

A Guide to Thoracic Surgery for Patients and Families

Section of Thoracic Surgery
Department of Surgery



Welcome to Michigan Medicine

Your surgery is scheduled for:

Your surgeon has given you a date and time for your operation. We make every effort to keep your surgery on the original date, however it may be postponed or rescheduled if unexpected delays happen. If this occurs, everything possible will be done to reschedule you to the earliest available date. We apologize for any inconvenience this may cause.

Understanding Your Thoracic Surgery

This teaching book has been designed to prepare you for thoracic surgery. It provides you and your family with useful information about your surgical journey, as well as care before and after surgery. Take your time reading each section of the book before your surgery. **Bring this book to the hospital for your surgery.**

This book has been divided into chapters that walk you through what type of surgery will have and then through the process of your surgery and recovery. There are descriptions for each specific procedure starting on [\(page 8\)](#). Use the table of contents to find the page number describing your surgery.

Having someone guide you from first evaluation to recovery makes it easier to understand the process of thoracic surgery and eases your stress knowing there is a friendly, familiar face you can count on. That person is your Clinical Care Coordinator (CCC). This nurse helps you navigate the system, get scheduled for tests, provides education about the process and makes sure you get to all the right places at the right time. Your Coordinator will also be your contact once you are discharged and will call you at home during recovery.

Your Clinical Care Coordinator is:

You can reach your Clinical Care Coordinator by calling the Thoracic Surgery Clinic at **(734) 936-8857**.

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Phone numbers at Michigan Medicine

Billing	(855) 855-0863
	(734) 615-0863
Call Center.....	(734) 936-8857
CVC Welcome Desk.....	(734) 232-4547
Emergency Department.....	(734) 936-6666
Guest Assistance Program (GAP) (accommodations).....	(800) 888-9825
Hospital Operator.....	(734) 936-4000
Lost & Found	(734) 936-7890
Med-Inn (hotel)	(800) 544-8684
Office of Patient Relations and Clinical Risk	(877) 285-7788
Parking & Transportation.....	(734) 764-7474
Preoperative check-in.....	(866) 983-9090
Registration & Insurance Verification.....	(866) 452-9896
Thoracic Surgery Clinic	(734) 936-8857
Tobacco Consultation Services.....	(734) 938-6222
Units (Patient Care):	
• CVC-2A Cardiac Procedure Unit	(734) 936-5589
• CVC-4 Cardiovascular ICU.....	(734) 936-6514
• UH-4C Cardiothoracic Surgery.....	(734) 936-6501
• UH-5D Surgery ICU	(734) 936-6581
Other	
Michigan Quitline (Smoking).....	(800) 784-8669
National Suicide Prevention.....	(800) 273-8255
Substance Abuse & Mental Health (SAMSA).....	(800) 662-4357

Address--mail

Frankel CVC (**room number/unit if known**) or UH (**room number/unit if known**)

Person's Name, Michigan Medicine 1500 E. Medical Center Drive Ann Arbor, MI 48109

Building Location-- visiting

If patient is located in the Samuel and Jean Frankel Cardiovascular Center, park in P5,
1425 E. Ann St. Ann Arbor, MI 48109

If patient is located in the University Hospital, park at Taubman Center in P2, 1500 E.
Medical Center Drive, Ann Arbor, MI 48109

Diagnoses & Surgeries

Diagnoses & Surgeries

Lung Resection

Lung cancer, pulmonary nodules and Chronic Obstructive Pulmonary Disease (COPD) may be treated with a lung resection. Lung resection is the surgical removal of all or part of the lung. The amount of lung removed will be determined by your surgeon.

Lung resection types:

- **Wedge resection:** Removal of a triangle-shaped slice of tissue. It may be used to remove a mass or some other type of tissue that requires removal and typically includes a small amount of normal tissue around it.



Wedge Resection

- **Segmentectomy:** Removal of a segment of the lung including the bronchus, pulmonary artery and vein.



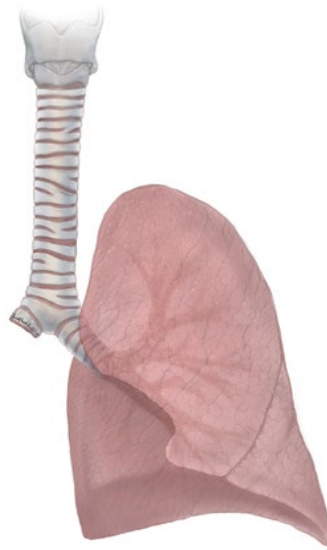
Segmentectomy

- **Lobectomy:** Removes only the lobe of the lung that the mass is in, usually along with some of the nearby lymph nodes.



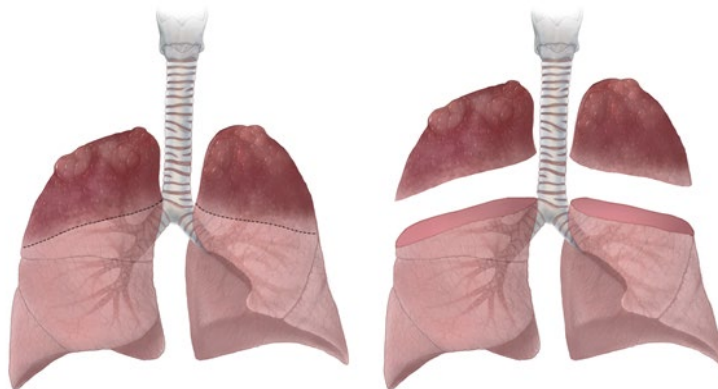
Lobectomy

- **Pneumonectomy:** Removal of an entire lung.



Pneumonectomy

- **Lung Volume Reduction (LVRS):** Used for the treatment of **COPD**. A large area of damaged lung is removed allowing the remaining lung tissue to expand when you breathe in. COPD is a common preventable and manageable disease of the lungs. Patients with COPD have airflow obstruction caused by destruction of the air sacs that exchange gas in the lungs (emphysema) and/or inflammation of the airways.



Lung Volume Reduction

Depending on your type of resection, after waking from general anesthesia you may find you need a chest tube, epidural, urinary catheter, intravenous catheters and a heart monitor. All are important and allow us to monitor you while you are in the hospital.

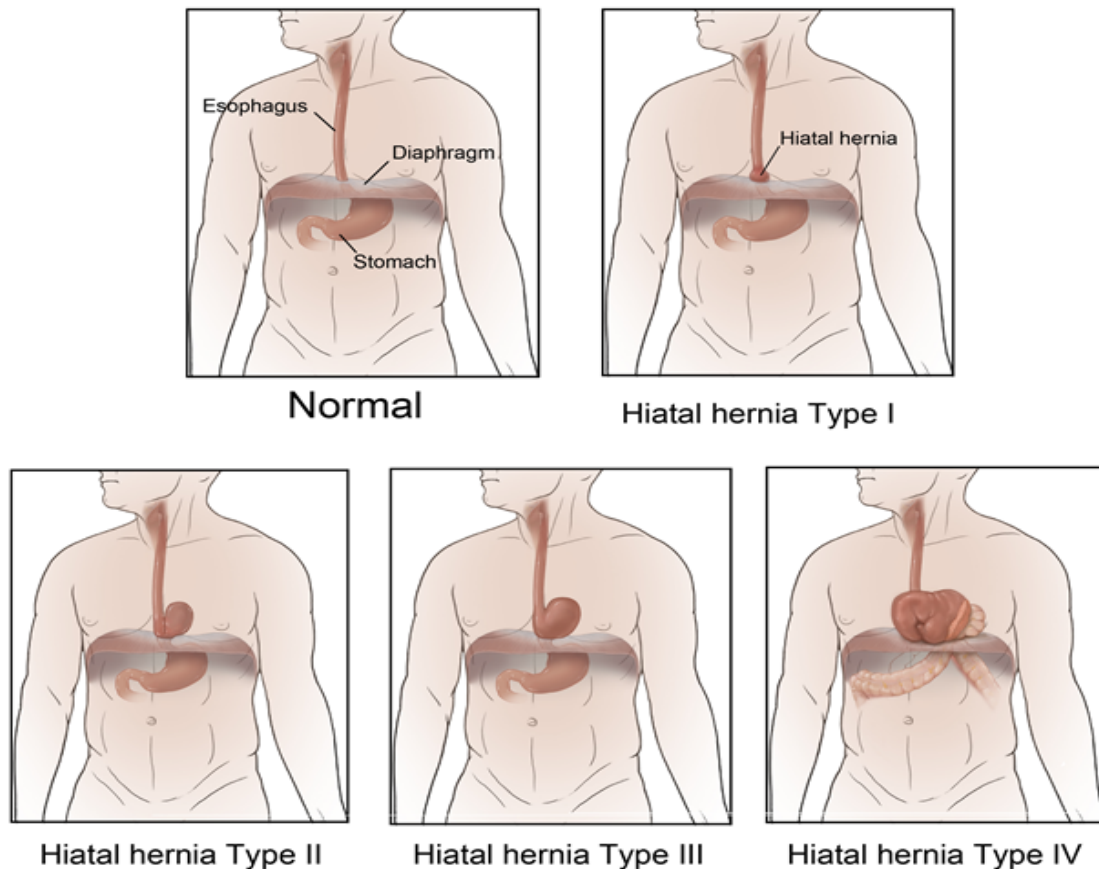
For further description of these lines, please refer to the **Your Hospital Stay** ([page 53](#)) section of this book.

Depending on the surgery you need, your incisions may include **video-assisted thoracoscopic surgery (VATS)**. This is a type of minimally invasive surgery using a small videoscope and small incisions. Or you may need a **thoracotomy** (an incision to open your chest).

For more information on your incisions and postoperative restrictions and activity, please refer to the **Incisions, Restrictions & Activity** section ([page 77](#)) of this book.

Hiatal Hernias Repairs

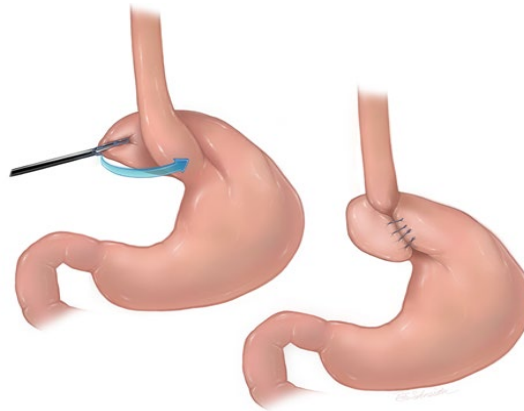
These occur when your stomach or abdominal (belly) contents **herniates** or comes through your **diaphragm** muscle. This is muscle separating the chest from the abdomen (belly) (belly).



A **transthoracic** (across the chest wall) hiatal hernia repair places the stomach back into your abdominal (belly) area through a left thoracotomy incision via your left chest. Generally, this surgery will take about 4 hours.

If you need a **laparoscopic** (small incisions using for surgical instruments) hiatal hernia repair, the stomach will be placed back using abdominal (belly) laparoscopic incisions.

Often when getting a laparoscopic hiatal hernia repair, the person also undergoes a **Nissen fundoplication** (wrap). This is a wrap placed at the top of the stomach around the lower esophagus to prevent another hernia and/or gastroesophageal reflux disease (**GERD**). GERD is a digestive problem allowing too much backflow of the stomach's contents into the esophagus.



Nissen Fundoplication

After waking from general anesthesia, you **may** find you need a nasogastric tube, chest tube, intravenous catheters (IVs), epidural, patient controlled analgesia (PCA), urinary catheter and a heart monitor.

For further description of these lines, please refer to the **Your Hospital Stay** section ([page 53](#)) of this book.

For more information on your incisions and postoperative restrictions and activity, please refer to the **Incisions, Restrictions & Activity** section ([page 77](#)) of this book.

Esophagectomy

Barrett's esophagus occurs when normal esophageal cells are replaced with abnormal cells causing the esophageal tissue to resemble the lining of the small intestine.

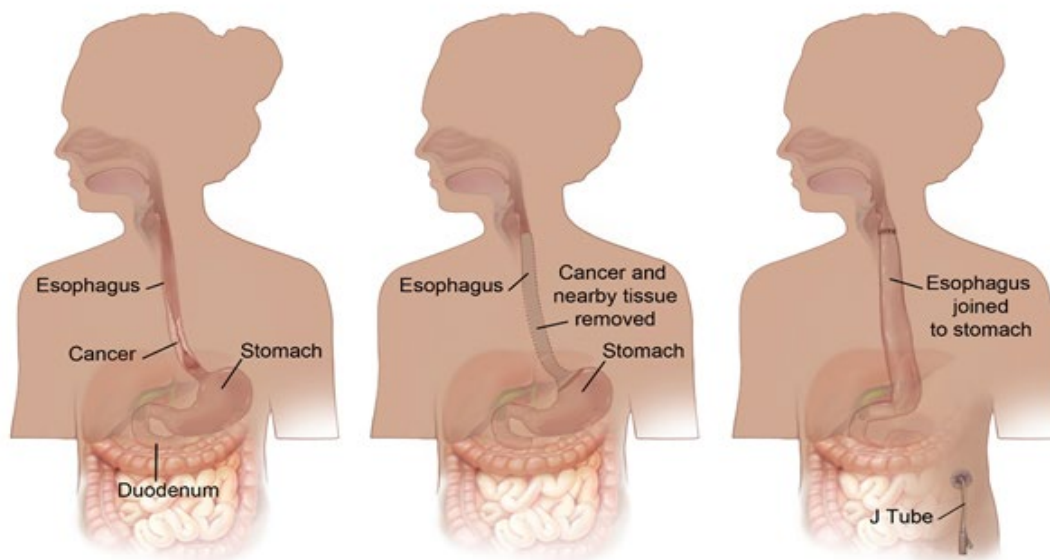
Esophageal cancer is a disease in which malignant (cancer) cells form in the tissues of the esophagus.

Esophagus

The muscular tube through which food passes from the throat to the stomach.

Barrett's esophagus and esophageal cancer can be treated via a **transhiatal esophagectomy** (THE), **minimally invasive esophagectomy** (MIE) or an **Ivor Lewis esophagectomy**. An **esophagectomy** is the removal of the esophagus through incisions in your abdomen (belly), chest and/or neck (**cervical**).

For more information about your incisions and postoperative restrictions and activity, please refer to the **Incisions, Restrictions & Activity** section ([page 79](#)) of this book.



Esophagectomy

After surgery, when you awake from the general anesthesia you will have many tubes and catheters. All are important and allow for monitoring while you are in the hospital. They may include a nasogastric tube (NG), jejunostomy tube (J-tube), chest tube, intravenous catheters (IVs), epidural, patient controlled analgesia (PCA), urinary catheter and a heart monitor.

For further description of these lines, please refer to the **Your Hospital Stay** section ([page 53](#)) of this book.

The J-tube is used for administering medications and nutrition while in the hospital. It is left in place to give you more calories should you require them at home. After discharge the clinic will determine when your tube will be removed.

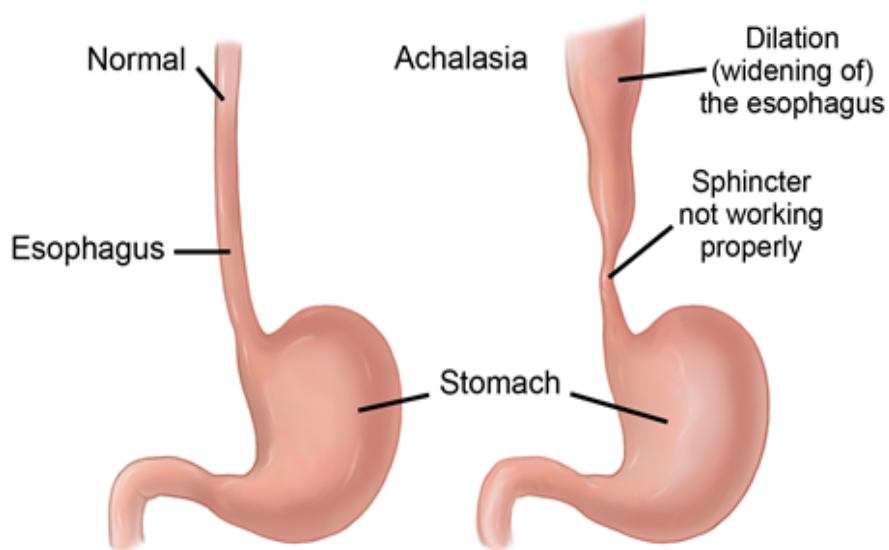
Advancement of diet following esophagectomies will be slow compared to other thoracic surgeries and dependent on each individual patient. For more information about advancing your diet and J-tube care, please refer to the **Nutrition** section ([page 98](#)) of this book.

Following discharge from the hospital, it is recommended that the patient have someone available 24 hours a day for one week. If no one is available, please discuss this with your thoracic surgery team.

An esophagectomy support group is hosted at Michigan Medicine. They meet every first Thursday of the month. They are located on the first floor of the Cancer Center, please park in Parking Lot P1. More information is located on their website: <https://www.uofmhealth.org/conditions-treatments/esophagectomy-support-group>

Other Esophageal Procedures

Achalasia is a disorder of the esophagus that makes it hard for foods and liquids to pass into the stomach. There are many reasons why someone could develop this. In some cases, the muscles located in the esophagus can lead to achalasia. A **Heller myotomy** is a surgical procedure in which the muscles of the lower esophageal sphincter are cut using laparoscopic incisions, allowing food and liquids to pass to the stomach. Occasionally treatment includes a partial fundoplication or wrap (Dor) to prevent gastric reflux.



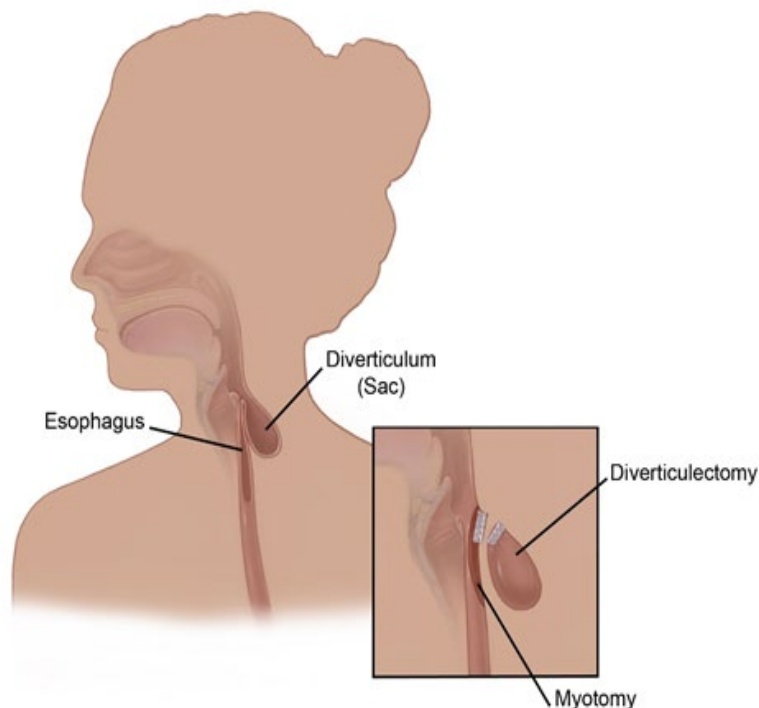
For more information about your incisions and postoperative restrictions and activity, please refer to the **Incisions, Restrictions & Activity** section ([page 79](#)) of this book.

After surgery, when you awake from the general anesthesia you will have tubes and catheters. These can include: a urinary catheter, peripheral intravenous catheters (IVs), patient controlled analgesia (PCA), and a heart monitor.

For further description of these lines, please refer to the **Your Hospital Stay** section ([page 53](#)) of this book.

Advancement of diet after a myotomy is slower than after other thoracic surgeries. See diet advancement in the **Nutrition** section ([page 96](#)) of this book.

An **esophageal diverticulum** is an outpouching, or sac, of the esophagus causing difficulty swallowing (dysphagia) and regurgitation of food. The most common form of diverticulum is located in the upper esophagus, just below the upper esophageal sphincter (called **Zenker's diverticulum**). Also common are diverticulum located in the lower esophagus but above the diaphragm (**epiphrenic diverticulum**). Both Zenker's and epiphrenic diverticulum can be treated by a surgical removal of the pouch (diverticulectomy). Your tubes and catheters will vary depending on the type of repair you need.



After waking from general anesthesia, you **may** find you need a nasogastric tube, chest tube, intravenous catheters (IVs), epidural, patient controlled analgesia (PCA), urinary catheter and a heart monitor.

For further description of these lines, please refer to the **Your Hospital Stay** section ([page 53](#)) of this book.

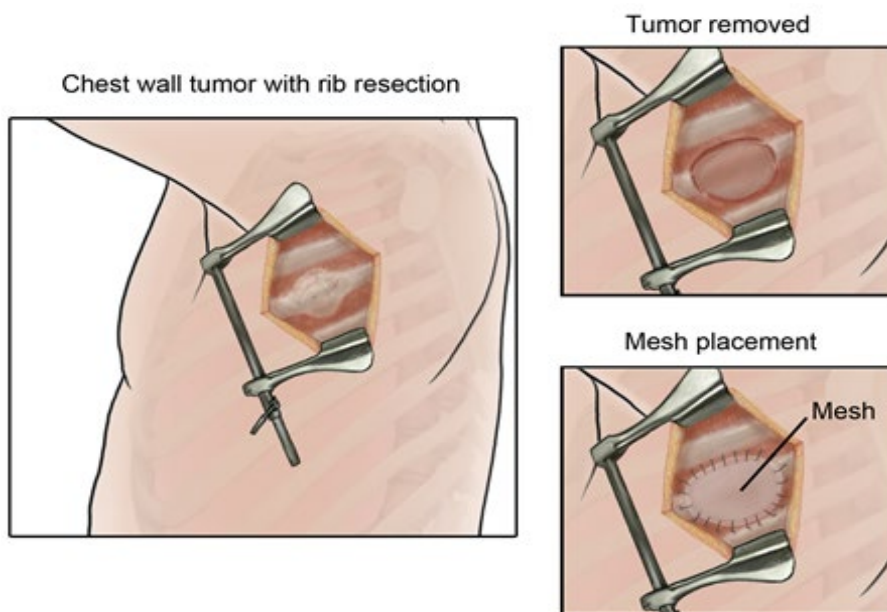
Your incisions will vary based on the type of repair you need. The incisions you may need can include laparoscopic abdominal incisions, cervical (neck), and/or a thoracotomy (incision in the chest wall).

For more information about your incisions and postoperative restrictions and activity, please refer to the **Incisions, Restrictions & Activity** section ([page 77](#)) of this book.

Chest Wall Reconstruction

Chest wall tumors occur in the chest (thoracic) cavity. This is a space that is enclosed by the spine, ribs and sternum (breastbone) and is separated from the abdomen (belly) (belly) by the diaphragm. A portion of the rib cage will be removed (resected) in order to take out a chest wall tumor. **Chest wall resections** can include the removal of soft tissue, cartilage, sternum and ribs. Reconstruction (replacement) of the chest wall will be done using muscle, mesh or skin.

After surgery, when you awake from the general anesthesia you will have many tubes and catheters. All are important and allow us to monitor you while you are in the hospital. They include a chest tube, intravenous catheters (IVs), epidural, patient controlled analgesia (PCA), urinary catheter, Jackson Pratt (JP) bulb and a heart monitor.



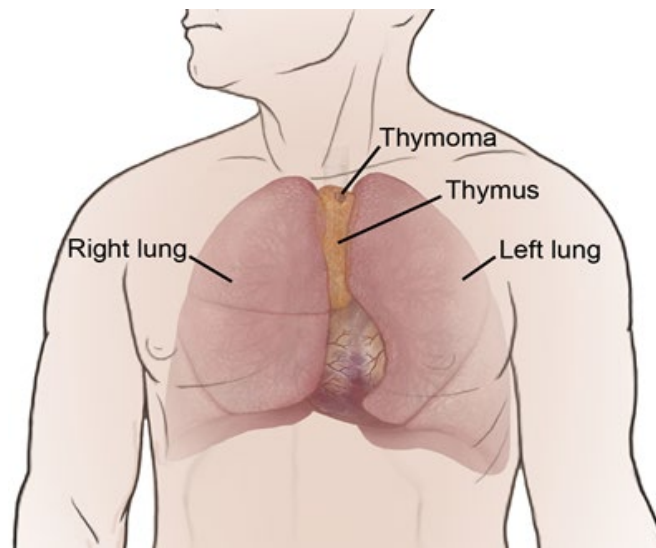
For further description of these lines, please refer to the **Your Hospital Stay** section ([page 53](#)) of this book.

Your incision will be a **thoracotomy** (incision in the chest wall) or **sternotomy** (incision made vertically along the sternum).

For more information about your incisions and postoperative activity restrictions, please refer to the **Incisions, Restrictions & Activity** section ([page 77](#)) of this book.

Mediastinal Mass Resection

Mediastinal masses (or tumors) are benign (non-cancerous) or cancerous growths that form in the area of the chest that separates the lungs. These will be surgically removed.



A **thymoma** is a tumor originating from the gland behind the sternum (breast bone) called the thymus. A **thymectomy** is the surgical removal of the thymus gland.

After surgery, when you wake up from general anesthesia you may have a chest tube, intravenous catheters (IVs), patient controlled analgesia (PCA), urinary catheter, and a heart monitor.

For further description of these lines, please refer to the **Your Hospital Stay** section ([page 53](#)) of this book.

Your incisions will include a partial to full **sternotomy** (a vertical incision along the sternum) or **video-assisted thoracoscopic incisions (VATS)**.

For more information about your incisions and postoperative activity restrictions, please refer to the **Incisions, Restrictions & Activity** section ([page 77](#)) of this book.

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Preparing for Surgery

Preparing for Your Surgery

Welcome to Michigan Medicine

We are happy you have chosen Michigan Medicine for your health care.

What are my preoperative instructions?

Your procedure is scheduled on:

Please call **(866) 983-9090** between 8am -11am the business day before your operation. Please leave your name and a telephone number on the answering machine where you can be reached that afternoon between 1pm-5pm. If your operation is scheduled for a Monday, please call the Friday before.

A nurse will call you back with the following:

- **Time of arrival:** _____
- **No solid foods after:** _____
- **Nothing to drink after:** _____

<p>Please note: You are asked to arrive 2 hours before your actual surgery or procedure will start. This allows for the nurses and anesthesia to adequately prepare you for the operating room.</p>

The nurse will also review specific preoperative instructions for your case including what medications to take or **not** take before surgery.

What if I have to cancel my surgery?

- Call your surgeon's office as soon as you are aware of a problem. You can call and notify the office up until 5pm the day before your surgery.

- **If it is after 5pm the day before surgery, call (734) 936-8857** and leave a message on the answering machine to notify the operating room. In the event you are canceling late, you should also try and notify your surgeon's office.

Important phone numbers:

- Preoperative Nurse Line (866) 983-9090- Make sure you call the day before your procedure.
- Hospital Information: (734) 936-4000
- Thoracic Surgery Clinic: (734) 936-8857
- Insurance: (734) 936-9485
- Billing phone number: (855) 855-0863

A Checklist to Guide You:

In the time leading up to your surgery, be sure to follow these simple tips to ensure the best possible outcome and prepare for a successful recovery. Use the checklist below to help you get ready.

- ❑ **If you smoke, STOP!** The **single** most important thing you can do for your health is to stop smoking. Smoking increases your chances of having complications such as pneumonia after surgery. Non-smokers also heal faster than people who smoke. Stop smoking now so there is no need to cancel your surgery! You must be smoke free for 3 weeks prior to your procedure or we will cancel your surgery.
- ❑ For more information on how to quit smoking, read the “**Promoting a Healthy Lifestyle**” section in this book ([page 123](#)).
- ❑ Please **do not drink** any alcoholic beverages for **24** hours before your operation unless otherwise directed. Be sure your surgeon and anesthesiologist know your usual amount of alcohol intake.

For any questions about medicines, call the thoracic surgery office at **(734) 936-8857**.

Practice your preoperative activities

Practicing your activities before and after your operation is important and will allow you to take an active role in your recovery. Performing these activities will play an important role in getting yourself well and home.

Preoperative goals:

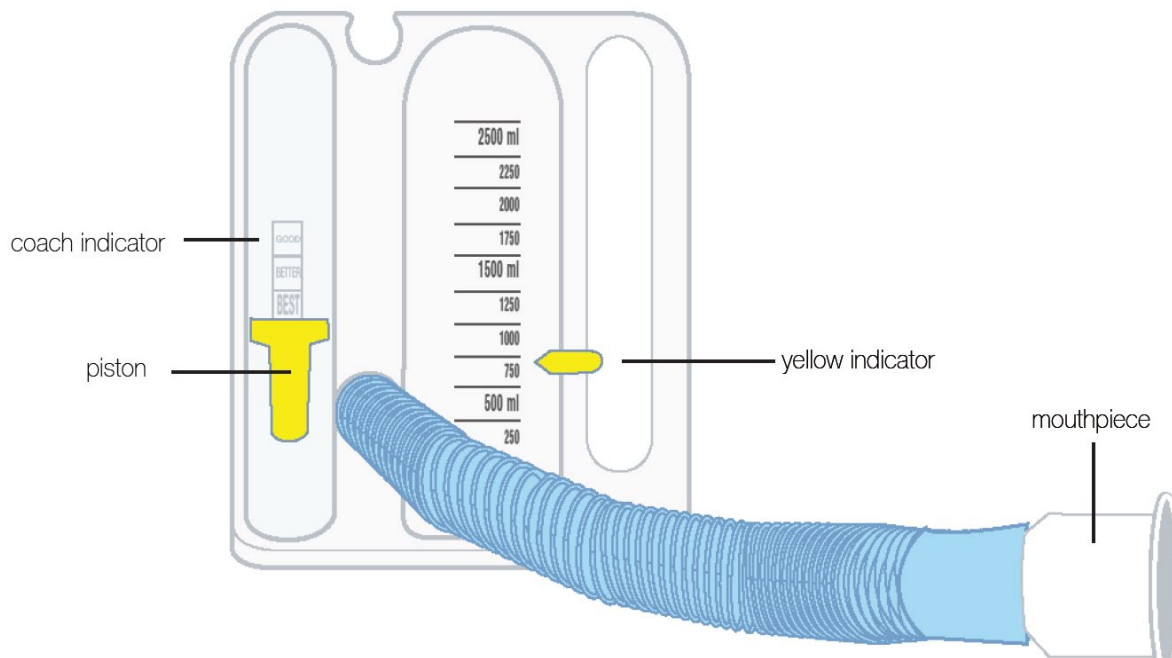
Goal 1: Move—Increase your physical activity.

- More physical activity before surgery can lower your risk for complications after surgery.
- Starting just a few weeks before surgery can make a difference in your recovery. It can help you get out of the hospital sooner.
- Walking – Our goal is for you to be walking 2-3 miles a day before surgery. Make sure you wear comfortable shoes.
 - If you are new to exercise/walking start with 5-10 minutes at a time. Try to walk longer each time, working up to a total of 30 minutes per day. If you become short of breath, slow down or divide up your walking time.
 - If you exercise/walk regularly add 5-10 extra minutes each day.

Goal 2: Breathe

- Use your incentive spirometer (IS) for a few weeks before your surgery.
 1. Sit up straight, taking in a deep breath, blow all the air out of your lungs.
 2. Place the mouthpiece in your mouth, sealing your lips tightly around it.
 3. Breathe in slowly and deeply through your mouth. Keep the yellow piston between the “best” and “better” range.
 4. Breathe out normally once your lungs are full. Rest & repeat.

- Use your IS 3 times a day, with 10 repetitions each session.



- Quit smoking.
 - If you smoke it delays wound healing, your heart works harder than it should, and it makes it harder to be put to sleep for surgery.
 - To quit smoking: set a quit date, talk to your primary care physician (PCP), ask about smoking cessation programs, ask family & friends for support, and stick to your plan.

Goal 3: Eat

Focus on proper nutrition. Make healthy, balanced food choices before and after surgery.

- Make sure the food you eat is dense in protein, calcium, vitamins and minerals.
- Protein helps you heal faster and maintain your muscle mass during recovery.

Goal 4: Relax

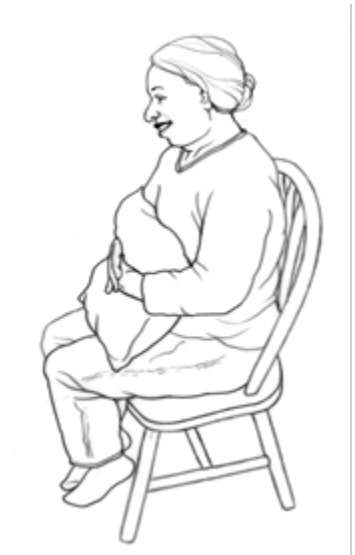
Manage and decrease your stress by practicing relaxation techniques.

- Relaxation techniques include: deep breathing, sleeping, finding a support system, meditating, laughing, getting active, and thinking positively.

Deep Breathing and Coughing

One of the most important factors that will speed your recovery is your ability to breathe deeply and cough effectively. Practice each step below several times each day.

1. Take two deep breaths in through your nose and out through your mouth.
2. On the third breath, breathe in deeply and then give two or three sharp coughs before taking another breath.
3. You should feel your abdominal (belly) muscles tighten each time you cough. Be sure to spit out any mucus your cough produces.
4. After your surgery, you will want to support your incision with your hands, a pillow, or a folded blanket when coughing.



Exercises for your legs

In addition to your breathing exercises and walking, there are a few simple exercises you can do to keep muscle tone, promote good circulation in your legs, and decrease swelling in your legs.

- Practice each exercise at least once daily.
- Repeat each exercise 10 times and increase to 25 as able.
- After your operation, the exercises located in the **Incision, Restrictions & Activity** section ([page 81](#)) of this book should be performed every hour while you are awake until you are walking frequently.

Physical Therapy Standing Exercise Program

The purpose of this exercise program is to improve strength and mobility. Exercises are to be done in standing, holding onto something stable. With each exercise remain upright and stable. **Remember:** never hold your breath while exercising. Perform the exercises as directed by your PT.

1. **Heel Raises/Toe Raises** - Raise your heels off the ground, and then raise your toes off the ground. (**Figure 1**)



Figure 1

2. **Marching**- Lift one knee up towards the ceiling. Repeat with the other leg. (**Figure 2**)



Figure 2

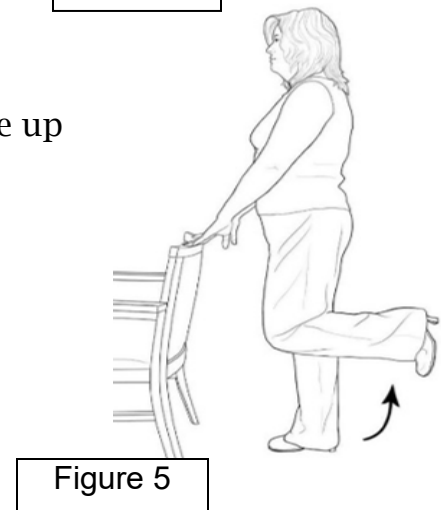
3. **Hip abduction/adduction**– Bring your leg out to the side keeping your foot pointing straight in front of you, return your leg to the start position. Repeat with the other leg. (**Figure 3**)



4. **Hip extension**– Bring your leg out behind you, emphasizing your thigh going behind you, squeezing your buttocks. Repeat with your other leg. (**Figure 4**)



5. **Hamstring Curls**– Bend one knee, bringing your ankle up towards your bottom. Repeat with your other leg. (**Figure 5**)



6. **Mini Squats**– Start with a chair behind you while you are holding onto the kitchen counter. Stick your bottom out backwards and bend your knees as if you’re going to sit down. Do not sit down entirely; rise back up before you touch the chair. Only lower as far as you can without losing control. (**Figure 6**)



Figure 6

7. **Forward Step Ups**– Step up with the right foot, followed by the left foot, step down with the left foot, followed by the right foot. Repeat starting with the opposite foot. Please use upper extremity support for balance/safety when completing this exercise. (**Figure 7**)



Figure 7

Develop a plan for recovery

Before you come to the hospital for your thoracic surgery, work with your family or friends to make plans for your hospital stay and make plans for your return home after surgery. Gather people around you who will support you during and after your surgery.

Summary: Before your surgery

Do the following:

- ✓ Report any symptoms of cold, influenza, or infections. Call your preoperative clinic before 5pm. Call (866) 983-9090 if it is after 5pm and leave a message.
- ✓ Review the thoracic surgery book.

Do not do the following:

- ☒ Do not smoke 3 weeks before procedure.
- ☒ Do not drink alcohol 24 hours before surgery.

The day before surgery:

- Be sure to call the Preoperative Nurse line to leave/confirm a call back number. The nurse will be calling you to tell you what time to arrive at the hospital. If you are unable to receive a return call between the hours of 1pm and 5pm, we will leave a message unless specifically asked not to.
- If your operation is scheduled for a Monday, please call the Friday before.
- When you receive the call, the nurse will review all your current medications including over the counter, herbal and vitamin supplements. Please be sure to have a current up to date list available when you get the call.
- Do not eat or drink anything, except for water and your medications, after midnight the day of surgery. This means no coffee, hard candy, gum or food of any kind. You may drink sips of water up to 3 hours before you check in at the Surgery Reception desk.
- Do not drink any alcoholic beverages 24 hours before your operation.
- Shower using an antibacterial soap such as Dial®.

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Safety During Your Hospital Stay

Safety During Your Hospital Stay

Please review the following safety tips.

Speak up! If you have voiced a concern to staff that you or your family member's condition is rapidly getting worse, but feel it has not been adequately addressed, pick up any hospital phone and call **The Family Initiated Rapid Safety Team (FIRST)** by **dialing 141**.

Be informed. Speak up if you have any questions or concerns. You have the right to question anyone who is involved with your care.

Know who is in charge of your care. Many people may be involved in your care. Also, doctors can change during your stay. You can encourage your care providers to write their names and roles on the whiteboard in your inpatient room to help you understand who is on your care team.

Ask about test results. Do not assume “no news is good news”; ask your doctor about your test results. **Be informed of any invasive procedures, such as surgery.** Make sure you and your doctors all agree on exactly what will be done. When you are unable to speak up (sedated or breathing tube prevents you from speaking), a trusted family member or friend can be your advocate. Identify that person before you are admitted to the hospital.

Read more about **Advance Directives** in the **Hospital Facilities & Services** section of this book ([page 129](#)).

Preventing falls during your hospital stay:

What is a fall?

A fall is an unplanned drop to the floor with or without injury.

Why are we concerned about falls?

- Approximately 30 out of 100 (30%) of falls lead to minor injuries such as scrapes and bruises.
- Approximately 15 out of 100 (15%) of falls lead to serious injuries such as bone fractures, brain injury and even death.
- Falls lead to longer hospital stays and may cause an admission to a long-term care facility.

What are “fall risk factors”?

Fall risk factors are things that can make you more likely to fall while in the hospital. These include:

- **Because you are hospitalized:** The hospital is an unfamiliar environment with different furniture and equipment to move around. Because you are sick and because of the different environment, you are at risk for falling simply by being in the hospital.
- **History of fall:** This means that you have fallen within the last 6 months
- **Balance/Gait:** You may be unsteady on your feet or unable to hold yourself upright for very long due to an illness, weakness, or medications. You might also need a walker or cane to move around.
- **Elimination:** You may have to use the bathroom frequently or urgently due to an illness or medications you are taking.
- **Cognition:** You may be confused or forgetful as a result of illness, a procedure, or medications you are taking.
- **Sensory:** You may be hard of hearing or wear glasses. You might be light-headed or dizzy or you may have numbness or tingling in your hands or feet.

In addition, certain medications may also increase the risk for falls.

Common Medications that Contribute to Falls: Blood pressure medications

- Diuretics (such as Lasix®)
- Antihistamines (such as Benadryl®)
- Sleep aids
- Antidepressants
- Anti-seizure medications
- Steroids
- Pain medications (such as narcotics)
- Anti-nausea medications
- Chemotherapy
- Other central nervous system drugs (such as: Neurontin®, Lyrica®)

What can I do to prevent falls?

- Be aware of how you are feeling from day to day and report to your nurse symptoms such as confusion, dizziness, changes in balance, etc.
- If you have any of the risk factors listed, please use your call light to ask for help when getting out of bed.
- Keep the area, especially the path to the bathroom clear of clutter.
- Change positions slowly and sit at the edge of bed briefly prior to standing to make sure you don't feel dizzy or weak before moving.



Patient being assisted by staff with proper gait belt use.

- Wear proper footwear to decrease risk of slipping (gripping socks or sneakers).
- Make sure clothing or tubing does not drag on the floor when walking.
- Use bathroom call light for assistance.
- Allow us to remain with you in the bathroom. While we respect your privacy, safety is a top priority.
- Staff will assist with ambulation and use devices such as a gait belt, walker, or cane when needed.
- Staff may ask family to stay with you for safety during your hospital stay.

The ABC's of Fall Prevention

- **A**sk for help: Call the nurse or nurse aide if you want to get up.
- **B**e aware of your body: Do you feel dizzy or weak?
- **C**autious: Is there enough light? Are you wearing slip-resistant hospital socks?
- **D**anger: Do not use unsteady items such as a bedside table or IV pole, to get up.

What is the fall prevention sign?

It is a sign in your room that shows why you are at risk for falling while in the hospital and how we will work together to safely move you.

What's on the sign?

The left-hand side of the sign shows the risks you have for falling and what actions to take to address those risks. The right-hand side shows what type of assistance you may need to move safely.

Does everything on the sign apply to me?

No. Your nurse will mark the “fall risk factors” that apply to you. Please speak up if you think something is not right or if you have questions.

Can my fall risk factors change?

Yes. While you are in the hospital your fall risk factors may change. Your nurse will update the fall prevention sign when there is a change.

Using the Sign:

Please use the sign as a reminder of ways you can help us keep you safe.

To view the fall prevention sign visit:

<http://www.med.umich.edu/1libr/NursingUnits/FallPreventionSign.pdf>

Medication

Your doctor may order new medications when you are in the hospital.

Be sure you know:

- What medication you are taking and why you are taking it
- The dose (amount)
- How often you take it and what time of day
- Side effects that may occur

We want you to feel comfortable voicing concerns if you feel that any medication you receive is not correct. If advised to bring medications from home, a staff member must give them to you. Please do not take any medications not given by your nurse or respiratory therapist.

For questions or concerns about medication, alert your doctor or nurse.

Hand hygiene

Patients in the hospital can get infections called healthcare-associated infections, from the spread of bacteria on the hands of caregivers and other staff. Studies show that proper hand hygiene (soap and water or hand sanitizer) reduces the occurrence of these infections. In other words, health care providers and patients can prevent the spread of bacteria by simply washing their hands.

At Michigan Medicine, staff are required to wash their hands (with soap and water or hand sanitizer) **upon entering and leaving** a patient's room as well as before and after each patient contact. If you ever notice anyone forgetting to clean their hands, please remind them to do so. We encourage patients and family to practice good hand hygiene as well.

Day of Surgery

Day of Surgery

What are my instructions on the day of surgery?

The day of your operation:

- Bring your thoracic surgery book with you.
- Take your medications on the morning of your procedure as you were instructed by your nurse/surgeon. Please refer to the instruction list given to you at your preoperative appointment. You may have just enough water to swallow your medications.
- Be sure to shower the day of surgery using an antibacterial soap. Do not shave your hair on your chest, arms or legs. Do not apply makeup, deodorant, lotion or powder after your shower.
- Brush your teeth and rinse out your mouth.
- Wear loose comfortable clothes.
- If you have been given a **blue blood bank form**, you must bring it with you the morning of surgery.
- Bring any documents related to Advanced Directives and Durable Power of Attorney.
- Bring your insurance card.
- Bring your incentive spirometer with you and have your family hold on to it.
- Bring a **current list of medications, including dosage, of everything you take**: prescription, over the counter, vitamins or herbal supplements.
- Bring your glasses/lens case. All contact lenses must be removed before your procedure.
- Remove all jewelry before you arrive at the hospital.
- Remove your dentures and/or wigs. Give them to your family to hold.
- You may bring a small suitcase with personal items and loose-fitting pajamas, tennis shoes, and a robe. Please leave your suitcase in the car, with your family or store with security until you are in your hospital room. If using security to store your belongings, please notify someone in the reception area before surgery.

- Do not bring valuables.



Parking: Please park in the Cardiovascular Center Visitor Parking Structure (P5).
Valet parking is available Monday-Friday 5am-7pm.

Address to use in GPS: 1425 E. Ann St.
Ann Arbor, MI 48109



Follow these instructions to get to the “**Surgery Check in**” area:

1. Enter the Cardiovascular Center on Level 3 from the parking structure.
2. Take the Elevators to Level 4.
3. “Surgery Check in” is on the right after you exit the elevators.

When you arrive at the “Surgery Check in” area, your family will receive a pager if they do not have a cell phone with them. The surgical waiting area staff will use their cell phone or pager to let your family know when your surgery is over. When the pager lights up, your family should check back in with the clerk. The clerk will escort them to a consult room where your surgeon will talk with them.



Cell phones can be used in the waiting areas but **not** in the preoperative and recovery areas.



Identification (ID) bracelet

When you arrive, an ID band with your name and medical record number (MRN) is put on your wrist. Staff will check your identity by looking at this ID bracelet. Please do not remove the bracelet until after you are discharged home.

Preoperative holding area

After you have checked in to the hospital you will be directed to the preoperative “Holding Area”, where you will be prepared for surgery.

In the preoperative holding area:

- Your skin will be cleansed by a tech before changing into a hospital gown. If you have hair on your chest, it will be clipped.
- You will change into a hospital gown, socks and cap. We will supply a plastic bag for your clothing.
- You will have your blood pressure, pulse, respiratory rate and temperature checked. You will have your blood oxygen saturation measured. You will have a heart monitor patches placed.
- You will be interviewed by the preoperative nurse.
- If you have been given a blue blood bank form, be sure to give this to the nurse.
- At least one intravenous line (IV) will be started so we can give you medications and fluids. Depending on your surgery, other procedures will be done in pre op. Examples include: placement of epidural catheter for postoperative pain control or an arterial line to continuously monitor your blood pressure.
- A foam dressing will be applied to any area of your body that will have prolonged contact with the operating table.
- Lab samples may be drawn if ordered by your surgeon or anesthesiologist.
- A surgeon, or a member of your surgical team will mark your surgical incision sites.
- You may be asked to participate in research studies.
- Family members will be able to briefly visit with you once you are ready for surgery.
- Cell phones and/or cameras are not allowed in the preoperative or postoperative areas.

You will be taken to the operating room on a stretcher or bed by the anesthesia team.



Pads will be placed on your chest to monitor your heartbeat.



A cuff will be placed on your arm. The cuff will gently squeeze on and off as it monitors your blood pressure.



A clip will be placed on your finger to measure the oxygen level in your blood, as well as your breathing.

Meeting your Anesthesiologist

You will meet your anesthesiologist, who will review your medical records, paying special attention to your past anesthetic experiences. They will also thoroughly review all previous tests. You may be given a mild sedative that will make you feel quite drowsy and comfortable. General anesthesia uses

medications given through an IV to put you to sleep during the operation, and gases to keep you asleep.

Operating room

Once you have talked with your surgical care team, you will be moved to the operating room. Here you will notice it is cool, brightly lit, and has many complex pieces of equipment. You will be asked to move onto the operating bed. You will be connected to equipment that is required to ensure your safety during your operation. There will be many people in the operating room including surgeons, anesthesia staff, nurses and surgical technicians.

At this point, preparations will be made to deliver the anesthetic that will allow you to tolerate your thoracic operation in a safe and comfortable manner.

1. You will be asked to breathe oxygen by a mask. The general anesthesia you receive before surgery will allow you to sleep during the operation. After you receive this medication, you will be completely unconscious and pain-free during your surgery.
2. Once you're asleep (anesthetized), a breathing tube is inserted through your mouth. This tube attaches to a ventilator, which breathes for you during and immediately after the surgery.
3. A urinary catheter may be placed after you have been deeply anesthetized to drain urine from your bladder.

After your operation

You will be taken to the Post Anesthesia Care Unit (PACU). Once you have recovered from anesthesia and your bed is ready, you will be taken to your hospital room.

Your Hospital Stay

Your Hospital Stay

Post Anesthesia Care Unit (PACU)

After the operation is complete, the surgeon will meet with the family in a consultation room. You will meet with the Physician Assistant (PA) after they arrive to step down unit. Your family can come see you when you are recovering in the PACU. It is preferred that you limit your family to 2 people at a time who are over the age of 12.

- While in the PACU, you may not be allowed to eat or drink anything.
- You will be waiting in the PACU until a bed on the step-down unit becomes available.

What types of lines, drains and equipment will be attached to me after surgery?

After surgery, you will wake up to a team of healthcare professionals and lots of equipment. It's normal to have tubes and wires attached to your body. They help staff check your vital signs, take blood, give medications or fluids and drain body fluids.

The following is a brief description of some of these tubes, lines and drains and what you might expect upon awakening depending on your surgery. If you have any questions, the medical team is here to explain.

Endotracheal Tube (Breathing Tube):

At first you will be too sleepy to breathe on your own. There will be a breathing machine helping you. There will be a tube placed through your mouth into your windpipe during surgery. This tube is attached to a breathing machine (ventilator). Our goal is to remove the breathing tube as soon as it's safe. If you require additional assistance breathing, the tube may stay in longer, in which case you will be moved to the ICU.

Arterial Line:

The arterial line is a catheter that is placed in your wrist or groin. The arterial line allows the medical team to continuously watch your blood pressure. It also allows for your blood to be drawn without having to be poked. The arterial line stays in place until you are ready to move to the step-down unit.

Peripheral Intravenous Catheter (IV):

An IV is a small, flexible tube placed into a vein that allows access for intravenous therapy such as medication or fluids. You will have at least one IV access site during your entire hospital stay.

**Urinary Catheter:**

In the operating room, you may have a catheter placed into your bladder to drain urine. You may feel the urge to urinate while it is in place, but you will not need to worry about using the toilet. It helps the medical team measure the amount of urine you make and monitor how well your kidneys are working. The catheter will be removed at the discretion of your medical team.



Pulse Oximeter:

Pulse oximetry is a way to measure how much oxygen your blood is carrying. A clip-like device called a probe is placed on a body part, such as a finger or ear lobe. The probe uses light to measure how much oxygen is in your blood. This information helps your health care provider decide if you need extra oxygen.

**Heart Monitor (Telemetry Monitor):**

Following your operation, a heart monitor may be placed on you to provide a constant recording of your heart's activity. It is used by your doctors and nurses to determine if your heart is beating normally. The monitor screens will be located at your bedside and at the nurses' station. Our highly trained nurses will watch the heart monitor at all times. If an alarm sounds, it does not necessarily mean there is a problem with your heart

**Sequential Compression Device (SCDs):**

SCDs are placed on your calves and squeeze your legs intermittently to help prevent a blood clot from forming. It is important that you wear them when in bed or sitting in your chair.



Chest Tube:

After your operation, it is normal for some fluid or blood to drain from your chest into the area around your heart and lungs. During your surgery, tubes are put in to drain any extra blood, fluid or air that may collect. The chest tubes come out of your chest and drain into a container. The tubes are removed when the fluid has decreased and there is no evidence of an air leak. The specific time will vary from person to person and is typically 1-2 days after surgery.

**Jackson-Pratt Drain (JP Drain):**

A JP drain is a grenade-shaped bulb that is used for collecting bodily fluids from surgical sites. The device consists of an internal drain connected to the bulb with plastic tubing.

**Jejunostomy Tube (J-tube):**

A J-tube is a soft, plastic tube placed through the skin of your abdomen (belly) into the small intestine. The tube is used to deliver food and medicine.



Nasogastric Tube (NG tube):

A NG tube is a flexible tube that is passed through your nose and down into the stomach. It can be used to remove the contents of the stomach (such as fluid or air), or to put substances into the stomach (such as nutrients or medications) when you cannot take food or drink by mouth. When connected to suction, this tube may whistle.

**Penrose Drain:**

A Penrose drain is a soft, flexible rubber tube used as a surgical drain to prevent the buildup of fluid in a surgical site. Part of the drain will be inside your incision and part of it will come out of your skin.



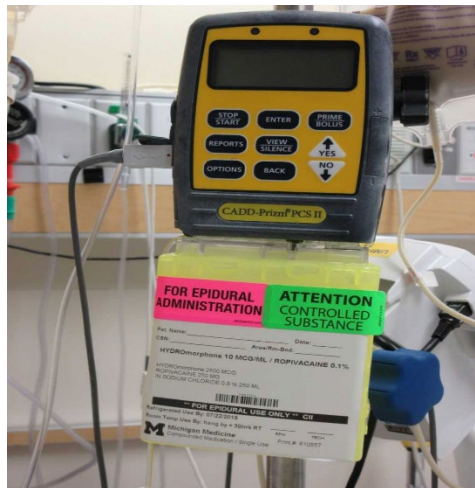
PCA (Patient Controlled Analgesia):

PCAs allow you to give yourself pain relief immediately through their IV. You push a button that is attached to a pump with pain medications programmed by the nurse. Upon pushing the button, medicine is released from the pump into the IV line.



Epidural:

Epidurals allow for medication to be given to the nerves within the epidural space of the spinal column. Epidurals can allow for continuous pain medication to be given; as well as extra medicine to be given when you push a button.

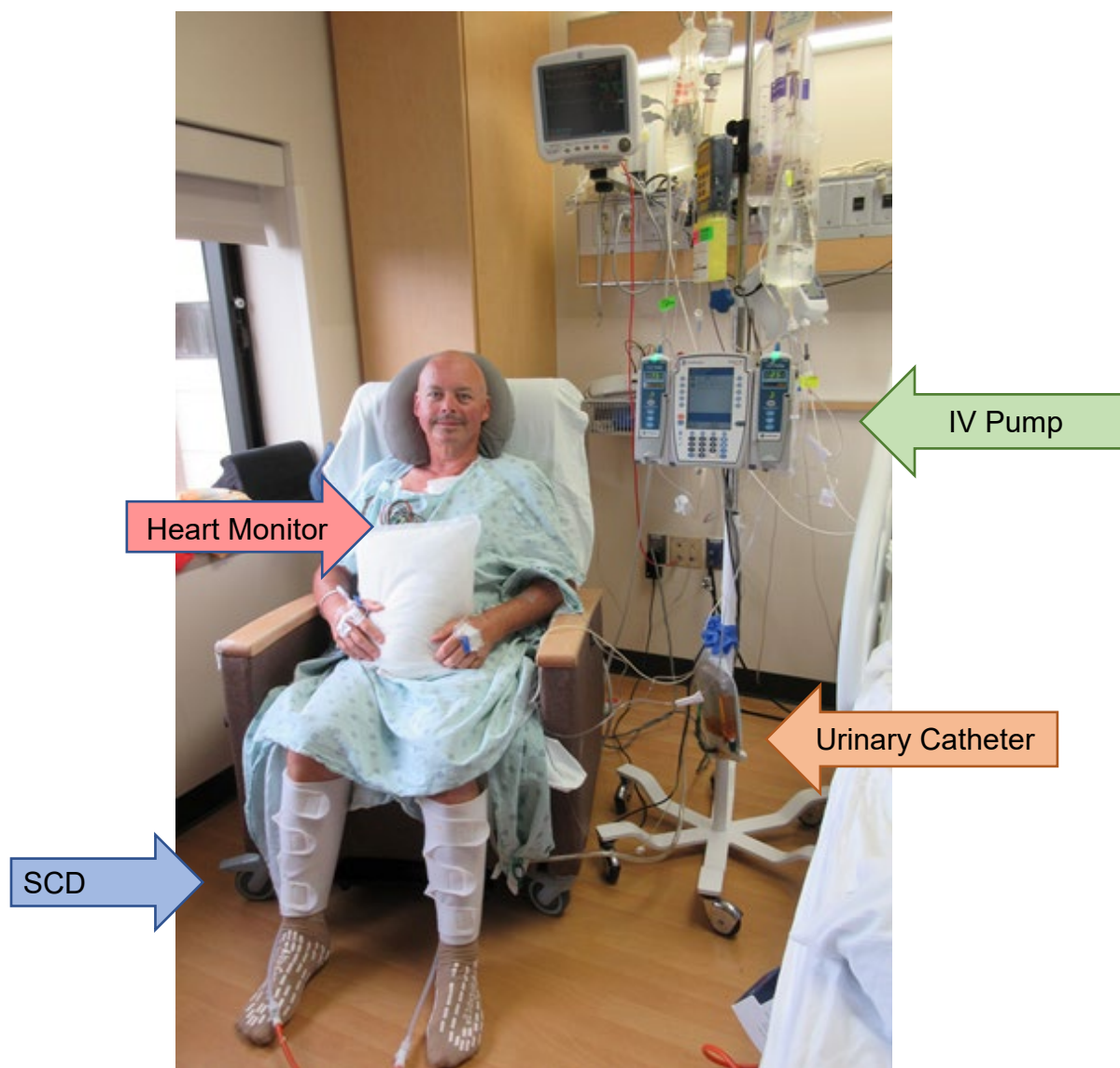


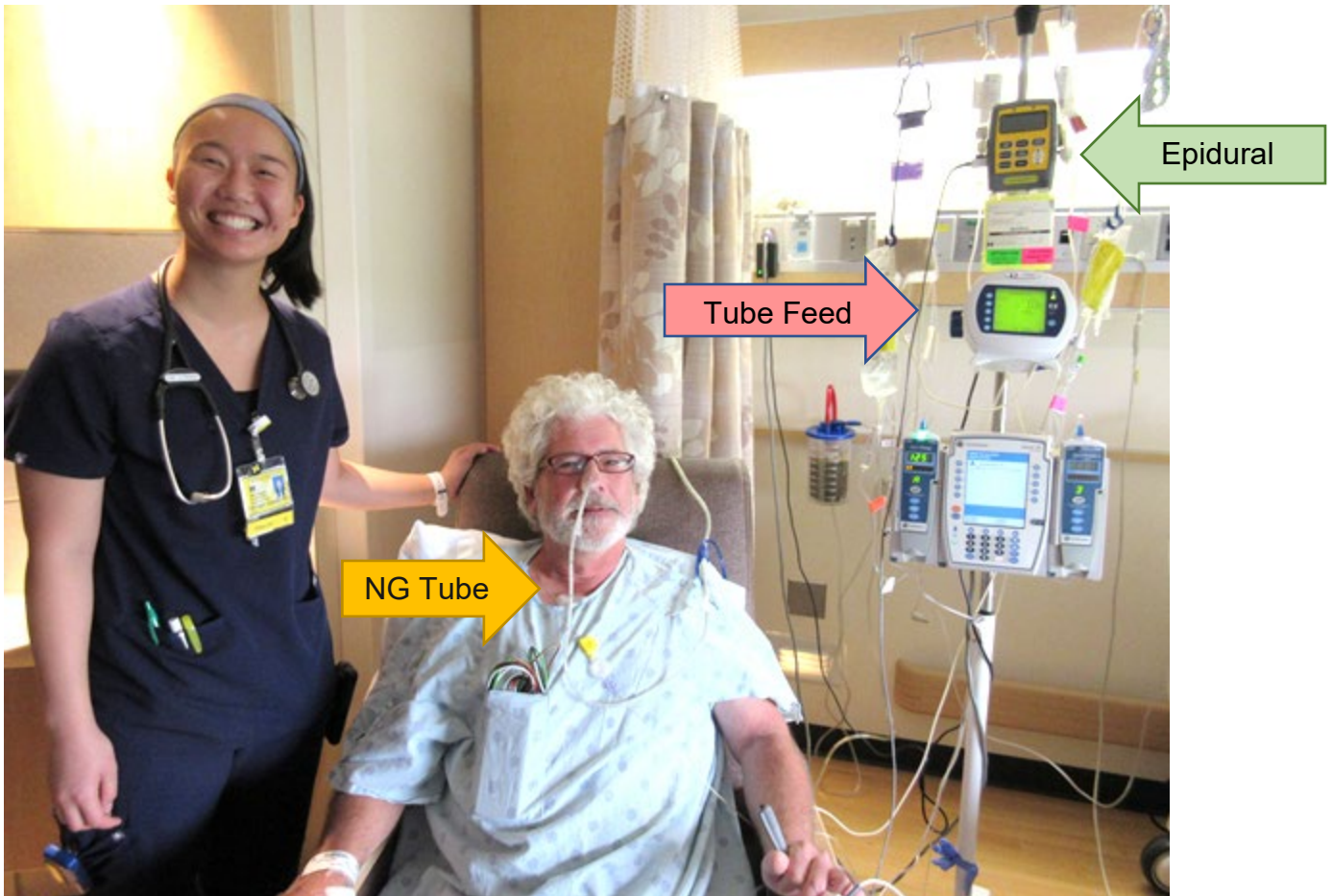
Peripheral Pain Pump:

Peripheral pain pumps are placed at the location of your incision. Peripheral pain pumps will administer a local numbing medicine continuously. This device may also be called a paraspinal catheter or elastomeric pump.



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Pain and comfort management

What kind of pain can I expect to feel after surgery?

It is normal to experience pain after your surgery. You may feel pain in places other than your incision site. Not moving will increase postoperative pain. Please tell a member of your healthcare team about the pain you have after surgery, which can include:

Muscle pain: You may feel muscle pain in your chest, back, neck, shoulders or legs. This is from lying on the operating table.

Pain from chest tubes: You may have some discomfort from the chest tubes that were placed in your chest to drain fluid, blood and air during thoracic

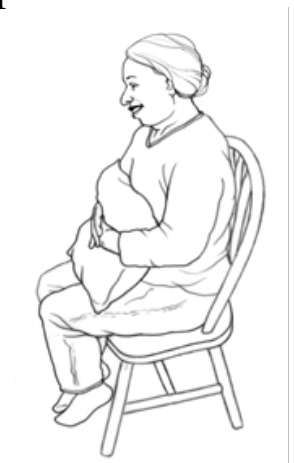
surgery. It may be difficult to take a deep breath when your chest tube is in place.

Incision pain: You may feel pressure or burning at the incision site(s).

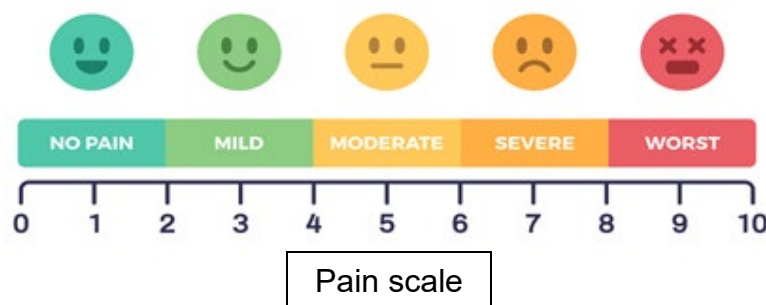
Who is going to help manage my pain in the hospital?

Your provider will order pain medication for you to take. Your nurse will ask you about your pain at regular intervals throughout your recovery, but do not hesitate to ask for pain medication if needed. You may be given pain medication in the form of an epidural, IV, peripheral pain pump, through a feeding tube, or by mouth. Depending on what surgery you are having, your surgeon may also freeze nerves above and below the incision while you are still in the operating room. This is called cryoanalgesia. Cryoanalgesia temporarily blocks nerve conduction and the effects can last for several weeks or months.

In addition to medication, holding a pillow or folded blanket firmly (splinting) over your incision when coughing will control pain, allowing for a more effective and productive cough.



The Numeric Pain Rating Scale is a helpful tool you can use to describe how much pain you are feeling and to measure how well treatments are relieving your pain. You will be asked to rate your pain using a 0-to-10 pain scale. Zero means “no pain”. Ten means the “worst possible pain”.



Why is pain management so important?

Having good pain control helps you feel more comfortable. It also helps you recover faster and may reduce your risk of developing certain complications, such as pneumonia and blood clots. However, you may not be completely pain free. If your pain is well managed, it will be easier to perform necessary activities such as sitting up, walking, exercises, coughing, deep breathing, and eating.

Nausea

It is common for patients to feel sick to their stomach (nausea) after surgery. It is important to tell your nurse about it right away, so it can be treated with medication. If you have had problems with nausea in the past, the anesthesia care provider should be notified before surgery.

Dry Mouth

It is common to have dry mouth after surgery due to the breathing tube and anesthesia. Oral swabs, moistened with water, can help alleviate this. Ice chips and sips of liquids may also be provided when appropriate.

Sore Throat

You may have a sore throat from the breathing tube or the NG tube. This is normal and will resolve with time. Please notify your nurse if this is occurring.

Care Team

Surgical Team:

- **Attending Surgeon-** The attending surgeon has finished all training and is fully qualified in surgery.
- **Fellow-** A doctor who has completed their residency and chooses to complete further training in a specialty.
- **Resident-** Doctors who have completed medical school.

- **Physician Assistant (PAs)** - PAs are specially trained to provide medical services under the supervision of your surgeon. They are available 24 hours a day.
- **Medical student-** Students who have completed a four-year college degree and are enrolled in medical school, which lasts four years.

Nursing Staff:

Nurses will be at the bedside to care for you during your hospital stay.

- Nurse to Nurse bedside report is performed every shift.
- During report, your outgoing nurse will discuss with the oncoming nurse how you are doing. They will discuss the plan for the day or any test you are scheduled for during that shift. This helps us to provide consistent care.
- We encourage patients and families to listen and participate.
- Questions are welcomed and encouraged.

Patient Care Technicians (Tech):

The Patient Care Technician will assist your nurse with your daily care.

Care Management Team:

- **Nurse Case Manager** (discharge planner): Our case managers help to ensure a smooth transition between your inpatient stay and home care needs. They will visit you during your stay and arrange any medical needs you may have after discharge. You and your family will receive their contact information.
- **Social Work:** If needed, a social worker will meet with you and your family to ensure that the proper support system is in place at home to assist with your recovery. They can also help you locate available community resources near your home.

Registered Dietitian (RD):

A dietitian is available to answer questions about your dietary needs and preferences. Information about specific diets is available in the hospital.

Physical Therapist (PT):

A Physical Therapist works to maximize pain control and independence after surgery by providing education regarding mobility with post-surgical precautions. They prescribe exercises to maintain strength and range of motion.

Occupational Therapist (OT):

An Occupational Therapist treats people through the therapeutic use of everyday activities. They help patients develop, recover, and improve daily living tasks such as bathing, dressing, grooming, cognition, household, and community skills.

Phlebotomist:

Phlebotomists are people trained to draw blood from a patient. This is a common early morning occurrence during your hospital stay.

Step Down Unit

On the step down until, our team will continue to help you recover from your surgery; as well as prepare you and your family to successfully care for yourself after discharge. When you arrive to the step-down unit, your nurse and patient care technician will meet you.



They will help orient you and your family to the unit. **The step-down unit is a mixture of primarily semi-private rooms with some private rooms.** Private rooms are given to patients based on medical conditions. It is our goal to partner with you and your family to make your stay as comfortable as possible. Our staff is committed to working with you and your family to provide the best healthcare experience possible. Michigan Medicine and 4C are committed to the mission of Patient Family Centered Care (PFCC).

What type of monitoring will I need on the Stepdown Unit?

You will still need continued monitoring. When you arrive on the step-down unit a portable heart monitor, called a telemetry unit, may be attached to your chest. This unit will transmit your heart rate and rhythm to monitors located at your bedside and at the nursing station. This portable monitor allows you to walk in the halls freely.

Upwards of 21 out of 100 (21%) of people can develop a specific irregular heart rate called atrial fibrillation (afib) after thoracic surgery.

If afib occurs, it can usually be corrected with medication. Some thoracic surgery patients will go home on a type of heart medication. This is used to continue to protect your heart following surgery. After a period of time, most

people are able to discontinue it, or go back to their regular medications. Your Primary Care Physician (PCP) will regulate this medication. You should follow up with your PCP in 3-4 weeks after your surgery date.

Other types of monitoring in the step-down unit include:

- The nurses and techs will regularly check your blood pressure, heart rate, respiratory rate, pulse ox, and temperature.
- You will have your blood drawn for lab tests and chest x-rays taken if needed.
- We will measure how much you drink and urinate. We will provide a container to measure your urine. We will also ask you to keep track of the amount of fluid you drink and report it to your nurse or tech.
- You will be weighed daily in the early morning, between 4am and 7am.
- A staff member (either a nurse or tech) will enter your room to assess your needs on a regular basis.

Intensive Care Unit (ICU)

Depending on your surgery, you may require a stay in the ICU. Our goal is to move you to the step-down unit as soon as you are medically ready. The ICU will provide more specialized care and intensive monitoring.

Visitation policy:

- “Family”, for purposes of visitation, is defined by you and is usually one or more individuals who play a significant role in your life. Family members may be related in any way—biologically, legally, or emotionally. This means your family member may include a person(s) who is not legally related to the individual.
- Family members are welcome at your bedside 24 hours/day. We want you to feel supported, not only by the care we provide, but by your loved one’s presence as well. Keep in mind that you need to rest and heal. You may not feel up to entertaining a large number of people.

- At times, we may ask your family members to step out of the room if procedures or other necessary patient interventions need to be done. Your family will be welcomed back as soon as possible.
- We do encourage “Quiet Time” during the day from 1pm-3pm and 9pm-5am at night. This is a designated time dedicated to promoting your rest and healing. We may ask your family to use the lounge to visit or use their cell phones during this time.

How do I regain my independence after surgery?

The staff will partner with you and your family to achieve the skills needed for discharge. They will encourage you to do as much for yourself as you can. This independence helps you to take control of your recovery. Some people may need more of a guiding hand than others. The nursing staff will be there to assist you and reassure you as needed.

Walking

Beginning the first day after your surgery, you will have exercise goals:

- 4 walks in the hall each day.
- Up in the chair 3 times a day.

A nurse and tech will help you walk. If you are having difficulties walking, a physical therapist will evaluate you.

Begin by walking multiple times daily to build your endurance. Walk at a comfortable speed. Time yourself as you walk so you can continue to walk the same amount once you return home. Each day, add another minute to your walk. When you make it to 30 continuous minutes, increase your speed. Continue walking for 30 minutes 4-6 days a week.



**Remember to
call, don't fall!**

Repositioning

Position changes are key in preventing bed sores. The following recommendations will help you reposition yourself.

- Change body position while in bed at a minimum of every 2 hours. We will help you turn on your sides.
- Adjust the head of your bed.
- While up in chair, shift your weight every 15 minutes.
- While up in chair, stand up and return to sitting every hour. Assistance will be provided if you are unsafe to stand on your own.

Deep breathing and coughing

- Perform your deep breathing and coughing exercises every hour when awake.
- Hold a pillow or folded blanket **firmly** against your incision. This will provide support and decrease the pain you may feel when you cough.

Incentive Spirometer (IS)

- Use your breathing machine (Incentive Spirometer) 10 times every hour while you are awake. For example, if you like watching TV, you should be using your IS 2-3 times during each commercial break.
- If you do not reach the number you did before your surgery, do not get discouraged. This will improve with practice and as your body heals.
- If you start to feel dizzy or lightheaded, remove the mouthpiece from your mouth and take some normal breaths. Then continue using the IS.
- For more instructions on how to take a deep breath and cough or using your IS, please refer back to the **Preparing for Surgery** section ([page 27](#))

What will my diet be after surgery?

Depending on your surgery, you may be able to start slowly taking in ice chips and/or sips of water. Your diet will be advanced as appropriate to your surgery.

Room service is available at any time of the day. Your nurse will bring you a menu so you can choose what you would like to eat.

For additional information for your specific diet, please refer to the **Nutrition Section** ([page 95](#)) of this book.

It is not uncommon to become constipated after surgery due to inactivity and pain medication. Eating a diet rich in fiber, drinking enough fluids, walking the halls, and taking a stool softener will help your bowels move. Sometimes a suppository or laxative is needed to help this process along.

How will I care for myself while in the hospital?

- Wash your hands frequently or use hand sanitizer. Hand hygiene is very important to decrease the risk of infection.
- Bathe daily with the assistance of a staff or family member.
- Brush your teeth or perform oral care at least two times a day.

Your incisions will be observed and cared for each day. They will be kept clean and dry.

What can I expect on the day of discharge?

All the staff is here to promote, assist and educate you and your family to prepare you for discharge.

Discharge checklist

Ask a family member or friend to be available as early as 9:30am to review final discharge instructions with you and your nurse. While it may not be possible for all patients, our goal is to discharge you by 11am.

- Your nurse case manager will be in contact with you to explain your final discharge plans.

- Your nurse will review all discharge instructions with you. During this time, ask any questions you may have about your care after discharge.
- Be sure you understand:
 - Your medications and prescriptions
 - Incision care
 - Activity/restrictions
 - Diet
 - Reasons to call your doctor
 - Follow up appointment information
- If you need to have sutures removed after discharge, your nurse will give you a suture removal kit. Your nurse will tell you which sutures need to be removed and when they can be safely removed. If you are having trouble removing your sutures, please call the Thoracic Surgery Clinic.
- If you have a long drive home, it is important to get up and stretch your legs every couple hours. This helps to prevent blood clots.

Discharge Tip:

Please make sure to take home all items that you brought with you to the hospital (technology devices and chargers, home medications, glasses, dentures, and hearing aids).

Required home essentials:

- **Thermometer**
- **Scale**

At home, you will need to monitor your temperature and weight until your follow up visit. Please make sure that you have the proper equipment to do so before discharge.

Prescribed medications

When you are discharged, your nurse will provide you a medication list along with prescriptions for these medications. It is very important to know the following about all your medications:

- The name of the medication
- The times you should take it
- The dose of the medication
- The time of the last dose given
- The reason why you are taking the medication

Medications are prescribed on an individual basis. Some medications will only be necessary during your immediate recovery period and others will be needed indefinitely. When you go home, take only the medications your thoracic surgeon has prescribed for you.

Your discharge summary may be provided to your primary care physician and other specialists at the time of discharge as indicated.

Where can I get my prescriptions filled?

Your prescriptions can be filled by your home pharmacy or by the Michigan Medicine outpatient pharmacy located on the first floor of the Taubman Center. Discuss with your nurse where you will be filling your prescriptions. If you wish to fill them at the hospital, be sure to remind staff to send your prescriptions to the pharmacy the day you go home. A family member or friend must go down to pick them up for you. Prescriptions may take up to three hours to be filled. Please be prepared for this delay.

MiRxExpress is a service featuring bedside delivery of prescription medications filled at the Taubman Pharmacy discharging from the University Hospital and

the Cardiovascular Center. This service is not always available and requires a debit/credit card at the time of discharge.

Here are some Do's and Don'ts when it comes to your medications

Do's	Don'ts
<ul style="list-style-type: none">• Learn both the generic and brand names of all your drugs.• Keep a list of all your prescription and over-the-counter drugs, dosages, and purposes.• Keep this list up to date and carry it with you at all times.• Take this list to all of your appointments and show it to your healthcare providers.• Take your medications exactly as directed. Using them the wrong way can make you feel worse instead of better.• Take only what is prescribed to you.• Refill your prescriptions on time. If your prescription is running low, call your doctor for a refill.• Call your healthcare provider and pharmacist right away if you have any medication questions.• Read and save written information that comes with your prescriptions and over-the counter medications. This written information will tell you what kind of side effects may occur.	<ul style="list-style-type: none">• Don't take medications you were taking before surgery without first talking to your surgeon. This includes herbal supplements or other non-prescription drugs.• Don't stop taking your prescribed medication just because you are feeling better.• Don't stop, skip, or take an extra dose of your medication without checking with your doctor.• Don't drink alcohol while taking a medication unless your doctor says it's okay.• Don't be afraid to contact your healthcare provider or pharmacist if you have any questions!

Notes

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Incisions, Restrictions & Activity

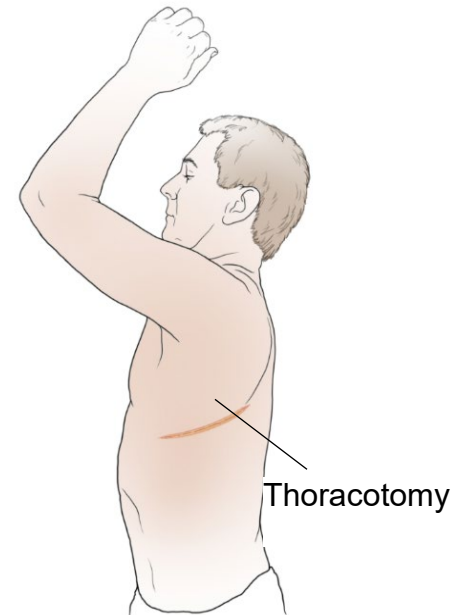
Incisions, Restrictions & Activity

As a general reference point, a gallon of milk is about 8 pounds.

Thoracotomy Incision

A thoracotomy is an incision in the chest wall between your ribs, they are typically 10-14 inches in length.

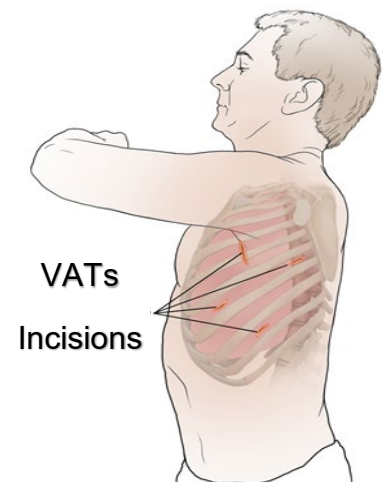
- For the first 6 weeks after a thoracotomy, do not lift, push, or pull anything with your affected arm greater than 10 pounds.
- For the following 6 weeks, or until comfortable, you are not to lift, push, or pull anything greater 20 pounds.
- If you require a pneumonectomy, it is important that you lie on the side of your thoracotomy (**good lung up**).



Thoracoscopy/Video-Assisted Thoracoscopic Surgery (VATS) Incision

Thoracoscopic incisions are small 1-2 inch incisions. A video camera is used during these procedures.

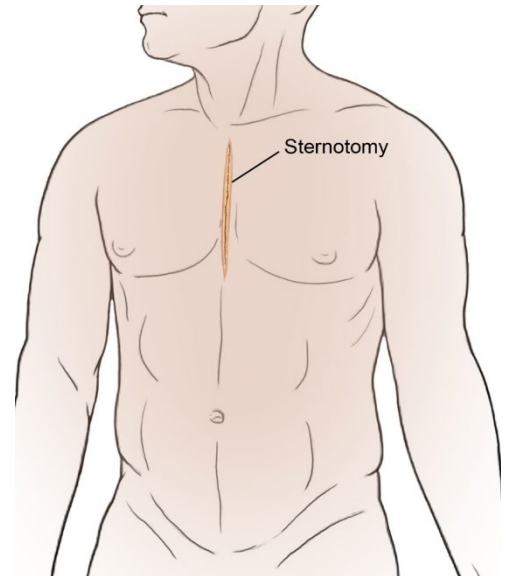
- For the first 6 weeks after a VATS surgery, do not lift anything greater than 10 pounds. You may push and pull with your arms as tolerated.



Sternotomy Incision

A sternotomy is a vertical incision made along the sternum (breastbone). Sternotomies are typically 5-7 inches in length.

- For the first 6 weeks following a sternotomy, do not lift, push, or pull anything greater than 10 pounds. Your restrictions will be addressed during your follow up clinic appointment.



When getting out of bed use the log roll technique explained in steps 1-4:

1. Lie on your back with enough room to safely roll. (**Figure 1**)



Figure 1

2. Flex your knee. (Flex left knee if getting out on right side.) (**Figure 2**)



Figure 2

3. Press your left foot into the bed and reach your left hand toward the opposite side of bed without using your arms to come to side lying on your right. (Figure 3)



Figure 3

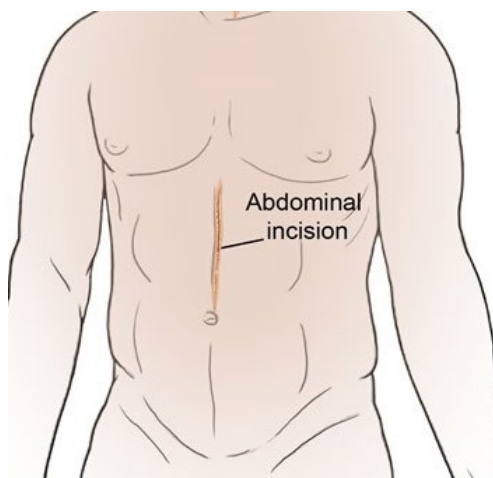
4. Push both feet off the right side of the bed and use your legs to pull yourself into a sitting position without using your arms. (Figure 4)



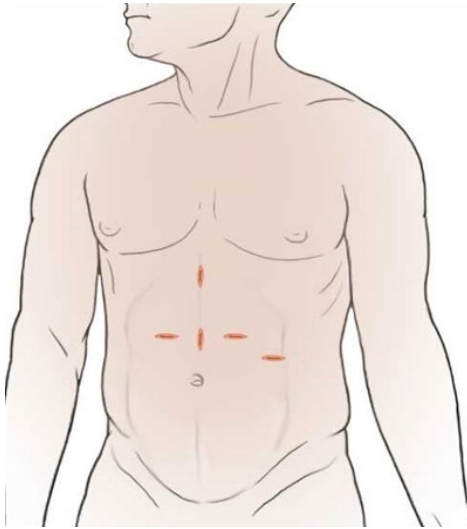
Figure 4

Abdominal Midline & Laparotomy

A midline incision is made down the center of your abdomen (belly). The length of your abdominal (belly) midline incision will depend on your body size.



A laparoscopic incision is a 1-2 inch incision on the abdomen (belly) and a video camera may be used.

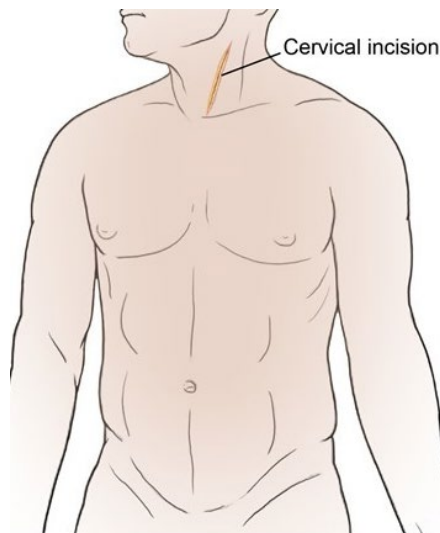


Abdominal Laparoscopic Incisions

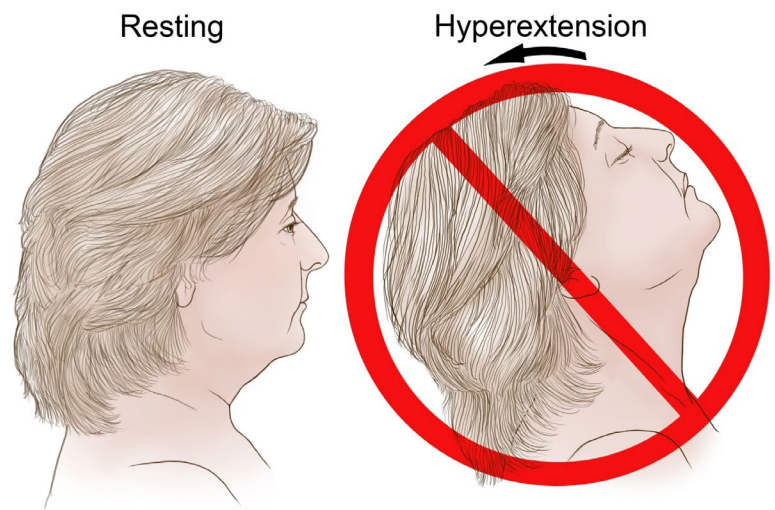
- For 6 weeks after surgeries that require abdominal (belly) midline and laparotomies, do not lift anything greater than 10 pounds. We **encourage the use of your arms** to push, pull, and stand.

Cervical (neck) Incision

A cervical incision is typically located on the left side of your neck. They are generally 4-5 inches.



- Following your cervical incision, do not lie flat or extend your neck past neutral (resting).
- Do not lie down within 30 minutes of eating or drinking.
- Use two pillows or a wedge pillow to support your neck whenever lying down. You need to continue this at home.



All restrictions will be addressed at your follow up appointment in the Thoracic Surgery Clinic.

Physical therapy exercises for thoracic surgery

You may begin these exercises after your surgery.

- Complete the exercises in a sitting position.
- Sit upright looking straight ahead with your chin tucked and shoulders pulled back.
- Make sure that you are relaxed and rested before starting.
- It is important you begin these exercises the day after your surgery and do them daily during your recovery.
- Perform the exercises **twice** a day. Repeat each exercise **10** times.

These exercises are not intended to be a difficult workout. They will speed your recovery and prevent pain from developing in your shoulders and trunk. They will also help you with your breathing.

1. **Shoulder Shrugs** - Bring your shoulders up to your ears, then relax your shoulders down. Repeat. (Figure 1)



Figure 1

2. **Shoulder Circles** - Sitting upright, roll your shoulders in a smooth motion up, back and down in a circle. Repeat then reverse direction. (Figure 2)



Figure 2

3. **Trunk Twists** - Slowly rotate your trunk to the right, looking over your shoulder. Hold and stretch. Then rotate your trunk to the left, hold and stretch. Repeat sequence. (Figure 3)



Figure 3

4. Trunk Side bending - Hold your arms relaxed at your sides and maintain your trunk upright. Lean to your right side slowly. Hold and stretch. Then lean to your left side, hold and stretch. Repeat sequence.

(Figure 4)



Figure 4

5. Chest Stretch - Place your hands behind your head while sitting upright. Move your elbows back until you feel a stretch, hold. Relax elbows forward to rest, then repeat. (Figure 5)



Figure 5

6. Forward Arm Raise - Sitting with upright posture, straighten your arm with your thumb facing up. Raise your arm up to the front over your head. Your elbow should be next to your ear. Repeat with your other arm.

(Figure 6)



Figure 6

7. Out, Up and Over - Hold your arm straight out to your side with your thumb up. Raise your arm up to the side over your head, hold and stretch. Repeat with your other arm. (**Figure 7**)



Figure 7

8. Backward Reach - With your arms relaxed at your side, elbows straight, reach your arms straight backwards. Hold and stretch. Then repeat. (**Figure 8**)



Figure 8

9. Hands behind your back and reach - Grasp your hands together behind the small of your back. Slowly lift your hands off your back. Hold and stretch. Then repeat. (**Figure 9**)



Figure 9

10. Ankle Pumps - Move your ankle up and down (like pressing and releasing a gas pedal). You may perform this exercise sitting or lying down. (**Figure 10**)



Figure 10

11. Leg kicks - Sitting with upright posture in a chair or in bed, kick your leg out straight and **slowly**. Hold for 3 seconds, then repeat with the other leg. (**Figure 11**)

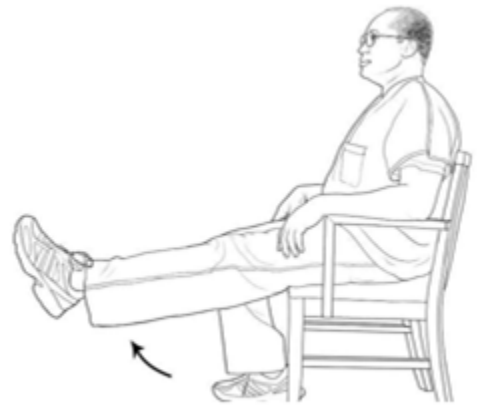


Figure 11

12. Seated marching - Sitting with upright posture in a chair, lift your knee up towards the ceiling without leaning backwards. Repeat with the other leg. (**Figure 12**)



Figure 12

13. Coughing and Breathing Exercises: Remember to use your incentive spirometer 10 times per hour when you are awake. You may use a pillow or blanket to hold over your incision when you cough. This will provide support and decrease pain. (**Figure 13**)



Figure 13

Occupational Therapy for Thoracic Surgery

Activities of daily living

Tasks performed by people in a typical day that allow independent living. Basic activities of daily living (BADL) include feeding, dressing, hygiene, and mobility. Instrumental activities of daily living (IADL) include more advanced skills such as managing personal finances, using transportation, telephoning, cooking, performing household chores, doing laundry, and shopping.

Bathing and dressing

- You have no restrictions on showering except to not soak your incision and to shower with warm, but not hot, water.
- No baths until precautions are cleared due to likely pushing with arms to stand from tub.
- Have someone stand close by during your first couple showers to ensure that you are safe.
- If you feel unsteady or fatigued during a shower, consider sitting to shower. Your Occupational Therapist can recommend an appropriate shower chair.
- Gently cleanse the incision with soap and water, no scrubbing. Only use products on your incision that your doctor has approved.
- Shampoo, rinse, and dry your hair by reaching both hands to your head as you normally would.
- Women with C cup or larger bra size should consider wearing a supportive bra immediately after surgery to decrease incisional pain. Recommended bras should have clasps in the front for ease of access and should have a larger circumference than normal size; an example would be if normal bra size is 34C purchase a 38C. Studies have shown that women with larger bra sizes are associated with an increased risk of incisional infection due to the pull of the large breast size.
- To put on socks and shoes, sit when doing lower body dressing. Lift one leg and place your ankle onto the opposite knee or place your foot on a foot

stool or the edge of the bed for support. Reach forward and slip on your sock or shoe as you normally would. To remove your socks or shoes, use the same method or briefly bend over from a sitting position.

- You have no restrictions when putting on shirts. This may be a little uncomfortable at first, but this does provide a nice stretch to your chest muscles!

Personal Hygiene

After using the toilet, clean by reaching through your legs and wiping front to back.

Oral care/Hair care:

Raise your arms as you normally would to brush your teeth and hair; take rest breaks if you feel fatigued.

Sexual activity:

For information, please refer to the **After You Leave the Hospital** section ([page 115](#)) of this book.

Instrumental Activities of Daily Living (IADLs): until your precautions are lifted

- Have someone else do chores such as vacuuming, mopping, and yard work.
- Do not lift anything that weighs more than 10 pounds. This includes groceries, laundry, furniture, pets, or children.
- Do not open stuck windows, tight jars, or heavy doors.

Four Ways to Save Energy

1. Pace. Stop to take a rest before you get fatigued. It is easier to recover your energy if you are not totally fatigued. Practice abdominal breathing during rest break. Inhale through your nose while expanding your belly and exhale through your mouth while relaxing your belly.

2. Plan. Develop a complete mental plan before performing an activity.

Remember to include all the details and how much time and energy is required to perform the activity as well as what equipment and materials will be needed.

3. Prioritize. When you have several things to accomplish, make a list and decide what is most important and what can be postponed. Use your energy to perform the most important task first. Then perform the rest of your list as your energy allows. This will allow you to lower your stress level, because you will not waste energy worrying about the things that have not been accomplished.

4. Position. Store items between your eye and hip level. It requires more energy to reach overhead and to stoop below your hips to reach items. Store items where you use them the most. For example: paper and pencil by the phone, reading material within reach of your reading chair, frequently used items on the countertop instead of the cupboard or drawers

Hand strengthening and edema management

- Typically, after heart surgery your arms/hands may have edema (swelling).
- Keep arms elevated above the level of your heart when sitting or lying down by placing pillows under your arms.
- Perform the exercises included in this handout as instructed by your Occupational Therapist.
- If your edema does not decrease your Occupational Therapist can provide you with a compression glove to help reduce your edema further.

Wrist Flexion/Extension

Lift your fingers toward the ceiling, bending at the wrist. Keep your forearm and elbow still at your side. Lower your fingers to point toward the floor. Perform the exercises 2-3 times a day. Repeat each exercise 10 times. (Figure 1)

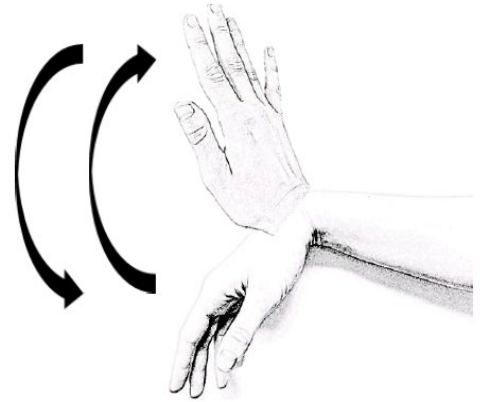


Figure 1

Finger Flexion/Extension

Begin with your elbow at your side with a 90-degree angle. Start with your fingers in an open position. Slowly curl fingers in to create a fist and hold. Straighten your fingers back into an open position. Perform the exercises 2-3 times a day. Repeat each exercise 10 times. (Figure 2)

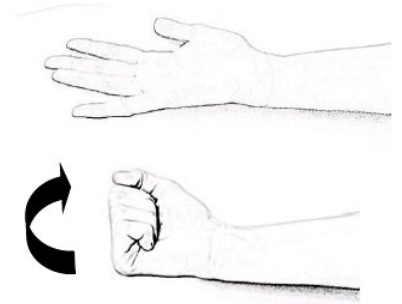


Figure 2

Finger Opposition

Start with your fingers in an open position. Slowly touch the tip of your thumb to each of your other fingers. Hold the tip of your thumb to the tip of each finger for 2-3 seconds. Straighten your fingers back into an open position. Perform the exercises 2-3 times a day. Repeat each exercise 10 times. (Figure 3)



Figure 3

Foam Block

You may be given a foam block by your occupational therapist to assist with swelling and strengthening exercises.

Perform the exercises **4-5** times a day. Repeat each exercise **15-20** times for each hand. (**Figure 4**)



Figure 4

[illegible]

Nutrition

Nutrition

General Nutrition Information Following Thoracic Surgery:

Right after surgery, you will be limited to nothing by mouth (NPO) or ice chips. You will be monitored for signs and symptoms of nausea and your diet will be advanced depending upon your surgery. When a diet order has been placed you will receive the appropriate room service menu. Room service is available 24 hours per day with a limited menu at night. When you are ready to order, call the number on your menu to select your items. Please note that it can take up to 45-60 minutes for food to be delivered.

Most people will be started on clear liquids (such as fruit juice, broth, popsicles, etc.) then advanced as tolerated to a general diet. Because you just had surgery, it is important to try and eat to the best of your ability to aid in healing.

- Try to include sources of protein with each of your meals. Protein is especially important for people with large incisions.
 - Good sources of protein include: meat, fish, eggs, nuts/seeds, legumes, yogurt, milk, cottage cheese, quinoa, etc.
- Aim for a variety of fruits and vegetables without added salt or fats.
- Choose whole grains such as whole wheat bread, brown rice, or oatmeal over refined carbohydrates for the added benefit of fiber.

Poor appetite and nausea are common following surgery. However, it is still important to keep your nutrition up. Here are some tips for increasing your nutritional intake with poor appetite or nausea:

- Try eating smaller, more frequent meals and snacks to help stimulate appetite.
- Keep snacks on hand and take bites of food every couple of minutes while watching TV.
- Think of food like medicine: schedule time to eat meals and snacks.

- Drink protein supplements in between meals to aid your calorie and protein intake. Protein shakes are available to you during admission if you need them.
- With nausea, aim for bland foods such as breads, rice, mashed potatoes, crackers, cooked vegetables, applesauce. Room temperature foods may also be beneficial.
- Add cheeses, peanut butter, ice cream, cooked eggs, and sauces to meals or snacks for extra calories.
- Ask for anti-nausea medications as needed.

If you need help or want information on eating after surgery, a **Registered Dietitian (RD)** can assist you while you are admitted.

Nutrition Following Hiatal Hernia, Myotomy, Diverticulectomy, and Nissen Fundoplication:

Right after surgery, you will be limited to nothing by mouth (NPO) or occasional ice chips. You will be monitored for signs and symptoms of nausea and your diet will be advanced depending upon your surgery. When a diet order has been placed you will receive the appropriate room service menu. Room service is available 24 hours per day with a limited menu at night. When you are ready to order, call the number on your menu to select your items. Please note that it can take up to 45-60 minutes for food to be delivered.

It is recommended that you aim for 4-6 smaller, more frequent meals and snacks to optimize intake. Include good sources of protein with each of your meals to aid in healing after surgery. If your appetite is poor, adding protein shakes in between meals can help boost your calorie and protein intake.

Nutritional supplements are available in the hospital if you need them. It is also important to **avoid carbonated beverages** including pop, beer, champagne, and sparkling beverages until instructed otherwise.

A **Registered Dietitian** (RD) will provide you with diet education before your discharge, including which diets to follow and for how long you will be on each diet. Possible diets that you will be on include the following:

Clear Liquids:

- Grape, cranberry, or apple juice
- Coffee, tea, clear broth
- Popsicles, lemon ice, gelatin, sugar

Full Liquids:

- Dairy products (milk, smooth yogurt, pudding, milk alternatives, cream, butter, smooth ice cream, custard)
- Smooth, cream-based soups (no chewable pieces)
- Refined/strained cooked cereals (cream of wheat)
- All fruit and vegetable juices
- High calorie, high protein oral supplements

Mushy Soft:

- Food should be soft, moist, easy to chew, and easy to swallow
- Chew your food thoroughly before swallowing
- Cooked cereals, mashed potatoes, cooked noodles, softened/mushy cereal
- Well-cooked or pureed vegetables
- Fruit juices, canned fruits, soft fresh fruits (ripe bananas, melons, berries, peeled apples, etc.)
- Any dairy products (milk, yogurt, cheese, cottage cheese, smooth ice cream/milkshakes, pudding, cream cheese)
- Eggs, tender, chopped poultry with sauce, crumbled ground beef/turkey, moist fish, tofu
- Soups, sauces, mild seasonings, gravy, condiments

- Avoid dry or hard foods such as breads, toast, bagels, crackers, tough meats, raw vegetables, fruits with tough skins, and nuts/seeds

These diets help minimize irritation on the esophagus. You will receive the RD's contact information for questions after discharge.

Nutrition Information Following an Esophagectomy:

Oral intake:

In the immediate postoperative phase, you will be limited to nothing by mouth (NPO) or ice chips. You will be monitored for signs and symptoms of nausea and your diet will be advanced slowly following surgery. You may not be able to take much by mouth for a couple of days (you will be receiving tube feeds to help with your nutrition; see **Tube Feed** information (page 100) for more information).

Generally, people are started on clear liquids then advanced to a full liquid diet and finally a soft, mushy diet (all diets are reviewed below). Your specific diet progression may be different depending on your hospital course and surgeon preference. When a diet order has been placed you will receive the appropriate room service menu. Room service is available 24 hours per day with a limited menu at night. When you are ready to order, call the number on your menu to select your items. Please note that it can take up to 45-60 minutes for food to be delivered.

It is recommended that you aim for 6-8 smaller, more frequent meals and snacks to optimize intake. After surgery, you will not be able to eat as much in one sitting since your stomach is much smaller than it was previously. Some people may only be able to tolerate 1-1.5 cups of food for each meal. This makes it important to optimize your intake by aiming for foods high in protein and calories. Nutritional supplements are a good way to help aid your intake

and are available during your hospital stay if you need them. Try to eat slowly and chew your food well especially when you first start eating after surgery.

You will need to **avoid carbonated beverages** including pop, beer, champagne, and sparkling beverages until instructed otherwise.

While eating or drinking be sure to sit upright in a chair. You must remain upright for at least 30 minutes after eating or drinking. This will prevent regurgitation (stomach contents coming back up).

A **Registered Dietitian** (RD) will provide you with diet education before your discharge. This will include information on estimated energy/protein needs, diet modifications, and dumping syndrome (information for which can be found after the **Tube Feed** information (page 100). RD contact information will also be provided for questions you have after discharge.

Possible diets that you will be on during your hospital stay include the following:

Clear Liquids:

- Grape, cranberry, or apple juice (suggest to start with diluted fruit juices)
- Coffee, tea, clear broth
- Popsicles, lemon ice, gelatin, sugar packet

Full Liquids:

- Dairy products (milk*, smooth yogurt*, pudding, milk alternatives, cream, butter, smooth ice cream, custard)
- Smooth, cream based soups (no chewable pieces)
- Refined/strained cooked cereals (cream of wheat)
- All fruit and vegetable juices
- High calorie, high protein oral supplements*

Mushy Soft:

- Food should be soft, moist, easy to chew, and easy to swallow
- Chew your food thoroughly before swallowing
- Cooked cereals, mashed potatoes, cooked noodles, softened/mushy cereal
- Well-cooked or pureed vegetables
- Fruit juices, canned fruits, soft fresh fruits (ripe bananas, melons, berries, peeled apples, etc.)
- Any dairy products (milk*, yogurt*, cheese*, cottage cheese*, smooth ice cream/milkshakes, pudding, cream cheese)
- Eggs*, tender, chopped poultry* with sauce, crumbled ground beef/turkey*, moist fish*, tofu*
- Soups, sauces, mild seasonings, gravy, condiments
- Avoid dry or hard foods such as breads, toast, bagels, crackers, tough meats, raw vegetables, fruits with tough skins, and nuts/seeds

*Indicates a high protein food

Tube Feed Information:

During the surgery for an esophagectomy, surgeons place what is called a jejunostomy (J-tube) feeding tube. You will receive tube feeds (liquid form of nourishment) through this tube during your hospital admission. Tube feeds generally start around postoperative day 3 but this may change based on your individualized pathway. A RD will do a nutrition assessment in order to provide tube feeds recommendations.

- Tube feeds will start slowly and advance to goal as tolerated over the course of a couple days
 - Severe abdominal pain, cramping, excessive diarrhea, etc. are signs that you are not tolerating the tube feeding formula.
 - Loose stools may be a result of bowel regimens, antibiotics, and other medications; not necessarily the tube feeds.

- If excess diarrhea continues even after medications changes, you may be prescribed fiber supplements or your tube feed formula may be altered.
 - Tube feeds may start to run overnight once your diet is advanced to help promote oral intake during the day.
- You may be prescribed an extra protein supplement through your feeding tube to help meet your protein needs.
- If there are complications from your surgery that prevent your diet from advancing, you may go home on tube feeds to ensure that you receive the necessary calories and protein for healing.
 - If you are tolerating your tube feeds at the goal rate, your tube feed regimen may begin to be cycled. Cycling means that you will get greater amounts of tube feed in a shorter amount of time in order to decrease the amount of time that you are connected to the feeding pump. This allows greater flexibility in continuing everyday activities at home.
- The majority of esophagectomy patients will keep their feeding tube until their follow up in clinic with the surgeon (even if you do not go home on tube feeds).
 - Based on your weight and oral intake, the feeding tube will be removed.
 - If your weight is down from poor oral intake, you may be re-started on tube feeds to help meet your calorie and protein needs.

J-tube Care:

- No tub baths, swimming or hot tubs while J-tube is present. Your surgeon will discuss resuming tub baths at the time of your follow-up appointment.
- Change the dressing every 1-2 days or after a shower using the following steps:
 1. Wash your hands.

2. Remove old dressing.
3. Clean around tube with a clean, single-use wash cloth, mild soap, and water.
4. Rinse well and pat dry with a clean towel.
5. If a dressing is required, apply new clean dressing. Be careful not to kink (bend) your J-tube.
6. If there is no drainage around the tube, you do not need a dressing.

Continue to clean tube site daily with mild soap and water.

- Change the extension tubing every 7 days.

J-tube Flushes:

- Before starting tube feeds (TF) or giving medications via the tube, please flush with 30cc of water to make sure it is not clogged.
- After completing TF or medication, flush tube with water again to ensure the tube is free of TF or medication.
- If no tube feeds are required, please flush tube with 30cc of water two times per day to keep the line open. You may use tap water if it is at room temperature.

Diet for control of dumping syndrome

****This diet is intended to be followed *only* if you develop symptoms of dumping syndrome****

Symptoms of dumping syndrome:

- Abdominal pain
- Diarrhea
- Bloating
- Nausea
- Weakness
- Sweating

- Fast heart rate

These can occur within 15-60 minutes after eating and are caused when food from the stomach (especially sugar) passes too quickly into the intestines.

- Later symptoms can occur 1-3 hours after a meal and include sweating, hunger, weakness, and confusion.

Guidelines for controlling dumping:

- When you have symptoms of dumping syndrome, avoid foods that are high in sugar, they are not tolerated well. They include:

Brown and white sugar	Lemonade
Candy	Molasses and sorghum
Honey and syrup	Popsicles
Ice cream and sherbet	Regular carbonated beverages
Jam and jelly	Sweetened cereals
Gelatin	Sweetened juices
Large amounts of fruit juice	Sweet desserts
Raw fruits	Dried fruits

You can use foods such as: Sugar free gelatin and sugar substitute.

- Avoid drinking liquids with meals. This can cause food to enter the intestines too quickly causing symptoms of dumping.
- Drink liquids at least 30 minutes **before or after** a meal, not with meals.

Examples of liquids are:

Broth	Milks
Coffee	Soup
Sugar free gelatin	Tea
Ice	Water
Juice	Low calorie drinks

- At times, certain individual foods may be difficult to tolerate. **If they bother you, do not use them.** These foods include:

Alcohol	Raw fruits or vegetables
Coffee	Smoked foods
Fried foods	Spicy foods

- Very hot/cold foods sometimes can cause symptoms.
- Eating rapidly may cause symptoms.
- Continue to eat 6 small meals per day.
- With each meal include a source of protein. Protein foods include: Milk, yogurt, cheese, cottage cheese, eggs, peanut butter, meat, fish, and poultry.
- Choose a variety of foods from different food groups.

When you no longer have symptoms:

You may make changes in your diet one at a time.

- Slowly increase the size of your meals.
- Slowly add unsweetened beverages to your meals (about 4 ounces at a time).
- Slowly add small amounts of foods that contain sugar back into your diet.
- If any of these changes cause symptoms to reappear, discontinue them for another few weeks then try again.

After You Leave the Hospital

After You Leave the Hospital

Monitoring my health and when I should call

What steps should I take to monitor my health at home?

- Take your temperature each morning before eating or drinking and at any time you think you may have a fever. Keep a record of your daily temperature.
- Weigh yourself at the same time each morning, after you urinate but before you eat breakfast. Use the same scale every day. Keep a record of your daily weight.
- Monitor your incisions daily for signs of infection (increasing redness, tenderness, swelling, warmth or drainage).
- Follow your discharge medication list, this is your most up to date list to provide to other health care providers at follow up.

Everyone recovers from an operation at a different pace.

When should I call for help?

Call Thoracic Surgery if you develop any of the following signs and symptoms:

- Under the tongue temperature above 101.5° F
- Bleeding, redness, swelling, increased pain or foul-smelling drainage near your incision site
- Incisions that open after you leave the hospital
- Increased shortness of breath/difficulty breathing
- Trouble urinating
- Nausea, vomiting or diarrhea
- Stomach pain or bloating
- Chills or excessive sweating
- A vague feeling that something is wrong

What is the number to call?

- Monday through Friday from 8am-5pm: **Call (734) 936-8857**. Ask to speak to the Thoracic Surgery Nurse if you have any of the signs or symptoms above.
- After 5pm or on weekends or holidays: **Call (734) 936-6267**. Ask to speak with the Thoracic Surgery on call.

When do I need to seek emergency care?

Call 9-1-1 immediately if you develop:

- Sudden onset of chest pain
- Shortness of breath not relieved by rest
- If your legs feel numb, tingly, cold or look blue
- You believe you are experiencing a true emergency.
- Any of the symptoms of Deep Vein Thrombosis, Pulmonary Embolism, or Stroke as listed below.

What is a deep vein thrombosis (DVT)?

A DVT is a blood clot that occurs in a deep vein usually in the calf or lower thigh. DVTs can move from their original location and move throughout the body. If a DVT moves to the brain, this can cause a stroke. If a DVT moves to the lungs, it can cause a pulmonary embolism (PE).

Common Signs and Symptoms of a DVT

People with DVTs may experience some or all of the following symptoms in the leg or arm where the blood clot is located:

- Pain or tenderness
- Swelling
- Redness or blueness of skin
- Warmer than normal skin



What can I do to prevent a DVT?

- Walk frequently
- Avoid sitting or long car rides without standing up and moving around every few hours

What is a pulmonary embolism (PE)?

A PE is a blood clot that occurs in the lung. PEs are often caused by a deep vein thrombosis.

Common Signs and Symptoms of a PE

- Sudden short of breath.
- Chest pain or discomfort that worsens when you take a deep breath or when you cough.
- Feeling lightheaded or dizzy, or fainting.
- Rapid heart rate.
- Coughing up bright red blood.

What is stroke?

A stroke, sometimes called a brain attack, occurs when a clot blocks the blood supply or blood vessels burst. It is the fifth leading cause of death and the leading cause of adult disability. Damage from stroke can affect the entire body resulting in mild to severe disabilities including the inability to move your arm, leg or both, and problems with thinking, speaking, swallowing, and emotions.

Am I at risk for a stroke?

A stroke comes on suddenly and can happen to anyone at any time. As you age, your chances of suffering a stroke increase, but even children, teenagers, and pregnant women can suffer a stroke.

People who have heart disease, high blood pressure, prior stroke or recent surgery are at greater risk for having a stroke. African Americans, Alaska Natives, American Indians, and Hispanic adults are also at greater risk.

Common Signs of Stroke:

Remember the acronym FAST:

Face drooping - Does one side of the face droop or is it numb? Ask the person to smile.

Arm weakness - Is one arm weak or numb? Ask the person to raise both arms. Does one arm drift downward?

Speech difficulty - Is speech slurred, are they unable to speak, or are they hard to understand? Ask the person to

repeat a simple sentence, like “the sky is blue.” Is the sentence repeated correctly?

Time to Call 9-1-1 - If the person shows **any** of these symptoms, even if the symptoms go away, call 9-1-1 and get them to the hospital immediately.



In addition to FAST, other symptoms you should know:

- Sudden confusion or trouble speaking or understanding others
- Sudden trouble seeing in one or both eyes
- Sudden numbness or weakness of the face, arm, or leg, **usually on one side of your body**
- Sudden trouble walking, dizziness, or loss of balance or coordination
- Sudden or severe headache with no known cause

Why is stroke an emergency?

Every minute counts. The longer blood flow is cut off to the brain, the greater the damage. The treatments for stroke must occur within a few hours.

If you think that you or someone you know is having a stroke or you are unsure call 9-1-1 immediately.

What can I do to prevent a stroke?

Leading a healthy lifestyle can decrease your chances of stroke. Here are the action steps you can take to reduce your risk:

- Eat a healthy diet
- Exercise
- Keep your blood pressure, blood sugar, and cholesterol under good control
- Limit alcohol and stop smoking
- Stop recreational drug use

Talk to your doctor or nurse about what you can do to prevent strokes.

Instructions for Caring for Yourself at Home

Resuming Activities after your surgery

What are my activity restrictions?

- ☒ Do not lift any objects over 10 pounds after surgery until postoperative appointment. As a reference, a gallon of milk weighs about 8 pounds.
- ☒ Do not push or pull heavy objects such as a vacuum cleaner, lawn mower or furniture.
- ☒ Do not drive or operate heavy machinery while you are on narcotics (opioids).

What activities should I do?

- ✓ Use your breathing machine four times a day (ten breaths each time) until you return for your clinic visit.

- ✓ Walk every day (find an indoor setting during bad weather).
- ✓ You may climb stairs - limit the number of times until you are feeling well.
- ✓ Continue with the mobility exercises you received and the ones and demonstrated by physical therapy in the hospital.

How do I care for my incisions?

- Shower or sponge bathe every day. Do not soak in a bathtub or get into a swimming pool until seen in clinic follow up.
- Allow the water to hit your back and roll over your shoulders.
- Wash your incision with your usual bath soap and water. Pat dry and leave open to air. Use a clean towel each time you shower.
- Do not put any creams, lotions, powders or ointments on your incision until your incision is completely healed.
- If steri-strips are in place, you can remove them a week after discharge.
- If skin glue is present it will fall off on own, do not pick at it.
- You may have a clear mesh adhesive dressing over your incision (Prineo). This will remain in place until your follow up appointment in the Thoracic Surgery Clinic. Do not scratch, rub, or pick at the adhesive dressing, and do not apply topical ointments or lotions to the incision while the dressing is in place. This dressing will be removed at your follow up appointment in the Thoracic Surgery Clinic. On the day prior to your appointment, please apply petroleum jelly (i.e. Vaseline) over the dressing. This will aid in removal of the dressing at your appointment.
- If you are sent home with suture(s) in place, a suture removal kit will be provided. You will be told the date that is safe to remove the suture(s).
If you are having a difficult time removing the suture(s), please contact the Thoracic Surgery clinic at (734) 936-8857.

Pain Management

Using acetaminophen and ibuprofen can help you manage your pain and weaning off (gradually stop taking) your narcotics (opioids). Please discuss with your surgical team if acetaminophen and ibuprofen are appropriate for you. You should begin to wean yourself off of pain medication following discharge.

This is a typical schedule to begin to wean off your pain medication:

- Take 1-2 pills every 4-6 hours as needed for pain.
- Follow with 1-2 pills every 6-8 hours as needed for pain.
- Follow with 1 pill every 4-6 hours as needed for pain.
- Follow with 1 pill every 8 hours as needed for pain or until no longer needed.

Please note that we are unable to refill pain medication prescriptions by telephone on nights, weekends and off-hours. Please plan accordingly.

Opioids are an addictive substance. Individuals with mental illness and substance abuse disorders may have an increased risk of addiction.

- Do not mix opioids with anti-anxiety or sleep medications, alcohol, muscle relaxants or other drugs with depressive properties as this may cause serious health risks including death or disability.
- Pregnant individuals or those of reproductive age carry a higher risk of short and long term effects of opioids, including neonatal withdrawal for the infant.
- Proper disposal of expired, unused or unwanted controlled substances may be done through community take back programs, local pharmacies, or law enforcement agencies and has been shown to reduce injury and death to family members. If a take-back program is not available in your area visit <http://michmed.org/MmA6N> to learn how to properly dispose of medications.

- It is a felony to illegally deliver, distribute or share a controlled substance without a prescription properly issued by a licensed health care prescriber. Additional information regarding drug safety and usage may be found in the patient counseling section of the drug label.

If you have questions about weaning your pain medicine, please call the thoracic surgery clinic (734) 936-8857.

More information about safe opioid use is available online at <http://careguides.med.umich.edu/subject/opioid-analgesics>

Returning to work and everyday activities

At your first clinic appointment following your discharge from the hospital, your surgeon will be able to give an approximate date for your return to work. Everyone recovers from an operation at a different pace. Your first priority is to take care of yourself and recover completely.

Household chores

We encourage you to do light household activities in the four weeks following surgery. These activities include:

- Dusting
- Meal preparation
- Washing clothes with an automatic washer and dryer (avoid lifting a heavy laundry basket)
- Washing dishes.

Pace yourself and gradually increase the amount of activity as your energy builds.

Sexual activity

It is normal for both partners to be worried about resuming sexual activity after thoracic surgery. Most people worry about sexual intercourse because they are afraid it may cause discomfort or strain. The effort needed to perform sexual intercourse is similar to climbing stairs or walking around the block at a brisk pace. If these activities are not difficult for you, you may resume sexual activities whenever you feel ready. Your best indicator is how you feel—both physically and mentally. Some medications may interfere with sexual functioning. If you have any problems, discuss them with your surgeon.

Some general guidelines to help you resume sexual activities include:

- For the first 6 weeks, avoid positions that cause pressure or tension in your arms and chest.
- Pick a time when you are content, relaxed, and happy.
- Wait 2 hours after eating a full meal or drinking alcohol.
- Remember that it is normal for your breathing and heart rate to increase during sex and that these should return to normal shortly afterward. If you experience shortness of breath, chest pain and/or palpitations, stop and rest.
- Let your doctor know if you experience any abnormal symptoms.

What can I expect when I get home?

- Difficulty sleeping
- Lack of appetite
- Postoperative constipation
- Feelings of depression or mood changes

Difficulty sleeping

Many people complain of having trouble sleeping for some time after surgery. You may experience insomnia (an inability to sleep) because of:

- The effects of anesthesia
- Discomfort related to healing
- Changes in your daily routine
- Stress from personal concerns

You should return to normal sleeping patterns within 2-3 weeks.

Try these tips to help you sleep:

Make sure you take enough rest breaks in between your normal daily activities, avoid a nap longer than 15 to 20 minutes during the day.

- If you have pain, take your pain medication about 30 minutes before bedtime.
- Arrange the pillows so you can maintain a comfortable position and decrease muscle strain.
- If you feel anxious or nervous, talk to your spouse, partner, or a trusted friend. Get your troubles off your mind.
- Avoid caffeine in the evenings (such as chocolate, coffee, tea, and colas).
- Listen to relaxing music or a guided imagery audio program.
- Ask your partner to give you a back rub.
- Take a relaxing shower.
- Follow a bedtime routine. Follow the same rituals to let your body know it is time to relax and get to sleep.
- It is okay to sleep on your back or side. You will not hurt your incisions.

Night sweats

- People often complain of night sweats for the first few weeks.
- If you experience this, check your temperature to make sure you do not have a fever. If your temperature is 101.5° F or greater, call the thoracic clinic.

Lack of appetite

You may notice after surgery you have lost your appetite for food or just feel too tired to eat. This is very common so be patient.

We suggest you try eating frequent, small meals throughout the day. You do need **proper nutrition** to enable your body to heal and get stronger.

Postoperative constipation

- Constipation is a common side effect after your operation. Several factors may contribute to constipation after surgery including: decreased activity, pain medication, or changes to your diet.
- It may help to increase your activity and eat more fresh fruits, vegetables and high fiber foods.
- You should continue to take a stool softener such as Colace® while taking pain medication (opioids). A laxative such as Psyllium (Metamucil®) or Polyethylene glycol (Miralax®) may also be helpful.
- Start walking around as soon as you can and increase the distance.

The emotional aspects of recovery: feelings of depression or mood changes

Recovering from surgery also involves your emotional healing. The recovery process uses emotional and physical energy. If you feel upset or emotional in the days and weeks after your operation, don't worry - this is a perfectly normal reaction which many patients experience. Many people report these feelings after their operation.

It is common for people who have had surgery to:

- Experience mood swings
- Feel depressed or gloomy
- Cry easily for no apparent reason
- Feel afraid, nervous or anxious

- Feel helpless
- Feel lonely
- Lack energy or motivation
- Get easily frustrated
- Be irritable or angry
- Not be unable to concentrate
- Have good days and bad days
- Feel more emotional or sentimental than normal



If you have thoughts of hurting yourself or someone else, be sure to call your primary care doctor or contact the National Suicide Prevention (800) 273-8255.

How do I handle my emotions after I get home?

Once you are home, even though you may feel drained physically and emotionally, it is important you follow guidelines for good self-care.

Here are some things you can do to help yourself recover:

- Get dressed every day.
- Walk daily within your limits.
- Get plenty of rest.
- Resume hobbies and social activities you enjoy.
- Visit with others.
- Ensure you have a support system in place that can help with your physical and emotional needs. Discussing your fears, frustrations, pain, concerns and successes with someone is an important part of the healing process.
- Join a support group.



As you resume your normal activities, you will notice gradual improvements in your mood and outlook.

Call your Primary Care Doctor if:

- You are feeling sad, hopeless, fatigued, irritable or lonely most days following your surgery. These could be signs of depression.
- A lack of sleep is causing problems for you such as an inability to participate in your recovery or an inability to stay awake during the day.
- Normal sleep patterns have not returned within 2-3 weeks after surgery.

Emotional impact on family and friends

Thoracic surgery is stressful for all people involved, not just the patient. Family and friends have the extra responsibilities of the caring role, as well as juggling the home and work life. Sometimes, patient needs are greater than anticipated and can lead to stress.

Your family and friends need to balance their own feelings while trying to support your recovery. It is important for your family and friends to take care of themselves physically and emotionally.

Strategies for family and friends

If you're a family member or friend, here are some tips:

- Don't neglect your own needs. Eat well, stay active and get plenty of rest.
- Be patient- it is not unusual for your loved one to have good and bad days.
- Share your feelings with a close friend.
- Ask for help if you feel overwhelmed. Be specific about your needs such as meals, chores, pet-sitting, time alone, etc.
- Talk to your family doctor if you have feelings that are concerning.
- Do something you enjoy and find relaxing.

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Promoting a Healthy Lifestyle

Promoting a Healthy Lifestyle

Your lifestyle and eating habits influence how your heart and body work and how you feel overall. Below are some tips to get you started on the path to better health.

The **single** most important thing you can do for your health is to **stop smoking**.

Dangers of smoking:

- Decreases the oxygen supply to your body
- Increases mucus
- Increases shortness of breath
- Can lead to longer intubation time
- Increases coughing
- Can lead to decreased wound healing.
- Increases heart rate and blood pressure.
- Can contribute to problems with heart rhythm.

You must decide to quit smoking. No one else can make you stop.

- You can gradually eliminate cigarettes or stop all at once.

Here are some tips to help:

- Set a date to quit.
- Get support from family and friends.
- Get support from your health care providers. For example, your primary care doctor can sometimes prescribe medications that will aid you in your efforts to quit.
- Use substitutes – sugarless candy, crafts or even a short straw that you hold in your hand.
- Avoid using high fat, high calorie foods for substitutes.

- You will be referred to a smoking cessation program. Call the UM Tobacco Consultation Service for help **(734) 998-6222**. The Michigan Tobacco Quitline **(800) 784-8669** is free to Michigan residents.

Blood pressure control

Blood pressure management in the hospital may vary from your home regimen. Medications will be reviewed at the time of discharge.

- **Do not** stop taking your medication unless your physician tells you to.
- **Do not** add salt to your food.
- **Do** exercise regularly and lose weight if necessary.
- **Do** follow all doctor's orders.
- **Do** use relaxation techniques to decrease stress.

Regular exercise

- Regular exercise can increase your body's ability to use oxygen.
- Brisk walking, jogging, swimming and bicycling are excellent forms of exercise.
- Your exercise program should start slowly in the hospital and gradually increase.

Exercise should be fun and should fit into your lifestyle. Everyone is different. Some people will be able to walk long distances and others will not. Simply do as much as you can, as often as you can.

Control diabetes

Good control of your blood sugar is important to help with wound healing and prevent infection. If you have any questions about a proper diabetic regimen, please ask your nurse or hospital dietitian for diabetic diet education materials. Dietitians can help you choose healthy foods and develop meal plans to promote blood sugar control.

Your hospital blood glucose regimen may vary from your home regimen.

Decrease stress

Stress is present in everyone's life. How you react to stress can directly affect your health. Many books and methods are available to help you control stress. Ask your primary care doctor to recommend stress reduction programs in your community, helpful books or other sources of information.

Control weight

Maintaining a healthy weight reduces strain on your body. It is important to control your weight before and after surgery.

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Hospital Services & Facilities

Hospital Services and Facilities

Michigan Medicine offers a variety of special amenities and services. If you have any questions about the following services and facilities, please ask your nurse for additional information.

Before your admission:

Online Patient Portal (MyUofMHealth.org)

To create an account, visit www.myuofmhealth.org

Follow the instructions on the web site to set up an account. MyUofMHealth.org is a secure way to manage your health online, offering a 24/7 connection to Michigan Medicine and important health information.

Our online patient portal gives you secure access to health information anywhere, at any time.

Advanced Directives

Before admission for surgery, people often consider their hopes for the future and preferences for their medical care. Some people decide to create a written advanced directive, such as a Durable Power of Attorney for Healthcare. While advanced directives are not required for treatment, these documents offer an opportunity to formalize your preferences for medical care into a legal document and identify a person to assist with making medical decisions. You would continue to serve as your own medical decision maker unless you were unable to make your own medical decisions as determined by your doctor.

If you are interested in completing a Durable Power of Attorney for Healthcare during your inpatient admission, please request to speak with your social worker for further information and assistance.

Electronic Equipment

Remember to bring chargers for your cell phones or other electronic devices.

Using headphones/earbuds can reduce noise. You can ask your nurse for a set of headphones/earbuds or bring some from home.

To avoid loss, consider the security of any electronic devices that you bring to the hospital. Label all items you bring from home with your name and phone number.

Because of the complex and critical nature of the health system's electrical systems, and for safety reasons, we do not permit the use of personal TV sets, electric radios or home power strips.

Insurance Benefits & Supports

Some insurance plans offer **meal assistance**, **mileage reimbursement**, **transportation**, or **lodging assistance** to patients and families during an inpatient admission. If possible, please contact your insurance company directly to determine if you have coverage for these supports before admission. If you have questions about these benefits during your admission, please speak with your social worker or Guest Assistance Program to determine if you have these benefits.

During your admission:

Family, as designated by the patient, is welcome for **visitation** at all times throughout the recovery process. Family can stay in waiting rooms or at bedside as needed.

Michigan Medicine offers a **washer and dryer** on University Hospital 6A, which families can utilize during their stay. Detergent is provided with the washer

and dryer. **Shower facilities** are available in University Hospital 7A. Please request more information from staff about these accommodations if you would like to utilize these facilities.

The **Guest Assistance Program (GAP)** office offers assistance to patients and their families during both inpatient admissions and outpatient follow up appointments. If you have questions, problems, or concerns with any aspect of your hospital stay, the staff will do everything possible to help. GAP staff is dedicated to making your hospital stay more pleasant and hospitable. This office is available to assist with special financial concerns. Contact the Guest Assistance Program at **(800) 888-9825**.

The **Med-Inn** is a 30 room hotel connected to Michigan Medicine and can be reached at **(734) 936-0135**. Single and double units, suites and family units are available. Free cribs, cable television and continental breakfast are included. Microwaves and refrigerators are also available for an additional fee.

The UM has agreements with other local hotels with reduced cost lodging that provides shuttle service to Michigan Medicine. To learn more, please contact **Patient & Visitor Accommodations** for additional information on the lodging program at **(800) 544-8684**.

Mennonite Guest House is a small Bed and Breakfast, only 3.5 miles from the hospital that is funded exclusively by contributions. There is no charge to stay but donations are greatly appreciated. The guest house provides private rooms, daily continental breakfast, a separate kitchen for guests to use, laundry facilities and shuttle services to and from the hospital. To check availability, please call **(734) 222-6233**.

Spiritual Care

Spiritual Care is available as needed, 24-hours a day, for spiritual ministry, prayer and sacraments for patients of all denominations, religions, and spiritual beliefs. A chapel is also available in University Hospital 2nd floor near Guest Assistance Program and Ford Auditorium. Catholic and Protestant services are available. Quiet Rooms for reflection or meditation are available in the Cardiovascular Center.

Social Work

While admitted inpatient for your surgery, a social worker will be assigned to you during your inpatient stay. Social Workers can provide **adjustment counseling** related to coping after surgery, receiving a new diagnosis, and while experiencing ongoing chronic illness. Social Workers are also able to assist in locating **community resources**, including outpatient counseling, support groups, Area Agency on Aging, Meals on Wheels, and other local organizations. Social Work is also available to family and caretakers if concerns are present.

Michigan Medicine Facilities and Shops:

University Hospital (Level 2) **dining facilities** include a cafeteria, a vending area, and eateries located in front of the cafeteria. University Hospital offers a rotating list of guest vendors from local restaurants. Victor's Way Cafe located in the hallway between the University Hospital and Cancer Center (level 2) and the Atrium Healthy Heart Cafe located in the Cardiovascular Center (Level 2), both offer a range of food and beverages. Guest trays may be ordered through room service for an additional fee.

FRIENDS Gift Shop

A small gift shop is located on Level 2 of the University Hospital and within the Mardigan Wellness Resource Center on Cardiovascular Center Level 2.

The gift shops are operated by the FRIENDS of Michigan Medicine. The shops sell candy, cosmetics, magazines, paperback books, toys, stuffed animals, apparel, gift items, games, greeting cards, writing supplies, jewelry, accessories, infant items and much more.

For patients who are unable to go to the gift shop, a gift cart circulates around the patient floors on weekdays.

Pharmacy

Prescriptions can be filled at the Patient/Visitor Taubman Pharmacy on the first floor of University Hospital. Non-prescription medications are also available. The Pharmacy accepts most credit cards and participates in many insurance programs. Prescriptions may take up to 3 hours to fill. Please be prepared for this delay. Prescriptions can be transferred to or from other pharmacies. Mail order prescription service is also available.

MiRxExpress is a service featuring bedside delivery of prescription medications filled at the Taubman Pharmacy for people being discharged from the University Hospital and the Cardiovascular Center. This service available Monday-Friday during business hours and requires a debit/credit card at the time of discharge.

Prescription Costs

If you are unable to afford the cost of your prescriptions on the day of discharge, Social Work staff may be able to assist you with receiving discharge medications. In these cases, our pharmacy can bill the prescriptions through your insurance. If a copay remains after your insurance(s) paid their portion, you will receive a bill at a later time from the hospital via mail or portal. Through using this “Ok to Bill” process, you would not have medication costs on the day of discharge.

Patient Relations and Clinical Risk

Patient Relations and Clinical Risk (PRCR) is dedicated to addressing situations which are inconsistent with the routine operation of the hospital or routine care of patients. PRCR works with patients, families and staff to comprehensively respond when unexpected events occur. PRCR is the destination for patients, families and staff when the health care that is provided does not proceed as expected or fails to meet expectations.

Call **(734) 763-5456** (Clinical Risk) or **(734) 936-4330** (Patient Relations) or toll-free at **(877) 285-7788**, Monday-Friday, 8am-4pm. If you reach a recording during normal business hours, please leave a message and a staff member will return the call.

Patient Relations and Clinical Risk is in University Hospital, Room UH 2B228, is open for walk-in assistance Monday-Friday, 8am-12pm and 1pm-4pm, or by appointment.

Care after you leave the hospital:

Continuing Care

Before your hospital discharge, a care manager will be available to assist you with planning for your continuing care needs. Should you need visiting nurse follow-up, physical or speech therapy or services at home, this can be arranged for you.

Billing

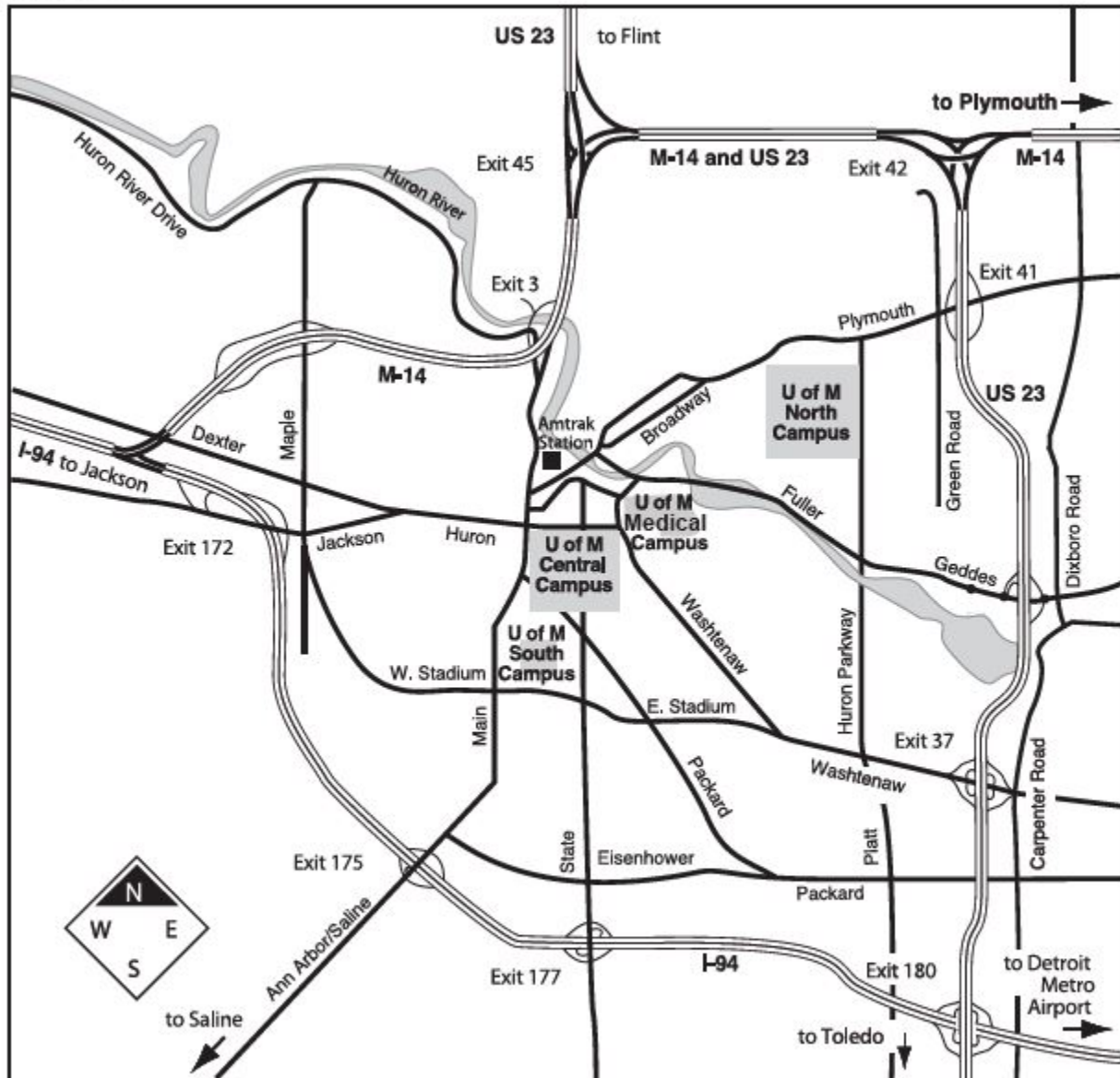
All billing correspondence will be mailed directly to your home address. Please feel free to ask any questions about your bill by calling the Patient Accounts office **(855) 855-0863** or the telephone number shown on your hospital bill.

Patient Financial Counselors

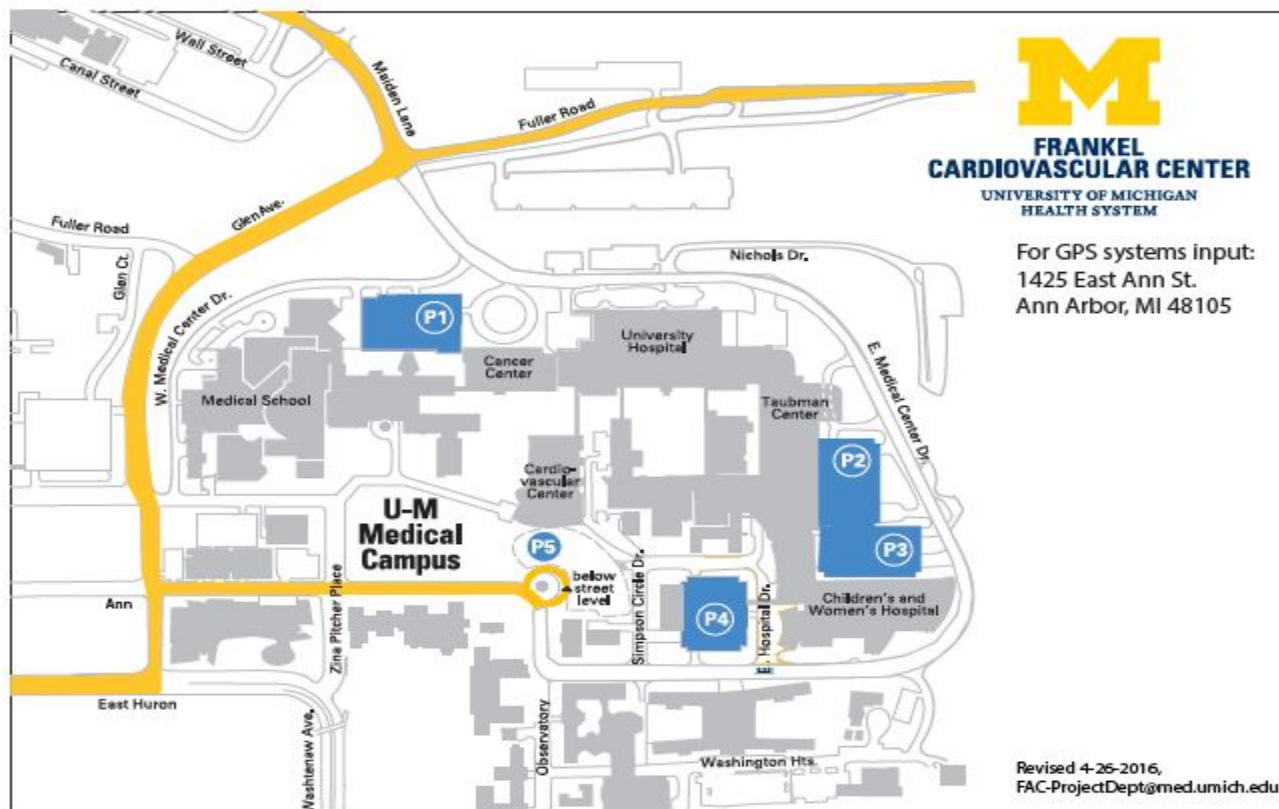
During or after your inpatient stay, Patient Financial Counselors staff can provide individual financial counseling about your current Michigan Medicine account, insurance benefits, and establishing payment plans for hospital bills. Patient Financial Counselors are also available to assist with Medicaid eligibility screening and enrollment if you qualify to apply for this type of insurance coverage. Please feel free to contact Patient Financial Counselors with further questions. Patient Financial Counselors can be reached 9am-8pm Monday through Friday at **(877) 326-9155**.

Medical Records

You can request a copy of your medical records after discharge through Health Information Management at **(734) 936-5490**. Please feel free to request assistance from a staff member if you would like to request records during your inpatient admission.

Ann Arbor

www.uofmhealth.org/maps-directions



Directions to the Cardiovascular Center (CVC)

From the North

Take US-23 South, to the Plymouth Road exit (#41). Turn right and follow Plymouth Road approximately 2 miles until you reach Maiden Lane and turn left. (This is the light immediately after Broadway Blvd., a preschool with turrets is on the near left corner.) Continue on Maiden Lane. At the next traffic light, turn right onto Fuller/Glen Avenue. Follow Glen Avenue to the third traffic light and make a left onto East Ann Street. The round-about entrance to the Cardiovascular Center will be two blocks ahead.

From the South

Take US-23 North to the Washtenaw Ave./BR23 exit (#37B) toward Ann Arbor. Merge onto Washtenaw Ave. and follow it approximately 1 mile until you reach Huron Parkway and turn right. When you reach the second traffic light, turn left at Fuller Road. As you follow Fuller, you will pass the Veterans Hospital and be able to see the Medical Center on the hill to your left. At the traffic light at Fuller and Maiden Lane/ East Medical Center Drive, go straight. Follow Glen Avenue to the third traffic light and make a left onto East Ann Street. The round-about entrance to the Cardiovascular Center will be two blocks ahead.

From the East

Take I-94 West to US-23 North (exit 180B). Take the Washtenaw Ave./BR23 exit (#37B) toward Ann Arbor. Merge onto Washtenaw Ave. and follow it approximately 1 mile until you reach Huron Parkway and turn right. When you reach the second traffic light, turn left at Fuller Road. As you follow Fuller, you will pass the Veterans Hospital and be able to see the Medical Center on the hill to your left. At the traffic light at Fuller and Maiden Lane/ East Medical Center Drive, go straight. Follow Glen Avenue to the third traffic light and make a left onto East Ann Street. The round-about entrance to the Cardiovascular Center will be two blocks ahead.

From the West

Take I-94 east to Ann Arbor (exit 172). This merges into Jackson Rd. (Eastbound). Remain on Jackson, which becomes Huron, and continue for 2.5 miles through downtown. At the traffic light at Glen and Huron, turn left onto Glen. After one block on Glen, turn right at the traffic light onto East Ann. The round-about entrance to the Cardiovascular Center will be two blocks ahead.

Parking Options

Valet services are available from 5:30 a.m.-7 p.m. M-F, and 8 a.m. to 6 p.m. on weekends, for \$5. Self parking is available 24 hours a day in the P5 underground garage for \$2. If you will be visiting for more than 4 hours, please have your ticket validated.

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Glossary of Terms

Glossary

Achalasia

A disorder of the esophagus that makes it hard for foods and liquids to pass into the stomach.

Anesthesiologist

The doctor responsible for monitoring your vital signs, general well being, and administering the medications that will sedate you before and during your surgery.

Arterial Line

A tube inserted into an artery in the leg or wrist before your surgery. This helps monitor vital signs more closely.

Catheter

A thin flexible tube placed into the body.

Chest Tube

Drainage tube placed around the heart and lungs to drain blood, air or fluid.

Deep Vein Thrombosis (DVT)

A blood clot that forms in a vein deep in the body.

Dysphagia

Difficulty in swallowing.

Endotracheal Tube

A tube inserted into the lungs (via the mouth and throat) and attached to a machine to supply oxygen when the lungs are unable to operate on their own.

Epidural

Epidurals allow for pain medication to be given through a catheter in the spine.

Gastroesophageal Reflux (GERD)

The regurgitation of acidic stomach contents into the esophagus.

Heart Monitor (Telemetry Monitor)

A way for staff to help monitor heart rhythm after surgery.

IV/ PIV

Abbreviation for Intravenous/ Peripheral Intravenous- a catheter inserted into the veins used to dispense medications and fluids.

Jackson-Pratt drain (JP drain)

A JP drain is bulb that is used for collecting bodily fluids from surgical sites.

Jejunostomy tube (J-tube)

A J-tube is a soft, plastic tube placed through the skin of your abdomen (belly) into the small intestine.

Laparoscopic Incisions

Small 1-2 inch incisions in the abdomen (belly) made during an operation during which a video camera may be used.

Nasogastric Tube (NG)

A tube inserted through the nose into the stomach to drain stomach contents.

Patient Controlled Analgesia (PCA)

PCAs allow patients to give themselves pain medication immediately via their IV.

Penrose Drain

Soft, flexible rubber tube used as a surgical drain to prevent the buildup of fluid in the neck area.

Peripheral Pain Pump

A small hollow plastic tube under the skin placed at your incision that deliver a numbing pain medication.

Pneumonia

Infection inside the lungs.

Pulmonary Embolism (PE)

A blockage in a lung artery often caused by a blood clot.

Pulse Oximeter

A way to measure how much oxygen your blood is carrying.

Sequential Compression Devices (SCDs)

Device applied to calves that promotes blood circulation to prevent blood clots.

Sternotomy

A vertical incision along the sternum (breastbone) that allows your surgeon to reach the organs in your chest cavity.

Thoracoscopic Incisions (VATS)

Small 1-2 inch incisions made in the chest during an operation in which a video camera is used. May also be referred to as a video-assisted thoracoscopic surgery or VATS incisions.

Thoracotomy

An incision across your right/left chest that allows the surgeon to reach your lungs and other organs in your chest.

Urinary Catheter

A drainage tube inserted into the bladder to drain urine.

Disclaimer: This document contains information and/or instructional materials developed by Michigan Medicine for the typical patient with your condition. It may include links to online content that was not created by Michigan Medicine and for which Michigan Medicine does not assume responsibility. It does not replace medical advice from your health care provider because your experience may differ from that of the typical patient. Talk to your health care provider if you have any questions about this document, your condition or your treatment plan.

Funded (or funded in part) through a grant from U-M FRIENDS Gift Shops

Plain language editing: Karelyn Munro, BA

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