

Esophagectomy

A Guide for Your Surgery

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Additional Information

Ask your nurse for the following Patient Education handouts or view them in MyChart.

- **Enhanced Recovery After Thoracic Surgery**
- **Breathing Exercise: Using the Incentive Spirometer**
- **Tube Feeding Using a Pump**
- **Barium Swallow**
- **Incision Care After Surgery**
- **Constipation Control When Taking Pain Medicine**

About Your Surgery

You will have surgery to remove a tumor on your esophagus (swallowing tube). This surgery is called an esophagectomy.

During the esophagectomy, your surgeon will:

- Make 2 or more incisions (cuts)
- Remove all or part of your esophagus and a portion of your stomach
- Connect the remaining healthy part of your esophagus to your remaining stomach
- Remove lymph nodes around your esophagus. The lymph nodes are tested to see if they have cancer cells. Your care team will discuss the test results with you.

There are 4 common types of esophagectomy surgeries. All 4 surgeries have similar cure rates and risks. The type of surgery you have depends on the location and extent of your cancer.

The type of surgery you will have is:

- Minimally invasive esophageal resection
- Transthoracic esophagectomy
- Transhiatal esophagectomy
- 3-field esophagectomy

During surgery, your surgeon may insert a tube through your belly and into your small intestine. This tube is to give you food (formula) after surgery. The formula has calories, protein, vitamins, minerals and fluids that your body needs. The tube will stay in place for about 1 month. This allows your body to heal before you start to eat again.

Smoking

Do not smoke before or after surgery. If you are a smoker, quit smoking at least 2 weeks before surgery. Smoking may cause medical problems after your surgery. Programs are available to help you to stop smoking. Ask your care team for more information.

Dental Hygiene

Good dental hygiene decreases your chance of infection from surgery. A dentist may check your teeth before surgery. Your surgeon will decide if you need to see a dentist before surgery.

Preparing for Surgery

Preoperative Tests

Before surgery, you may have the following tests:

- **Computerized tomography (CT) scan** – Uses x-rays to make 3D pictures of your chest and abdomen.
- **Endoscopic ultrasound** – Uses sound waves to find out the thickness of the tumor in your esophageal wall. The test also checks to see if any nearby lymph nodes or tissues are affected by the tumor.
- **Positron emission tomography (PET) scan** – Shows where the cancer is located.

- **Pulmonary function test** – Measures the amount of air that flows through your lungs. The test can determine how well your lungs move oxygen into and carbon dioxide out of your blood. It can also find blockages in your airways.
- **Electrocardiogram (ECG)** – Shows the electrical activity of your heart. You will have this test if you are over 40 years old or have a history of heart disease.
- **Stress test with nuclear cardiac scan** – Shows how well your arteries supply blood to your heart during exercise. It also finds out if any areas of your heart are not receiving enough blood.

Diet

You need good nutrition before and after surgery. Before surgery, you may see a dietitian if you:

- Have trouble eating or swallowing
- Feel full soon after taking a few bites of food
- Are losing weight

A dietitian may talk with you about supplements and ways to make sure you get enough nutrition.

Medicines

You may need to avoid taking certain medicines before surgery.

- **Tell your doctor about all medicines you are taking or have taken recently.** Include prescriptions, over-the-counter medicines, nutritional supplements, vitamins, minerals and herbal products, even if they are not listed below. Your care team will tell you which medicines you need to avoid.
- On the day of surgery, you will receive an anesthetic (a medicine that causes a total lack of feeling and consciousness) in order to sleep during surgery. Before surgery, you will see an anesthesiologist (a doctor who gives anesthesia to patients during surgery) to talk about the anesthetic and any medicines you need to avoid taking before surgery.

Blood Thinning Medicines to Avoid Before Surgery

Certain medicines thin the blood and keep the blood from clotting. You may need to stop taking blood-thinning medicines before surgery.

The list below includes some of the medicines that affect how the blood clots.

- **Anti-platelet agents**
 - Clopidogrel (Plavix[®])
 - Aspirin
 - Ephedra/Ma Huang[®]
 - Ticagrelor (Brilinta[®])
 - Prasugrel (Effient[®])
- **Glycoprotein IIb/IIIa inhibitors**
 - Tirofiban (Aggrastat[®])
 - Eptifibatide (Integrilin[®])
 - Abciximab (ReoPro[®])

- **Factor Xa inhibitors**
 - Fondaparinux (Arixta®)
 - Rivaroxaban (Xarelto®)
 - Apixaban (Eliquis®)
- **Heparin (low-molecular weight heparins)**
 - Dalteparin (Fragmin®)
 - Enoxaparin (Lovenox®)
 - Tinzaparin (Innohep®)
- **Warfarin (Coumadin®)**
- **Over-the-counter medicines**
 - Celecoxib (Celebrex®)
 - Ginseng
 - Garlic
 - Gingko biloba
 - Naproxen (Anaprox®, Aleve®, Naprosyn®)
 - Ibuprofen (Motrin®, Advil®, Nuprin®)
 - St. John's Wort
 - Vitamin E

Before Surgery

- **24 hours before surgery, do not eat anything.**
- **Up to midnight before surgery**, you may continue to drink water and clear fluids. This includes water, tea or coffee (nothing added), or clear juice (no pulp).
- **After midnight before surgery, do not eat or drink anything.**
- You may receive medicine to ensure that your bowel is clean for surgery.
- You may brush your teeth and rinse your mouth with mouthwash. Avoid swallowing water or mouthwash.
- Make sure you talk with your anesthesiologist about taking any medicine before surgery.

Preparing Your Skin

You will receive a special soap for your skin.

- The night before surgery, take a shower using the special soap. Wash your chest, neck and underarms as instructed.
- After your shower, **do not** put anything on your skin – not even deodorant.
- You may wash your hair the night before surgery. You may not be able to wash it for several days after surgery.

What to Bring to the Hospital

- These education materials
- Basic toiletries such as a comb, toothbrush, toothpaste and deodorant
- Slippers and a robe. Right after surgery, you will wear a hospital gown.
- You may need to bring money or credit cards to pay for your take home prescription medicines.

Do not bring jewelry. If you bring valuables, ask your family or friends to keep them until you return to your hospital room after surgery. You may also ask the nurse to store them. The hospital is not responsible for any lost items.

Day of Surgery

Getting Ready for Surgery

Report for surgery as you are instructed. To get ready for surgery:

- You will remove all of your clothing and put on a hospital gown.
- You will go to the bathroom and empty your bladder.
- You may receive medicine to help you relax.
- Your care team will help you onto a stretcher and move you to the holding area (a patient waiting room near the operating room).

Do not wear anything that can come off during surgery. This includes dentures, partial plates, eyeglasses, contact lenses, jewelry, bobby pins, wigs, or any removable prosthesis (such as an artificial eye or leg).

In the Holding Area

- Your care team will put a blood pressure cuff on your arm.
- An IV (a small tube inserted into a vein) will be placed in a vein in your hand or arm. You will receive medicine and fluids through your IV.
- A nurse will talk with you about any concerns you have and confirm any allergies you have.
- If you feel cold, ask for a blanket.
- Your care team will give you preoperative medicines.

In the Operating Room

- Your family and friends **may not** enter the operating room. They may stay in the surgery waiting area.
- Your care team in the operating room will wear uniforms, masks and caps.
- You will come into the operating room on a stretcher. A nurse will help you move to the operating table.
- If you feel cold, ask for a blanket.
- You will be secured to the operating table to keep you safe from sudden movements during surgery or while waking from anesthesia.
- An ECG machine will monitor your heart rate.
- You will receive the anesthetic through your IV.
- After you are asleep, a tube will be put in your throat to help you breathe.

After Surgery

You will be taken to the Post Anesthesia Care Unit (PACU) or Intensive Care Unit (ICU) for recovery. After recovery, you will go to your hospital room.

- Your breathing tube will most likely be removed in the operating room.
- A protective lubricant is put in your eyes while you are in the operating room.
When you first wake up, you may not see clearly. This is normal and lasts only a short time.

- The top of your bed will be raised at a 30-degree angle. This is to decrease swelling and to improve your breathing. **Do not lie flat in bed.**

When you wake up from surgery, you will have all or some of the following:

- **IV**
- **Nasal cannula** – A tube that fits behind the ears and has 2 prongs which are placed in the nose) to give you more oxygen. The cannula will stay in place until you do not need more oxygen.
- **Nasogastric tube (NG tube)** – A tube that extends from your nose to your stomach) drains stomach fluids. This tube will stay in place for several days after surgery.
- **Jejunostomy tube (J-tube)** – A tube that goes through your abdomen and into your jejunum (the second part of the small bowel) to help you with feeding and nutrition.
- **Foley catheter** – A flexible tube with a balloon tip that is placed into your bladder to drain urine.
- **One or more chest tubes** – Tubes to drain fluids that may surround your lungs. The tubes stay in place for several days after surgery.
- **Stitches (sutures) or staples (metal clips)** – To hold the edges of your incision together. The dressing over the stitches or staples will be removed 48 hours after your surgery. Some stitches will naturally dissolve with time. The staples will be removed at the time of discharge or at your first post-operative clinic visit.
- **Sequential Compression Devices (SCD)** – Disposable sleeves on your legs. The sleeves inflate and deflate at alternating intervals.

Your care after surgery includes:

- You will receive an injection of blood thinners 2 to 3 times every day until discharge. This is to help prevent blood clots.
- You will use an incentive spirometer (a small device used in breathing exercises) to prevent problems such as pneumonia after surgery. **Do breathing and coughing exercises every hour while you are awake and every 2 hours at night.** A member of your care team will help you.
- You will receive medicine for pain as needed.
- The first night after your surgery will be very busy. Your care team will help you walk every 4 hours. You will do breathing and coughing exercises every hour throughout the night.

Your care team will check on your progress often. If you are in pain, tell your nurse.

It is recommended that your family does not spend the first night in the hospital with you. It is best for them to come the next day.

Recovery After Surgery

Most patients stay in the hospital for 7 to 8 days after surgery. Any problems after surgery may cause you to stay longer.

Each Day of Your Hospital Stay

- Your care team will check your progress and will:
 - Check your weight
 - Listen to your heart and lungs
 - Check and clean your incision and chest tube, J-tube, NG tube and IV sites
 - Irrigate and/or suction your tubes
 - Help you get out of bed and walk with you until you can walk by yourself
 - Monitor the amounts of fluid that you take in (through your J-tube) and put out (through urine)
- **Tell your nurse if you:**
 - Have pain or nausea
 - Feel pain at your IV site
 - Cough up anything red, rusty or brown
 - Feel feverish or chilled
 - Have difficulty sleeping
- You will receive fluids and pain medicine daily.
- You will have a chest x-ray and blood tests, if needed.

Pain Medicine

You will receive pain medicine during your surgery. You may be given a PCA pump. A PCA pump is a push-button pump that gives you pain medicine through your IV. Your care team may set the pump to give you regular small doses of medicine. You can also push the button for additional small doses when you feel you need it. Tell your nurse if your pain affects your ability to walk or do the breathing and coughing exercises. Your care team can change your dose of medicine to make you more comfortable.

Day 1

- Your mouth will probably feel dry. You may rinse your mouth with water.
- Walk every 4 hours. Ask your care team for help.
- Use the incentive spirometer. Do breathing and coughing exercises every hour while awake and every 2 hours at night. Your nurse will show you how to do “splinting.” Use a pillow or “Sir Koff-A-Lot” to support your chest and make the breathing and coughing exercises less painful.
- You may use an inhaler or receive a nebulizer treatment (a device used to give medicine in the form of a mist inhaled into the lungs). A respiratory therapist (a specialist who evaluates, treats and cares for patients with breathing problems) will assist you.
- You **will not** be allowed to eat or drink anything.
- You will receive medicine and fluids by IV.

Day 2

- The surgery dressing will be removed.
- Use the incentive spirometer. Do breathing and coughing exercises every hour while awake and every 2 hours at night.
- Walk every 4 hours.

- If needed, you will meet with a physical therapist (a specialist who treats patients to restore the ability to move, prevent disability, relieve pain, promote healing or who helps patients adapt to a permanent disability).
- If needed, you will meet with an occupational therapist (a specialist who assists patients to resume various activities of daily living and to make your home and workplace easier to get around).
- You will receive medicine and fluids by IV.
- You **will not** be allowed to eat or drink anything.
- If you are strong enough, you may shower.

Day 3

- Use the incentive spirometer every hour while awake and every 2 hours at night. Continue to do the breathing and coughing exercises.
- Walk every 4 hours.
- If you have a feeding tube (J-tube), you will begin to receive tube feedings.
- Your NG tube will be removed on Day 3 through 6, depending on your doctor's decision.
- You **will not** be allowed to eat or drink anything.
- You will receive medicine and fluids by IV.

Day 4

- Use the incentive spirometer. Do breathing and coughing exercises every hour while awake and every 3 to 4 hours at night.
- Walk every 4 hours.
- Continue to receive J-tube feedings. Each day, your care team will gradually increase how fast you receive formula through the J-tube.
- You **will not** be allowed to eat or drink anything.
- You will receive medicine and fluids by IV.

Days 5 and 6

- Use the incentive spirometer. Do breathing and coughing exercises every hour while awake and every 3 to 4 hours at night.
- Walk every 4 hours.
- Continue to receive J-tube feedings. When you are able to receive the tube feedings without symptoms (such as vomiting, diarrhea, gas or constipation), you will receive feedings during the night. This allows you to be free of the pump during the day.
- You **will not** be allowed to eat or drink anything.
- The chest tube may be removed, depending on your doctor's decision.

Days 7 and 8

- Use the incentive spirometer. Do breathing and coughing exercises every hour while awake and every 3 to 4 hours at night.
- Walk every 4 hours.
- Continue to receive J-tube feedings.
- You **will not** be allowed to eat or drink anything.
- Your epidural catheter and the Foley catheter will be stopped today.

- You will receive instructions for the J-tube feeding procedure, J-tube care, and incision care. Home Health assistance is **not** required for tube feeding. Your care team will order the supplies you need for tube feeding at home.
- You will be discharged to go home.

Home Care

What to Expect

- Some redness, swelling and drainage around your incision is normal. This will go away in about 1 month, but may take longer.
- You may feel tired after surgery.
- You may feel uncomfortable for 1 to 2 months. The pain should gradually decrease. Your doctor will give you a prescription for pain medicine to take at home. You will take the pain medicine through your J-tube until you have permission to eat and drink. **Do not** take Tylenol unless instructed by your surgeon. After you have used all of your prescription medicine, you can take Tylenol or another aspirin-free pain medicine. If you still have pain, tell your doctor.
- Your skin may be numb in different places, such as near your incisions, for 4 to 6 months.
- If you have permission to begin eating and drinking:
 - Sit upright when you eat.
 - Take small bites. Chew food well.
 - Relax and eat slowly.
 - Stop eating when you feel full.
 - Eat several (4 to 6) small meals a day.
- You may have constipation. To help decrease constipation problems, increase your activity each day. You may receive a prescription for a mild laxative and stool softeners.
- If you have diarrhea or dumping syndrome (food moving too quickly through the stomach into the small intestines), tell your nurse.

Daily Activities

- Wash your incision every day with mild soap and water. **Do not** use antibiotic ointment on the incision unless instructed to do so by your surgeon.
- Do not peel off the Steri-stripsTM. They may fall off on their own. You may remove these 7 days after your discharge.
- Wear clean, loose clothing over the incision.
- Walk a little more each day.
- Continue to do breathing and coughing exercises.
- Hold your teddy bear or pillow firmly pressed against your belly wound while coughing. Do this for 4 to 6 weeks after surgery.
- Resume sexual activities whenever you wish.



Symptoms to Report

Call your doctor right away, or go the nearest hospital emergency center if you have any of these signs or symptoms:

- Signs of infection include:
 - Redness
 - Swelling
 - Tenderness
 - More drainage or bad odor from incision site(s)
 - Fever of 101°F (38.3°C) or higher
 - Chills
- Nausea or vomiting that does not go away
- Trouble breathing or shortness of breath
- Chest pain or heart palpitations

Precautions After Surgery

- Once you are at home, **do not lie flat**. Keep the head of your bed raised like it was in the hospital (at least 20 degrees).
- Before you go home, ask your nurse for a wedge of foam to raise your bed at home. Try one of the following methods:
 - Put the wedge of foam under your pillow.
 - Put the wedge of foam at the head of the bed between the box springs and mattress.
 - Raise the head of your bed using bricks or cinder blocks.
- For 4 weeks:
 - **Do not** lift anything heavier than 15 pounds (6.8 kg). This includes pushing a vacuum cleaner.
 - **Avoid** exercises that can overstretch the muscles in your arm and shoulder (such as swimming, tennis or golf).
 - **Do not** drive for the first 2 weeks after surgery. Then, **continue to avoid** driving if your incision is painful or if you are taking pain medicine. Your reflexes may be slower than you think.
 - **Do not** drink alcohol as long as you are taking pain medicine.
 - **Do not** smoke.
 - **Avoid** tobacco smoke.
 - **Avoid** soaking in a bath or hot tub.

J-Tube Care

Continue to follow your care team's instructions for J-tube feedings. Your doctor will decide when you can stop tube feedings.

Cleaning the J-Tube

- Clean around the tube with mild soap and water every day.
- Apply antibiotic ointment around the tube 2 times a day.
- Flush the tube with water before and after each feeding.
- Flush the tube with water before and after all medicines.
- Flush the tube with water 3 more times a day to keep it open.

Keeping the J-Tube Secure

- Always keep the J-tube closed, except for when you use it to give yourself a feeding.
- The tube should always be secured to your body with a suture and tape. Make sure that the tube is securely taped to your body. Tell your doctor if the sutures become loose. It is common for sutures to become loose.



- If the tube comes out when you are at home:
 - **Rinse the tube with warm water right away.**
 - Gently try to re-insert the tube along the tract.
 - Re-tape the tube in position.
 - Contact the Thoracic Clinic.
 - Go to the MD Anderson Acute Cancer Care Center for an x-ray to check the placement of the tube. (If you are not in the Houston area, go to the nearest hospital emergency center.)
Do not use the tube until your x-ray confirms the tube placement is correct.
 - If the tube does not go in easily, **stop** and **contact your nurse or doctor right away**, or go to the nearest hospital emergency center.
- **If the tube comes out, it is very important that you try to replace the J-tube right away. A delay of 2 to 3 hours may cause the tract to close and will require a surgical procedure to replace the tube.**

Your doctor and dietitian decide when to remove the J-tube. This depends on when you are eating well enough to maintain your weight.

Follow-Up Care

- If you have staples in your incision, the staples will be removed at your first follow-up visit.
- Future follow-up appointments are determined by your doctor.

Contact Information

To cancel or reschedule your surgery, call your surgeon.

To report symptoms after surgery, call:

The Thoracic Center

Main Building, Floor 9, near Elevator B

Monday through Friday, 8 a.m. to 5 p.m.

713-792-6110

<http://www.mdanderson.org/Thoracic>

In case of an emergency:

Call 911 or go to the nearest hospital emergency center.

In case of an emergency, call 911 or go to the nearest hospital emergency center. The MD Anderson Acute Cancer Care Center is open 24 hours a day, every day. From Holcombe Boulevard, turn at Entrance Marker 3. The entrance is on Bates Street for patient drop off only. You can park in Garage 2. From inside the Main Building, go to Floor 1, near The Pavilion entrance.