs clear

This is a picture shows places on your body where your surgeon (the doctor doing your surgery) will make incisions (cuts).

The exact places depend on which part of your lung the surgeon is removing.



You will wake up with a tube in your chest from surgery...a “chest tube.”

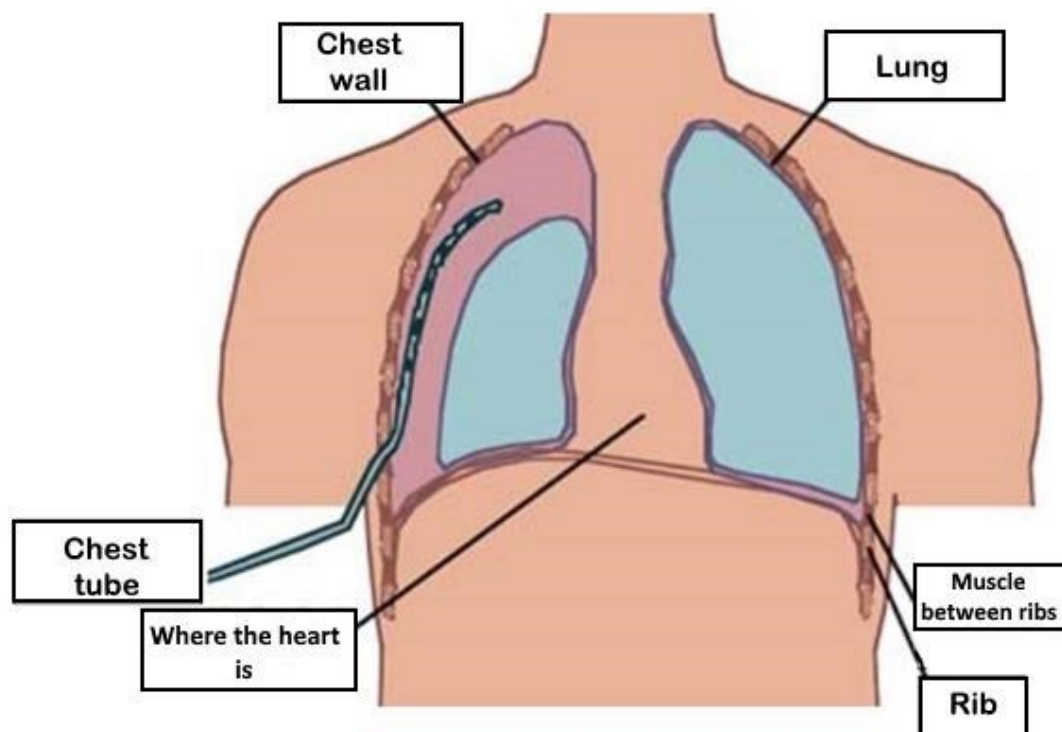
A **chest tube** is a hollow, flexible tube. It is used to remove blood, air, or fluid from around the lungs.

Chest tubes are necessary after most chest operations. The tube is attached to a collection chamber. The chamber collects the fluid that drains from the space between your chest wall and lung. We measure the amount of fluid that collects in the chamber.

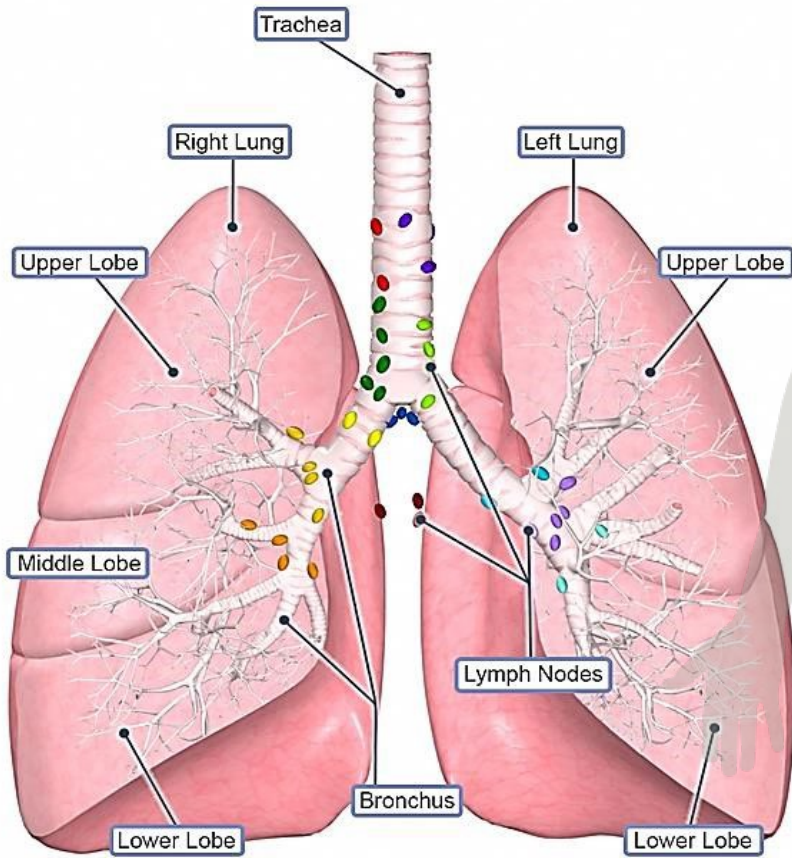
We will remove the tube as soon as possible. Maybe as early as the morning after surgery, but it depends on the surgery you had.

You will be able to walk with this tube. We will help you. It is very important the tube does not become kinked.

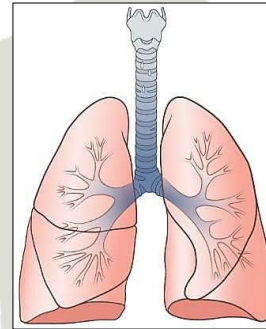
We remove the tube when the drainage is low and your lung is healed.



This picture shows the basic parts (anatomy) of your lungs.



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Information & Resources

It is very important to stop smoking. Here are some places that can help you:

**University of Rochester Medical Center
Center for Community Health & Prevention**

<https://www.urmc.rochester.edu/community-health/patient-care/stopsmoking.aspx>

New York State Smokers' Quit line

<https://www.nysmokefree.com/>

Some smokers are more likely to quit with the structure of a group support, but others may prefer to get one-on-one help via the telephone. If this sounds like you, try the New York State Smokers' Quit line. It offers:

- ✓ A free starter kit of nicotine patches, gum or lozenges for eligible NYS smokers
- ✓ Trained Quit line Specialists offering help with quit plans
- ✓ Information about local stop smoking programs
- ✓ Informational taped messages

Call the NYS Smokers' Quit line at 1-866-NY-QUITS (1-866-697-8487).

American Heart Association

www.heart.org/quitsmoking

URMC Healthy Living Center

46 Prince Street Suite 3001

Rochester, New York 14607

(585) 530-2050

Individual counseling is provided; a treatment plan typically includes four to six appointments, the first of which is in-person but the remaining can be done by phone. The Healthy Living Center is located at 46 Prince St. with plenty of free parking. Call (585) 530-2050 for information.

