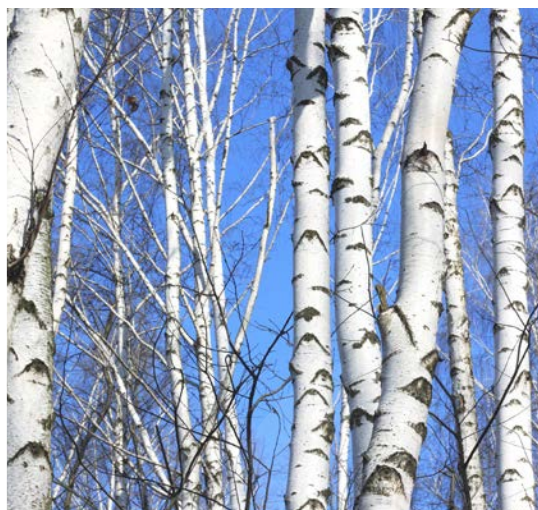


# Understanding Esophageal Cancer





# Understanding Esophageal Cancer

*Third edition*

Developed by Allina Health.

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The publisher believes that information in this manual was accurate at the time the manual was published. However, because of the rapidly changing state of scientific and medical knowledge, some of the facts and recommendations in the manual may be out-of-date by the time you read it. Your health care provider is the best source for current information and medical advice in your particular situation.

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## Disclaimer

This publication is for general information only and is not intended to provide specific advice or recommendations for any individual. The information it contains cannot be used to diagnose medical conditions or prescribe treatment. The information provided is designed to support, not replace, the relationship that exists between a patient and his/her existing physician.

For specific information about your health condition, please contact your health care provider.





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# Chapter 1: Introduction

After you find out you have esophageal cancer, it is easy to feel overwhelmed or confused. Your health care team will help you through this time.

You and your health care team will work together to develop a cancer treatment plan. This plan will be unique to your needs, concerns and preferences.

This book was created to educate, help and guide you. It should not be used as a substitute for medical or professional advice. This is a general overview of esophageal cancer and not everything may apply to your situation. Read it at your own pace and write your questions in the margins.

**Bring this book with you when you meet with your health care team.** They will reinforce the information in this book and answer any questions you have.

## Your Health Care Team

Your health care team will partner with you during your cancer treatment. Your team will include many health care providers who, along with you, will create your health care team. You are the center of your health care team.

Members of your health care team may include:

- **Advance practice provider**

An advance practice provider can treat illnesses and diseases such as esophageal cancer. An advance practice provider and doctor work together as a team. Advance practice providers include clinical nurse specialists, nurse practitioners and physician assistants.

- **Cancer rehabilitation care team**

Cancer rehabilitation may help you regain or improve the abilities you feel have changed as a result of your cancer or cancer treatment to help you maintain or regain your independence and enjoy your life to the fullest.

The team may include: physical medicine and rehabilitation provider, physical therapist, occupational therapist and speech-language pathologist.

- **Dietitian**

A dietitian will work with you and your health care team to meet your nutritional needs.

- **Gastroenterologist**  
A gastroenterologist treats digestive tract problems and conditions. They will work with your health care team to diagnosis your cancer, create a surveillance plan that is right for you and help you manage any symptoms.
- **Genetic counselor**  
A genetic counselor can help clarify concerns related to a personal or family history of cancer, or both. They will talk with you about risks, screening and prevention. A genetic counselor can also help determine which, if any, genetic tests may be helpful, coordinate the testing and then interpret the results.
- **Medical oncologist**  
A medical oncologist is a doctor who will meet with you to talk about systemic therapy treatment (such as chemotherapy or targeted therapies, including immunotherapy).
- **Nurse navigator**  
A nurse navigator is a registered nurse who will support, educate and guide you through your course of treatment. Your nurse navigator will be part of your health care team from diagnosis through treatment and on to healing and survivorship.
- **Oncology clinic nurse**  
An oncology clinic nurse works with doctors in surgical oncology, medical oncology or radiation oncology to review and coordinate your care. Your nurse will educate you about your cancer treatment and help you manage symptoms.
- **Palliative care team**  
Palliative care provides relief from the symptoms, pain and stress of a serious illness. The goal is to improve quality of life for both you and your family. Palliative care is provided by a team of providers that may include a doctor, advance practice provider, nurse, social worker and spiritual care provider. The team helps you and your family understand your illness and treatment choices.
- **Primary care provider**  
Your primary care provider will have access to all of your treatment information. You will keep visiting your primary care provider for your usual health care needs.
- **Pulmonologist**  
A pulmonologist treats lung problems and conditions.
- **Radiation oncologist**  
A radiation oncologist is a doctor who will meet with you if your treatment plan includes radiation therapy.



- **Social worker**

A social worker will support you and your family by providing emotional support and information on resources you may need such as financial assistance, transportation or a health care directive.

- **Surgeon**

Your surgeon will specialize in esophageal cancer surgery. They may be part of your health care team and will talk with you about surgery treatment options and help identify the best treatment plan for you.

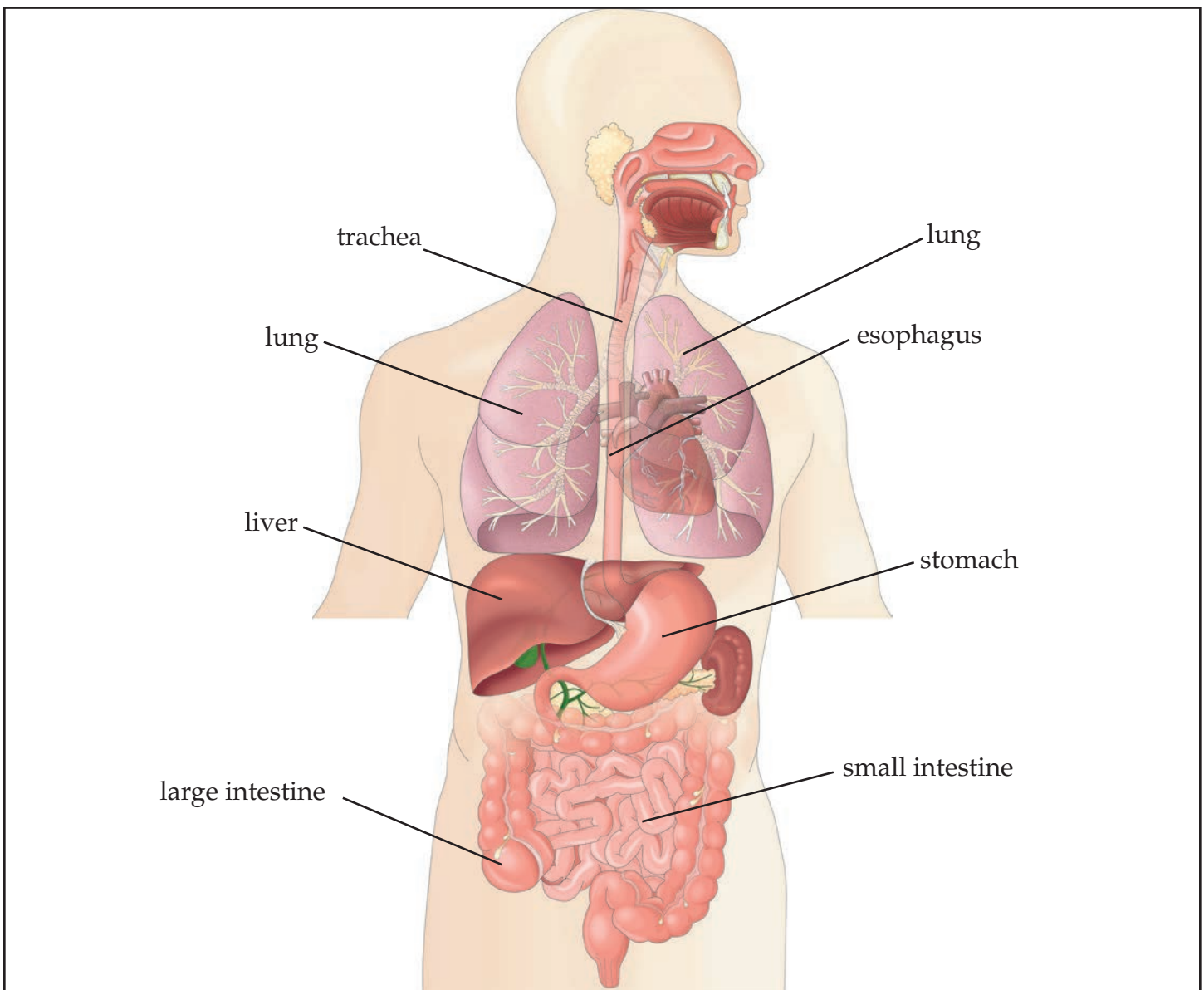
You may also come in contact with other health care providers, including integrative health, spiritual care and respiratory care.

# Understanding Esophageal Cancer

## Your Esophagus

The esophagus is a tube of several muscle layers about 10 inches long. It passes food from your mouth to your stomach, where the food begins to digest.

The esophagus is located behind the breathing tube (trachea). The top part of the esophagus is located in your neck and the lower part in your abdomen, where it connects to the stomach. Most of your esophagus is located in your chest.



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# Risk Factors

In most cases, it is not possible to know exactly why one person gets cancer and another person does not get cancer.

Research has shown that there are risk factors that can increase a person's risk of getting cancer. Some risk factors, such as gender, age and family history, cannot be changed. Other risk factors can be modified to lower your risk.

The most common risk factors for esophageal cancer include:

- tobacco use
- heavy alcohol use
- Barrett's esophagus (severe damage to the lining of your esophagus)
- gastroesophageal reflux disease (a disorder that allows food and stomach acid to back up into your esophagus)
- older age
- gender (more common in men)
- diet (what you eat and drink)
- being overweight.

# Diagnostic Exams or Scans

## Important

Your health care provider may recommend other procedures, exams or scans to help diagnosis esophageal cancer.

To diagnose esophageal cancer, you may have one or more of the following exams or scans.

## **Esophagogastroduodenoscopy (EGD) or upper endoscopy**

An esophagogastroduodenoscopy (also known as an EGD) is an exam of the lining of your esophagus, stomach and the first part of your small intestine. This exam is done by passing a flexible tube (an endoscope) through your mouth into your stomach. The endoscope is about the size of your little finger and it has a bright light on the end. A biopsy may be done during this procedure.

## **CT exam**

A CT (computed tomography) exam uses X-ray and a computer to get an in-depth look at your internal organs, tissues, blood vessels and bones. The result is an image that provides a clear and detailed picture of your body.

## **PET scan**

A PET (Positron Emission Tomography) scan is a three-dimensional (3-D) view of any part of your body. A small amount of radioactive material, known as a tracer, will be injected into your bloodstream. The PET scan creates colored pictures of chemical changes that take place in body tissues.

## **Endoscopic ultrasound**

An endoscopic ultrasound (also known as an EUS) can be done to get images of your esophagus, stomach, and surrounding lymph nodes. A small, flexible tube with a camera and an ultrasound probe are passed through your mouth and into your stomach. A biopsy may be done during this procedure.

## **MRI**

Magnetic resonance imaging (MRI) is a painless way to look inside your body without using X-rays. MRI does not use radiation. MRI uses a magnetic field to make three-dimensional (3-D) images of almost any part of your body. These images show the difference between normal tissue and abnormal tissue.

## **Laparoscopy and washings**

A laparoscopy is a surgery done to check if the cancer has spread in the abdomen and to biopsy any tissue that looks abnormal.

During a laparoscopy, a laparoscope is inserted into the abdomen. A laparoscope is a thin, lighted tube. It allows your surgeon to view your abdomen and other organs. A small amount of air is used to expand the abdomen for a better view. The surgery usually has 2 or 3 lower abdominal incisions.

Washings are often done during the laparoscopy. Your surgeon will put fluid in your abdomen and then draw out (remove) a sample. The sample will be tested and the results will show if any cancer cells have broken free from the tumor.

# Pathology Report

A pathology report will show the results of the tissue samples you had taken. It will provide information about your esophageal cancer such as:

- **diagnosis:** This is the type of esophageal cancer or tumor.
  - adenocarcinoma: This type of cancer forms in the glandular cells (produces mucus). It is found most often in the lower part of the esophagus (near the stomach).
  - squamous cell carcinoma: This type of cancer forms in the thin, flat cells that form the surface of the esophagus. It is found most often in the upper and middle part of the esophagus.
- **grade:** This is how abnormal the cells look under the microscope.
  - grade I: The cancer cells look more like normal cells. These cells may grow and multiply slowly.
  - grade II: The cancer cells look somewhat abnormal. These cells may grow and multiply a little faster than normal.
  - grade III: The cancer cells do not look like normal cells. These cells may grow and multiply more quickly.
- **HER2 (Human Epidermal Growth Factor Receptor 2) status:** This is a test to see if the tumor will respond to HER2 targeted therapy.

## Important

The “grade” of your cancer is **not** the same as the “stage” of your cancer.

The stage of your esophageal cancer is determined by many different factors. Your health care provider will talk with you more about the stage of your cancer.

## Staging

The stage of your esophageal cancer is:

T: \_\_\_\_\_

N: \_\_\_\_\_

M: \_\_\_\_\_

Final stage: \_\_\_\_\_

The results of your procedures, exams or scans will help your health care team determine the stage of your cancer and how to treat it. This is called the clinical or baseline stage.

The final stage will be determined after surgery. This is called the pathological stage.

The stage of your tumor is based on the TNM staging system:

- **T:** the size and depth of your tumor
- **N:** if the tumor affects nearby lymph nodes
- **M:** if the cancer has spread to other organs (such as the lungs and liver) or distant lymph nodes.

There are four stages of esophageal cancer. Stage 1 is the earliest stage. Stage 4 is more advanced.



# Chapter 2: Nutrition

Good nutrition is important to help help maintain energy, maintain weight and stay hydrated, fight infection and tolerate your treatment with less side effects. If you will be having surgery, good nutrition can also help you heal well after surgery.

Within this chapter is information on trouble swallowing, esophageal stents and feeding tubes. You will also find ways to cope with common side effects related to having esophageal cancer and treatment.

## Nutrition Impact Symptoms

Nutrition impact symptoms are symptoms that affect your ability to eat or drink. The following symptoms may happen because of having cancer or having cancer treatment:

- trouble swallowing (painful swallowing or food feels as though it is getting stuck)
- coughing or choking on food
- decreased appetite
- heartburn-like pain
- vomiting (throwing up)
- weight loss.

## Trouble Swallowing (Dysphagia)

### Tip

Dysphagia (dis-FAY-ja) is a swallowing problem.

### Tip

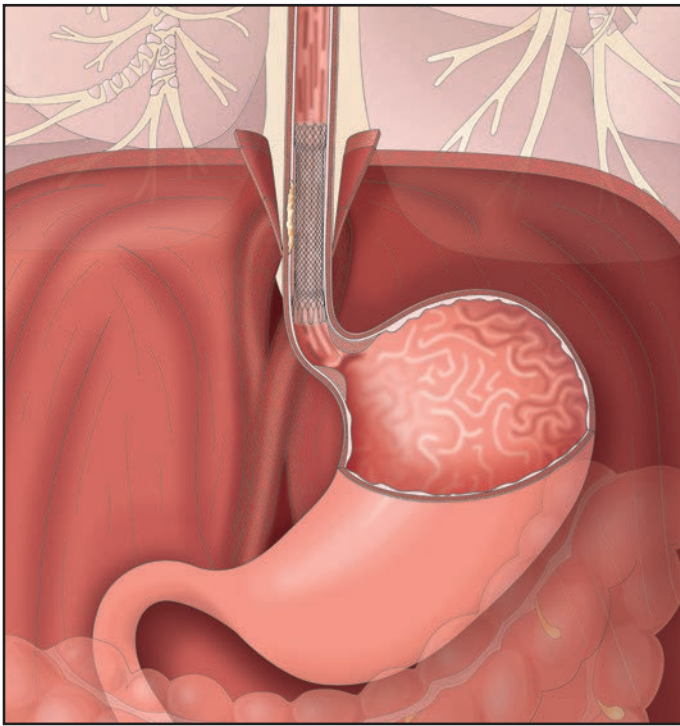
Learn more about foods that have protein and ways to add protein to your meals on pages 29 to 32.

Trouble swallowing (dysphagia) is the most common symptom of esophageal cancer. It may be mild at first and then get worse over time as the opening inside the esophagus starts to get smaller.

Meats and breads can be hard to swallow. If you are having trouble swallowing your food, it may be better to eat a mechanical soft diet (foods chopped up or cut very small). You may need to puree foods (blend food in a food processor or blender) to create a smooth texture that does not require it to be chewed.

Using high-calorie, high-protein nutrition supplements (such as Boost® or Ensure®), milk shakes or smoothies might help provide additional calories, protein and liquids.

# Esophageal Stent



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**An esophageal stent is a small, flexible, plastic-coated mesh tube. It is placed in your esophagus to keep a blocked area open to make it easier to drink liquids and eat softer foods.**

## Important

Your health care team will give you more information about your diet after the stent is placed. **It is very important to follow these diet changes.**

If you are having a lot of trouble swallowing, your health care provider may recommend an esophageal stent. This is a small, flexible, plastic-coated mesh tube. It is placed in your esophagus to keep a blocked area open to make it easier to drink liquids and eat softer foods. This stent may be temporary or permanent. A gastroenterologist will place the stent and talk with you about the procedure.

The stent is not as flexible or as wide as your esophagus, so you will need to change your diet after it is placed. You will slowly ease back into eating because it may take 1 to 2 days for the stent to expand. During this time, you may have some pain or discomfort. Your gastroenterologist will help you manage any side effects.

After the stent is placed, your diet will usually follow this order:

1. clear liquids (liquids you can see through)
2. full liquids (such as soup, pudding, milk)
3. pureed/smooth foods
4. soft foods.

As your diet advances to soft foods, you will need to chew foods very well. This will help keep the stent from being blocked. You should not eat the following foods because they are more likely to block the stent:

- bread, toast
- tough, gristly (hard to chew) or stringy meat
- stringy fruits and vegetables (such as citrus fruit, pineapple, celery, asparagus)
- foods with skins (apples, potato skins)
- food with chunks of fruit or nuts (such as yogurt or ice cream)
- chips (such as potato, corn)
- raw vegetables (including salads).



# Feeding Tube

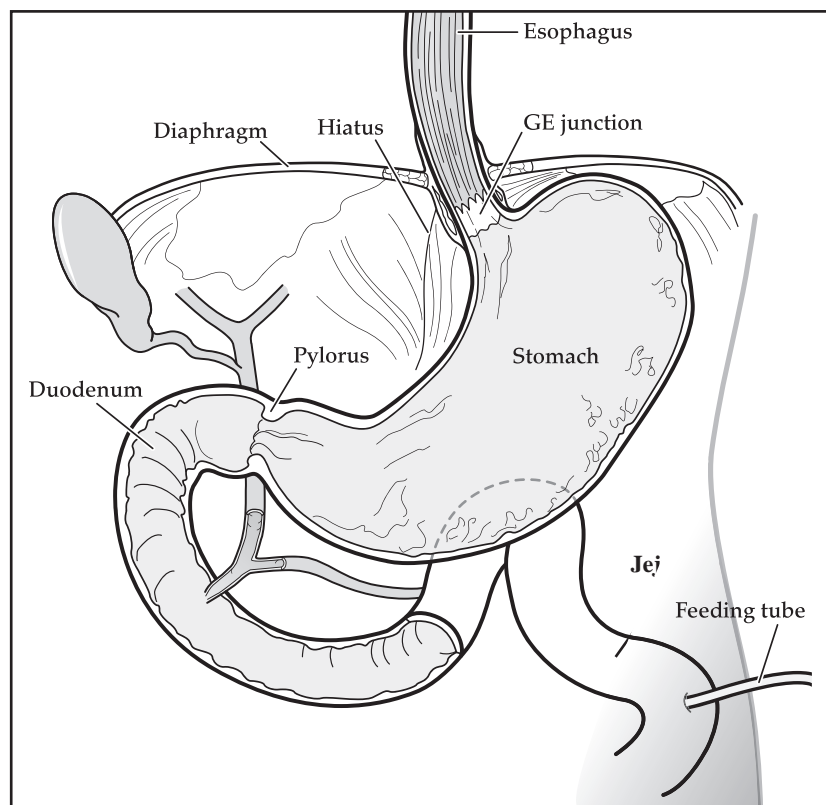
If you are having a lot of trouble swallowing and you are not able to eat or drink or have lost a lot of weight, you may need to use a feeding tube to help you get enough nutrition.

A feeding tube is a soft, flexible tube inserted through the skin of your abdomen into your small intestine or stomach. The tube can be used to provide liquid nutritional support if you are not able to eat enough by mouth. There are different types of feeding tubes:

- A jejunostomy (J-tube) is placed in the small intestine.
- A gastrostomy tube (G tube or PEG) is a feeding tube that is placed in the stomach.

Your doctor will determine which type of feeding tube is best for you.

Tube feeding formula is used through the feeding tube to provide calories, protein and liquids. You will still be able to eat and drink by mouth as you are able. A registered dietitian will provide recommendations on the type of formula. Your nurse will teach you how to care for the feeding tube. Your health care team will guide you on what can and cannot be put through the feeding tube.



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**A feeding tube (J-tube) is placed in the small intestine.**

# Nutrition During Chemotherapy or Radiation Therapy

## Eating Hints: Before, During, and After Cancer Treatment

Eating Hints is a booklet that covers common types of eating problems and ways you can manage them.

You can download a copy at: [cancer.gov/publications/patient-education/eating-hints](https://cancer.gov/publications/patient-education/eating-hints).

You can also ask a member of your health care team for a copy of the booklet.

The goals of nutrition during treatment are to help you:

- maintain energy
- maintain weight and stay hydrated
- fight infection
- tolerate your treatment with less side effects
- heal well after surgery.

To help get enough calories, protein and liquids, you can use high-calorie, high-protein nutrition supplements such as Boost or Ensure. Another option is to use unflavored whey protein powder. This can be added to foods such as soup, broth and smoothies.

Learn more about foods that have protein and ways to add protein to your meals on pages 29 to 32.

Talk with your registered dietitian or health care team if you have questions about getting enough calories, protein and liquids.

## Vitamins, minerals and herbal supplements

The American Cancer Society does not recommend taking vitamins, minerals or herbal supplements during treatment. At this time, there is not enough research to support the benefit or harm of using them during treatment. There is currently no supplement that has shown to lower the risk of esophageal cancer getting worse or coming back.

If there is a supplement you are considering using, please talk with your health care team before taking it. They will help you decide which supplements may be used safely and which ones should be avoided because they may be harmful.

## How to Cope with Nutrition Impact Symptoms

|                      |   |
|----------------------|---|
| <b>Taste changes</b> | <ul style="list-style-type: none"><li>■ If you have a metallic taste, eat finger foods or use plastic silverware. Avoid canned foods and drinks.</li><li>■ If your food tastes too salty, add a sweet flavor such as honey, agave or real maple syrup.</li><li>■ If your food tastes too sweet, add lemon juice, salt or bitters.</li><li>■ If your food tastes bitter, try to sweeten it with honey, agave, real maple syrup or another sweetener.</li><li>■ If your food tastes bland, try adding herbs to brighten the flavor such as rosemary, basil, mint or oregano.</li><li>■ If your mouth is not sensitive and your food tastes bland, you can use:<ul style="list-style-type: none"><li>— mustard, barbecue sauce or other marinades to heighten flavors</li><li>— an acid to help brighten foods such as lemon, lime, orange juice or cider vinegar.</li></ul></li></ul> |
| <b>Constipation</b>  | <ul style="list-style-type: none"><li>■ Drink plenty of liquids (about 8 to 10 large glasses each day).</li><li>■ You can drink warm liquids such as coffee, tea and warm juice (prune, pear or apple) to help stimulate your bowels.</li><li>■ Be sure to include enough fruits, vegetables and fiber in your diet if able and it is OK with your health care team. Canned fruits and vegetables are generally tolerated well, along with cooked fruits and vegetables.</li><li>■ Get regular physical activity – if able – simply walking will help.</li><li>■ Eat consistent meals.</li><li>■ Try to maintain a regular bowel pattern.</li><li>■ Talk to your health care team before you take any laxatives and stool softeners.</li></ul> <p><b>Call your health care team if you do not have a bowel movement for more than 3 days.</b></p>                                   |

|                             |   |
|-----------------------------|---|
| <b>Diarrhea</b>             | <ul style="list-style-type: none"> <li>■ Drink plenty of liquids (about 8 to 10 large glasses each day). Liquids that are cool or room temperature are often better tolerated.</li> <li>■ Eat small meals more often.</li> <li>■ Eat bland foods higher in salt such as saltines, soups, broth and pretzels.</li> <li>■ Eat low-fiber foods such as applesauce, bananas, creamy peanut butter, oatmeal, canned pears or peaches.</li> <li>■ Limit high-fiber foods such as whole-grain breads, fresh and dried fruits, and raw or cooked vegetables.</li> <li>■ Avoid milk or milk products if they make the diarrhea worse. Yogurt and cheese are generally tolerated well.</li> <li>■ Avoid fried, greasy, fatty or spicy foods.</li> <li>■ Avoid caffeine, alcohol and sweets.</li> <li>■ Avoid sugar-free foods with sugar alcohols such as xylitol, sorbitol or mannitol.</li> </ul>   |
| <b>Fatigue (tiredness)</b>  | <ul style="list-style-type: none"> <li>■ Get regular physical activity – if able – activity can reduce fatigue.</li> <li>■ Eat small meals more often.</li> <li>■ Eat meals that have protein, carbohydrates and fat.</li> <li>■ Drink plenty of liquids. Dehydration can make fatigue worse.</li> <li>■ Plan your day so that you have time to rest.</li> <li>■ Take short naps instead of one, long rest period.</li> <li>■ Pace your activities around your energy level.</li> </ul>   |
| <b>Sore mouth or throat</b> | <ul style="list-style-type: none"> <li>■ Eat soft, bland foods.</li> <li>■ Eat creamy or moist foods such as yogurt, cheese, puddings or custards, ice cream, cooked cereal (cream of wheat, cream of rice) or casseroles.</li> <li>■ Choose foods and liquids that are cool or room temperature. Eating hot or cold foods may cause some throat or mouth irritation.</li> <li>■ Moisten food with gravies or sauces.</li> <li>■ Try frozen fruit ice pops or ice chips to help soothe your mouth or throat.</li> <li>■ Avoid foods and juices that are highly acidic such as orange juice, tomato sauces and other citrus fruits.</li> <li>■ Avoid hot, spicy or sugary foods.</li> <li>■ Avoid rough foods such as dry toast or crackers.</li> <li>■ Avoid tobacco and alcohol.</li> <li>■ Avoid mouthwashes with alcohol in them.</li> <li>■ Try a baking soda, saltwater rinse (¼ teaspoon baking soda, ⅛ teaspoon salt, 1 cup warm water). Rinse 3 to 4 times each day and then rinse mouth with plain water after using the rinse.</li> </ul> |

|                            |  |
|----------------------------|--|
| <b>Nausea and vomiting</b> | <ul style="list-style-type: none"> <li>■ Eat small meals more often.</li> <li>■ Try eating bland, starchy foods such as crackers, pancakes or toast.</li> <li>■ Eat foods at room temperature.</li> <li>■ Try to avoid foods with a strong odor.</li> <li>■ Avoid fried, fatty, greasy or spicy foods.</li> <li>■ Drink more liquids: <ul style="list-style-type: none"> <li>— clear liquids such as water, broth, ginger ale, fruit juices</li> <li>— try Popsicles®, Jell-O®, ice chips and sport drinks.</li> </ul> </li> <li>■ Ginger (such as ginger snaps, ginger ale, crystallized ginger) may help with nausea.</li> <li>■ Take anti-nausea medicine as prescribed.</li> </ul>   |
| <b>Decreased appetite</b>  | <ul style="list-style-type: none"> <li>■ Try eating 5 to 6 small meals each day instead of 3 larger meals.</li> <li>■ Use a smaller plate instead of a larger plate to help make meals more manageable.</li> <li>■ Have high-calorie, high-protein food options available such as nut butters, eggs, cheese or trail mix.</li> <li>■ Avoid drinking liquids during meals.</li> <li>■ Drink liquids that are higher in calories such as nutrition supplements (Boost, Ensure), lemonade or soups.</li> <li>■ Try to eat when you are feeling your best.</li> <li>■ Get regular physical activity – if able – start slowly and increase over time.</li> </ul> <p><b>If pain is causing your decreased appetite, please talk to your health care team about ways to manage your pain.</b></p> |
| <b>Sensitivity to cold</b> | <ul style="list-style-type: none"> <li>■ Avoid cold foods and liquids.</li> <li>■ Eat and drink warm or room temperature foods and liquids such as broth, soup, tea or coffee.</li> <li>■ Use a pair of oven mitts, cotton gloves or a hand towel to take items out of the refrigerator or freezer.</li> </ul>   |
| <b>Trouble swallowing</b>  | <ul style="list-style-type: none"> <li>■ Eat small meals more often.</li> <li>■ Cut food into smaller pieces and chew well.</li> <li>■ Puree food if needed.</li> <li>■ Drink liquids to help meet your nutrition needs such as nutrition supplements (Boost, Ensure), juice, milk, gelatin or pudding, ice cream, milk shakes or smoothies.</li> </ul> <p>If you have seen a speech-language pathologist, please follow the instructions given to you for eating.</p>   |

# Nutrition After Surgery

## Tip

You can learn more about an esophagectomy in chapter 4.

## Important

Follow your health care team's instructions on when you can start eating and drinking again.

## Important

You may only be drinking liquids while you are in the hospital. At your follow-up visit, you will get more instructions on your diet.

## Feeding tube

If you have an esophagectomy, a feeding tube (J-tube) may be placed in your small intestine during surgery. Formula will be given through the feeding tube to help you get enough nutrition while you heal after surgery.

- You will go home with the feeding tube in place. Before you leave the hospital, a case manager will work with you and a home care company to have tube feeding supplies delivered to your home.
- A registered dietitian will provide recommendations on the type of formula and how much will be given through your feeding tube each hour (the rate).
- Your nurse will teach you how to care for the feeding tube.
- At first, the tube feedings are given at a slower rate over a longer period of time. The rate will slowly increase and the hours you will use the feeding tube will decrease. Tube feedings are often given overnight which will allow you to try to eat more during the day.

## Diet changes

Your health care team will monitor your progress and decide when your stomach and esophagus have healed enough so you can start eating and drinking again. Your diet will go from clear liquids to full liquids to a soft diet.

Your stomach will not be able to hold as much food or liquid as it did before your surgery. It may empty more quickly which is called dumping syndrome. (Learn more on how to avoid dumping syndrome on page 26.) Your stomach may also empty more slowly, which can cause bloating and indigestion. If this happens, talk to your health care team about how to manage these symptoms.

To help avoid symptoms such as diarrhea, nausea, stomach cramps and feeling full too early:

- eat 5 to 6 small meals a day
- eat foods and drink liquids that are room temperature
- eat soft, bland foods that are high in fiber such as oatmeal and bananas.

Ask your surgeon when you can drink carbonated liquids again such as soft drinks and fizzy water.

## Important

After surgery, you have a life-long risk of reflux and aspiration. Learn more about this risk, including ways to help prevent reflux and aspiration on pages 27 to 28.

## Tip

You may also have intolerances to alcohol, caffeine and carbonation.

## Reflux

You may notice reflux after surgery (food or liquids that come back up into your throat or mouth). Reflux can happen because the valve between your stomach and esophagus has been removed. To help avoid reflux:

- Sit upright during meals and for at least 1 hour after eating.
- Do not eat or drink 2 to 3 hours before lying down. (This time may vary. You may have to stop eating or drinking several hours before bedtime.)
- Elevate the head of your bed or use a wedge pillow to prop yourself up.

## Take small bites, eat slowly and chew well

It is very important to take small bites, eat slowly and chew your food well. This will help with digestion. Taking the extra time to eat will help keep you from feeling too full.

You should try to drink liquids separately from meals so that you can eat more solid food without getting too full. In general, it is better not to drink more than 4 ounces (½ cup) of liquids with meals.

## Food intolerances

You may experience some food intolerances after surgery (foods that cause a reaction). The most common foods are sugar, fat and dairy. If you are noticing food intolerances talk to your health care team. Keep a food journal and write down the food you eat and the symptoms you are having so your health care team can best guide you.

If you are trying a new food, always try a small amount at first. Everyone is different and some foods might work well for one person but may not work well for another. If you do not tolerate a certain food, avoid it for 2 to 3 weeks, and then try it again.

# Common Side Effects After Surgery

The following are suggestions to help manage some common side effects after surgery.

|  |  |
|--|--|
| <p><b>Diarrhea</b></p>                   | <ul style="list-style-type: none"> <li>■ Write down in your food journal what you are eating to help determine what is causing your diarrhea (such as sugar, dairy, fat).</li> <li>■ Eat low-fiber foods such as applesauce, bananas, creamy peanut butter, oatmeal, canned pears or peaches.</li> <li>■ Limit high-fiber foods such as whole-grain breads, fresh and dried fruits, and raw or cooked vegetables.</li> </ul> <p>Go to page 22 for more ways to cope with diarrhea.</p> |
| <p><b>Dumping Syndrome</b></p>           | <ul style="list-style-type: none"> <li>■ Limit foods and beverages that are high in sugar.</li> <li>■ Try dairy- or lactose-free foods.</li> <li>■ Eat small meals more often.</li> <li>■ If you are using butter, margarine or oil, try to have less than 1 tablespoon each meal.</li> <li>■ Drink liquids 30 minutes before or after meals, instead of during meals.</li> <li>■ Eat slowly and chew foods well.</li> </ul>   |
| <p><b>Fullness</b></p>                   | <ul style="list-style-type: none"> <li>■ Eat small meals more often.</li> <li>■ Drink liquids between meals only.</li> <li>■ Eat slowly.</li> </ul>  |
| <p><b>Nausea<br/>(upset stomach)</b></p> | <ul style="list-style-type: none"> <li>■ Eat more bland foods (limit spicy, rich or greasy foods).</li> <li>■ Eat slowly.</li> <li>■ Eat small meals more often.</li> <li>■ Stay upright after eating.</li> </ul> <p>Go to page 23 for more ways to cope with nausea.</p>  |
| <p><b>Reflux</b></p>                     | <ul style="list-style-type: none"> <li>■ Eat small meals more often.</li> <li>■ Sit upright during meals and for at least 1 hour after eating.</li> <li>■ Wear loose-fitting clothes around your stomach.</li> <li>■ Do not eat or drink 2 to 3 hours before lying down.</li> </ul>  |
| <p><b>Trouble swallowing</b></p>         | <ul style="list-style-type: none"> <li>■ Cut up food into small pieces.</li> <li>■ Chew foods well.</li> <li>■ Eat moist or soft foods.</li> <li>■ Avoid rough textures.</li> </ul>  |



# Risk of Reflux and Aspiration

You are at an increased risk of reflux and aspiration because of the location of the tumor and some of the procedures needed to treat esophageal cancer.

- Reflux is the movement of food and stomach acid back up into your esophagus and sometimes into your mouth and nose.
- Aspiration is when food or liquid goes into your airway instead of your esophagus. This can lead to a lung infection or a more serious condition called aspiration pneumonitis.

## Risk factors

The following risk factors can increase your risk of developing reflux and aspiration.

- **esophageal stent:** If you need to have an esophageal stent placed to hold open the lower esophagus and lower esophageal sphincter (LES), you may experience reflux and have an increased risk for aspiration. The LES is a valve between your esophagus and stomach. It opens to let food into your stomach and then closes.
- **esophagectomy:** If you are having surgery, a portion of the esophagus that contains the LES is removed. The stomach is made into a tube-shape to replace the esophagus. Without the LES, foods and liquids could reflux back up into your upper esophagus and possibly your lungs.
- **esophagectomy with a neck incision:** If you are having an esophagectomy with a neck incision, there is a risk of stretching or damaging a nerve that controls your vocal cords.
  - This nerve (called the recurrent laryngeal nerve) allows the vocal cord to close when you are swallowing food and liquids to protect your airway.
  - When the nerve is stretched, it does not close properly and you could have food and especially liquids enter into your airway.
  - The nerve injury is almost always a temporary condition but you may need to work with a speech and language specialist and an ear, nose and throat (ENT) doctor to help manage this condition.
- **feeling weak, tired or less alert:** When you are healing after surgery or you are tired or sleeping, you could have trouble controlling your saliva or phlegm, and these could enter your lungs, especially if you are lying flat.

## Important

If you have an esophagectomy, you will have a life-long risk of aspiration. You should tell your health care team anytime you are going to have a procedure or anesthesia so that your airway can be protected.

You may choose to wear a medical alert bracelet to remind others caring for you.

## Signs and symptoms of aspiration

The signs and symptoms of aspiration include

- coughing
- gagging
- choking
- throat clearing
- vomiting (throwing up)
- change in voice

## When to call your health care provider

Call your health care provider right away or have someone drive you to the nearest Emergency Department if you have:

- a temperature of 100.4 or higher
- new or worsening cough or a cough with mucous
- shortness of breath, wheezing
- pain in chest or pain with breathing.

## How to prevent reflux and aspiration

To help prevent reflux and aspiration:

- Sit upright during meals and for at least 1 hour after eating.
- Eat slowly and chew your food carefully.
- Do not eat or drink 2 to 3 hours before lying down. (This time may vary. You may have to stop eating or drinking several hours before bedtime.)
- Elevate the head of your bed 6 inches or use a wedge pillow to prop yourself up.
- Practice special swallowing techniques, if recommended by a speech and language specialists.

# Foods That Have Protein

The following charts list examples of foods that contain protein. Not all foods are listed. Always read the nutrition facts label to find out how much protein is in each serving of a food.

| Beans                 |              |               |
|-----------------------|--------------|---------------|
| Food                  | Serving Size | Protein Grams |
| black beans (cooked)  | ½ cup        | 8             |
| hummus (fresh)        | ½ cup        | 6             |
| kidney beans (canned) | ½ cup        | 7             |
| navy beans (canned)   | ½ cup        | 10            |
| refried beans         | ½ cup        | 6             |
| soybeans (boiled)     | ½ cup        | 14            |

| Dairy Products               |               |               |
|------------------------------|---------------|---------------|
| Food                         | Serving Size  | Protein Grams |
| cheddar cheese               | 1 ½ ounces    | 11            |
| cottage cheese (2%)          | ½ cup         | 12            |
| cream cheese                 | 1 ½ ounces    | 3             |
| ice cream (vanilla)          | 1 ½ cups      | 7             |
| milkshake                    | 1 ½ cups      | 12            |
| milk (buttermilk)            | 1 cup         | 8             |
| milk (2%)                    | 1 cup         | 8             |
| milk (skim)                  | 1 cup         | 8             |
| mozzarella cheese (shredded) | 1 ½ ounces    | 10            |
| Parmesan cheese (grated)     | 2 tablespoons | 4             |
| yogurt (low fat)             | 1 cup         | 13            |
| yogurt, Greek (low fat)      | 1 cup         | 23            |

| Eggs          |              |               |
|---------------|--------------|---------------|
| Food          | Serving Size | Protein Grams |
| scrambled     | ½ cup        | 12            |
| substitute    | ½ cup        | 12            |
| whole (large) | 1 egg        | 6             |

(over)

## Meat, Poultry and Fish

| Food                        | Serving Size | Protein Grams |
|-----------------------------|--------------|---------------|
| bacon                       | 1 ounce      | 9             |
| beef (ground, lean)         | 3 ounces     | 21            |
| chicken breast (cooked)     | 3 ounces     | 26            |
| cod (Atlantic)              | 3 ounces     | 19            |
| haddock (smoked)            | 3 ounces     | 21            |
| ham (meat only, roasted)    | 3 ounces     | 21            |
| hot dog (beef)              | 1 each       | 7             |
| pork (ground)               | 3 ounces     | 22            |
| salmon (Atlantic)           | 3 ounces     | 22            |
| sausage link (pork or beef) | 1 link       | 9             |
| shrimp (fresh)              | 3 ounces     | 12            |
| tuna (canned, light)        | 3 ounces     | 17            |
| turkey (light meat)         | 3 ounces     | 25            |
| turkey (ground)             | 3 ounces     | 23            |

## Nuts

| Food                              | Serving Size  | Protein Grams |
|-----------------------------------|---------------|---------------|
| almonds (toasted)                 | ½ cup         | 14            |
| cashews (dry roasted)             | ½ cup         | 10            |
| peanut butter (chunky)            | 2 tablespoons | 8             |
| peanut butter (creamy)            | 2 tablespoons | 7             |
| peanuts (dry roasted)             | ½ cup         | 17            |
| pistachios (dry roasted)          | ½ cup         | 13            |
| sunflower seeds (dry roasted)     | ½ cup         | 12            |
| walnuts (English, dried, chopped) | ½ cup         | 9             |

## Soups

| Food                              | Serving Size | Protein Grams |
|-----------------------------------|--------------|---------------|
| bean with ham (chunky)            | 1 cup        | 13            |
| cheese (made with water)          | 1 cup        | 6             |
| cheese (made with milk)           | 1 cup        | 9             |
| chicken noodle                    | 1 cup        | 4             |
| clam chowder                      | 1 cup        | 9             |
| cream of celery (made with milk)  | 1 cup        | 6             |
| cream of chicken (made with milk) | 1 cup        | 7             |
| cream of potato (made with milk)  | 1 cup        | 6             |
| tomato (made with milk)           | 1 cup        | 6             |

# Ways to Add Protein to Your Meals and Snacks

## High-protein Foods

High-protein foods include:

- eggs
- yogurt
- dried beans and peas
- cheese (including ricotta) and cottage cheese
- peanut butter
- meats (poultry, fish, beef, pork)
- egg, tuna, ham or chicken salad
- custard and pudding
- nuts and seeds.

Try to include more of these foods in your meals and snacks. The following tips can help:

- Add peanut butter to bread, toast, crackers, waffles and pancakes.
- Use peanut butter or yogurt as a dip for raw fruits and vegetables.
- Mix cottage or ricotta cheese into casseroles, lasagna, spaghetti dishes, scrambled eggs, pudding, gelatin salads, desserts and pancake batter, or as a topping for baked potatoes.
- Mix grated cheese into sauces, vegetables, casseroles or potatoes.
- Melt cheese on sandwiches or hamburgers.
- Add nuts or sunflower seeds to casseroles, muffins, breads, cookies, pancakes and waffles.

- Sprinkle nuts and seeds on salads, fruit, cereal, ice cream and yogurt.
- Add chopped or ground meat to soups, casseroles, salads, omelettes or soufflés.
- Add chopped hard cooked eggs to salads or casseroles.

Ready-to-drink nutrition beverages can also be a good option. Ask your dietitian if this option is right for you.

## High-protein Milk Recipe

You can make high-protein milk by adding 1 cup dry powdered skim milk to 1 quart of liquid whole milk (not water). Mix well and chill. (It is better if left refrigerated overnight.)

High-protein milk can be used in any recipe where regular milk is used. This will add calories and protein without having to eat more to meet your nutritional needs.

You may also add high-protein milk to:

- cream soups
- cooked cereal or cold cereal
- pudding or custard
- hot chocolate
- milkshakes
- scrambled eggs
- mashed potatoes
- pancakes.

**If you do not have any high-protein milk made**, you can add 3 tablespoons of dry skim milk powder directly to the food in addition to any regular milk in the recipe.

You can add the 3 tablespoons of milk powder right to:

- any creamed soup
- meatloaf or ground meat patties
- egg salad, deviled ham or tuna salad
- mayonnaise spread on sandwich bread
- casserole dishes that call for creamed soup
- gravies or sauces
- scalloped potatoes, mashed potatoes or creamed peas
- puddings and custards
- yogurt, milkshakes, ice cream, sherbet or frozen desserts
- scrambled eggs
- cooked cereal.

Three tablespoons of milk powder add 40 calories and 4 grams of protein to your food.

You can also add 4 to 6 tablespoons of milk powder to any of the following recipes:

- muffins, cornbread, pancakes, waffles, rolls and bread
- cake, cookies, gingerbread, cookie bars and some candies
- cream sauces and poultry gravies
- cream pie and cake fillings
- ice cream, sherbet and frozen desserts
- fruit cobblers, bread or rice pudding or steam pudding
- gelatin salads and desserts.

**High-protein eggnog** can be made by using store-bought eggnog and adding milk powder, or using store-bought dried eggnog mix and adding high-protein milk.

### **Whom to Call With Questions**

Talk with your dietitian if you have any questions about how to add protein to your meals and snacks.

# Chapter 3: Systemic Therapy and Radiation Therapy

## Systemic Therapy

Systemic therapy is treatment prescribed by a medical oncologist. This treatment affects your entire body. Medicine is used to help slow the growth of cancer cells or destroy them. Types of systemic therapy include:

- chemotherapy
- targeted therapy (such as immunotherapy)

### Chemotherapy

Chemotherapy is a medicine most often given through an IV (intravenous) line. It destroys fast-growing cells throughout your body, which includes cancer cells. However, this medicine can also affect normal, healthy cells that are fast-growing. Damage to healthy cells can cause side effects such as fatigue (tiredness), nausea (upset stomach), decreased blood counts, numbness and tingling in your fingers and toes. Your medical oncologist will talk to you about your chemotherapy and possible side effects.

### Advanced Cancer

If cancer had spread to other organs, systemic therapy may not be able to cure cancer, but it can be used to make the tumor smaller, reduce symptoms and prolong your life.

### When chemotherapy is used

Chemotherapy can be used throughout treatment.

- **Neoadjuvant chemotherapy** is done before surgery and often at the same time as radiation therapy. The goal is to stop the cancer from spreading and make a tumor in the esophagus or lymph node smaller.
- **Adjuvant chemotherapy** is done after surgery. The goal is to destroy any cancer cells that may be left.

Whether chemotherapy is given before or after surgery, the goal is to destroy any cancer cells found elsewhere in your body.

### Port

A port, or mediport, may be placed to give you medicines through an IV line. It is a small, round device that is usually placed under the skin in your upper chest. The device is attached to a catheter (a thin, flexible tube) that enters a large blood vessel. A special needle is used to access the port without the need to poke the small veins in your hands or arms.

## Important

Your health care provider may have additional tests done on the tissue samples you had taken to help guide your cancer treatment.

## During chemotherapy

During each treatment you can expect the following:

- You will go to your medical oncologist's office or a chemotherapy clinic.
- You will sit in a comfortable chair such as a recliner.
- You will have an intravenous (IV) line started or your port will be accessed with a special needle. This is done to give you fluids and medicines, including chemotherapy.
- During your treatment, you can watch TV, read, rest, or visit with a family member or friend.

## Targeted therapy

Targeted therapy is medicine designed to target specific features of cancer cells and stop them from growing and spreading. The most common side effects of targeted therapy are rash, joint pain, headache, fever, chills and diarrhea. You will need additional tests to see if this treatment is right for you.

## Immunotherapy

Immunotherapy is a treatment that helps your immune system fight cancer. Some side effects of immunotherapy are fever, chills, muscle or joint pain, headache, fatigue (tiredness) and inflammatory reactions.



# Radiation Therapy

Radiation therapy uses high-energy radiation (X-rays) to shrink or destroy cancer cells, or help control symptoms. During treatment, healthy cells are also affected by the radiation.

To decrease the risk to healthy cells, the radiation will be given in a way to reduce your exposure. Your radiation oncology team will help you get through the treatments feeling the best you can, with the least amount of side effects.

## Radiation therapy treatment

You will have a planning session with your radiation oncology team before your first radiation treatment. The radiation therapist may put small marks (tattoos) on your skin to mark the treatment area or create a body mold to help get you into the right position for treatment.

During each treatment you can expect the following:

- The therapists will position you on the treatment table.
- You will be alone during the treatment. The therapists will watch you closely on a monitor and listen to you on an intercom.
- The machine will move around you to deliver the radiation.

## About external beam radiation therapy

- The radiation therapy treatments are painless.
- You will not be radioactive in any way. You are of no risk to your loved ones.
- Radiation therapy treatment varies from person to person. It is common to have radiation therapy 5 days a week, Monday through Friday, for several weeks.
- Plan 30 minutes for each treatment appointment, but treatment time may be from 5 to 30 minutes.
- Your radiation oncologist will meet with you every week to monitor your progress and talk about any concerns.

Talk with your radiation therapist, radiation oncologist or nurse if you have any questions or concerns about radiation treatments or side effects.

## Clinical trials

Clinical trials (cancer treatment studies) are done to try to improve the prevention, detection, and treatment of esophageal cancer. If you are interested in being part of a clinical trial, talk with your medical oncologist to see if there is a study that would be right for you.

# Chapter 4: Surgery

## Esophagectomy

Surgeon's Office  
Phone Number

---

As part of your treatment plan, having surgery may be recommended. This surgery is called an esophagectomy.

During surgery, a portion of the esophagus and stomach are removed. The remaining stomach is then moved up and attached to the remaining esophagus. The new connection between the remaining stomach and remaining esophagus is called an anastomosis. Nearby lymph nodes may also be removed and tested for cancer cells.

In many cases, surgery is combined with other treatments such as chemotherapy, radiation, or both.

## Types of Surgery

There are three common ways an esophagectomy can be done. The right surgery for you depends on the location and size of your tumor and your overall health. Your surgeon will explain which surgery is right for you.

### Important

During surgery, you will also have a feeding tube placed in your small intestine, called a jejunostomy tube (J-tube).

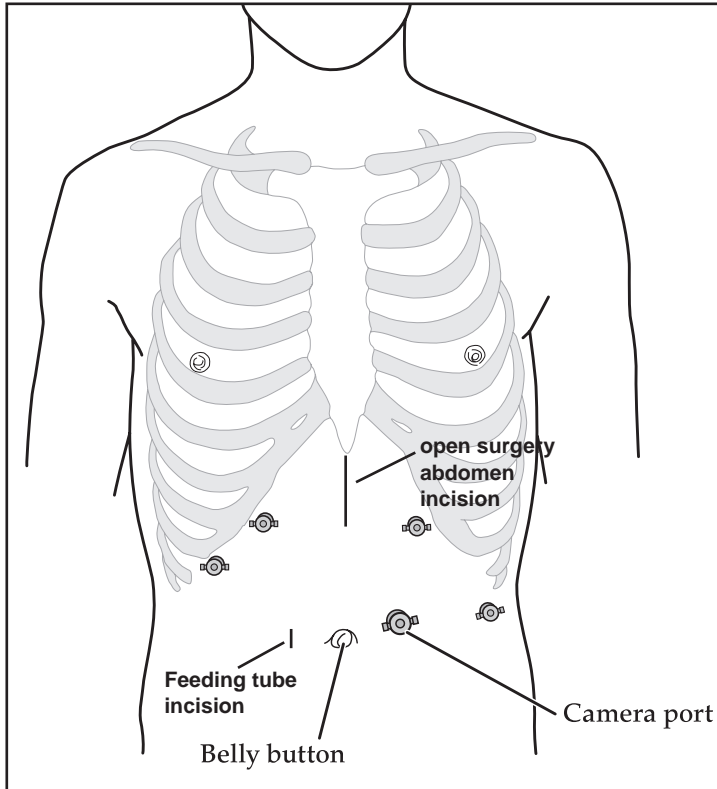
- Ivor Lewis esophagectomy
- transhiatal esophagectomy
- McKeown esophagectomy.

Each surgery can be done two different ways.

- minimally invasive surgery:** Small incisions are made in your abdomen, neck or chest. The surgeon will insert a small camera and medical instruments through the incisions to remove the cancer.
- open surgery:** One or more larger incisions are made in your abdomen, and possibly in your chest or neck, to remove the cancer.

## □ Ivor Lewis esophagectomy

An Ivor Lewis esophagectomy removes the tumor, nearby lymph nodes and some normal tissue around the tumor through incisions made in the chest and abdomen. The reconnection (anastomosis) is located in the upper chest



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The exact locations of your incisions can change. Yours may not be in the spots pictured.

### Minimally invasive surgery

#### Laparoscopic incision sites

The surgeon will make five incisions in your abdomen, about the size of a dime. These incisions are called laparoscopic ports. The surgeon will use the video camera and medical instruments through the ports.

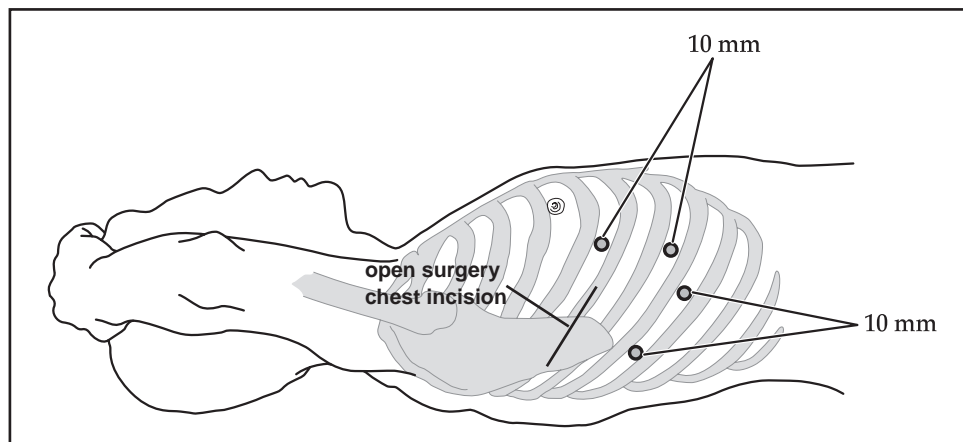
#### Thoracoscopic incision sites

The thoracic (chest) surgeon will lead this portion of surgery. Your right lung will be deflated for a short time so the surgeon can have better access to your esophagus.

While lying on your left side, the surgeon will make four incisions, each about one-half inch, on the right side of your chest (thoracoscopy). These incisions, or ports, are used for the video camera and medical instruments used during your surgery.

#### Open surgery

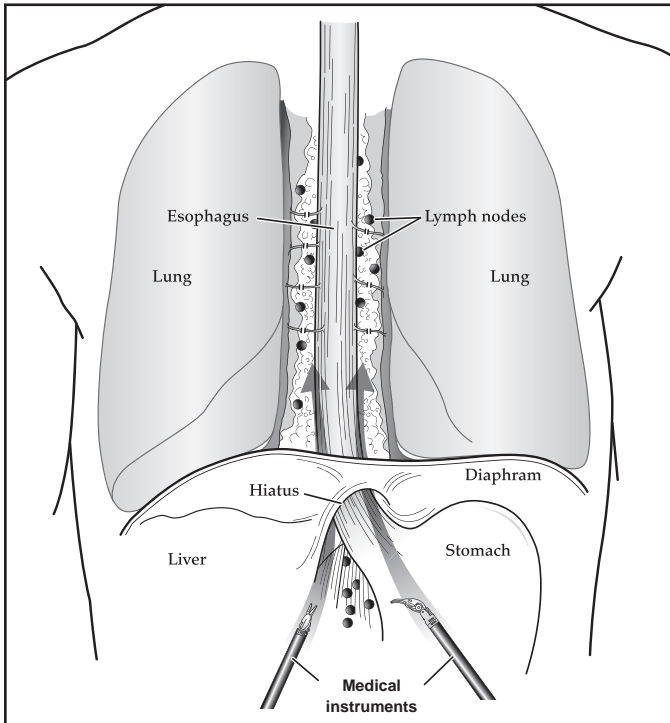
The surgeon will make one incision in your abdomen (laparotomy) and one incision on the right side of your chest (thoracotomy).



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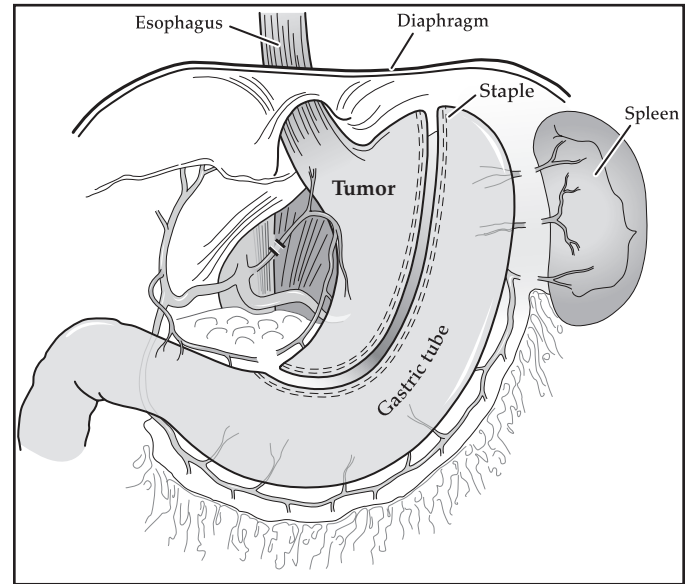
The exact locations of your incisions can change. Yours may not be in the spots pictured.

## 1. Moving the esophagus



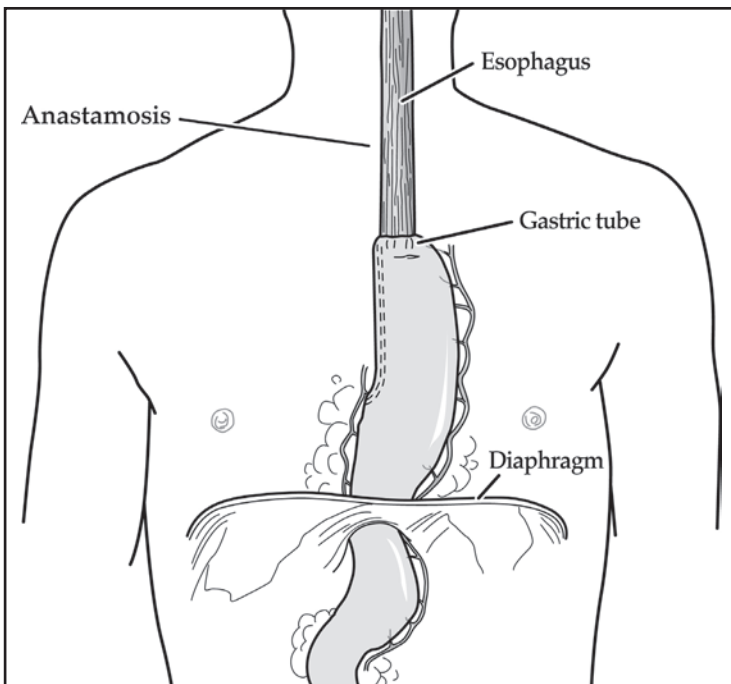
The surgeon will loosen (or free up) the esophagus by going through the natural opening in the diaphragm (hiatus).

## 2. Completing the gastric tube



The surgeon will divide the stomach. The upper part of the stomach will be removed with a portion of the esophagus.

## 3. The esophago-gastric connection



The stomach is attached to the esophagus. (The connection is known as the anastamosis.) The surgeon will insert a feeding tube into the upper part of the small intestine. This is called a jejunostomy tube and will be used to provide nutrition during your recovery.

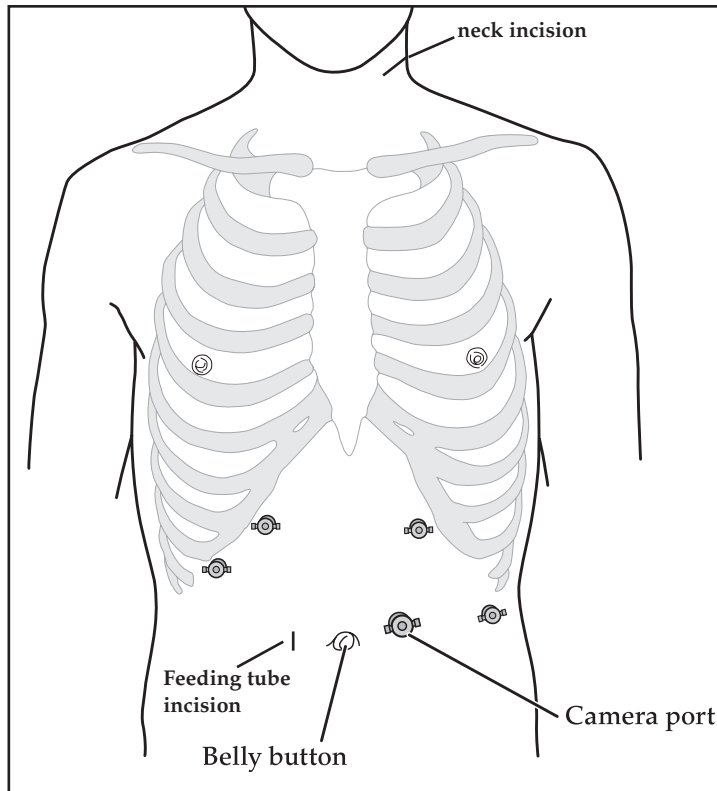
## □ transhiatal esophagectomy

A transhiatal esophagectomy removes the tumor, nearby lymph nodes and some normal tissue around the tumor through incisions made in the neck and abdomen. The reconnection (anastomosis) is located in the lower neck.

### Minimally invasive surgery

#### Laparoscopic incision sites

The surgeon will make five incisions in your abdomen, about the size of a dime. These incisions are called laparoscopic ports. The surgeon will use the video camera and medical instruments through the ports. A slightly longer incision will also be made in your neck.

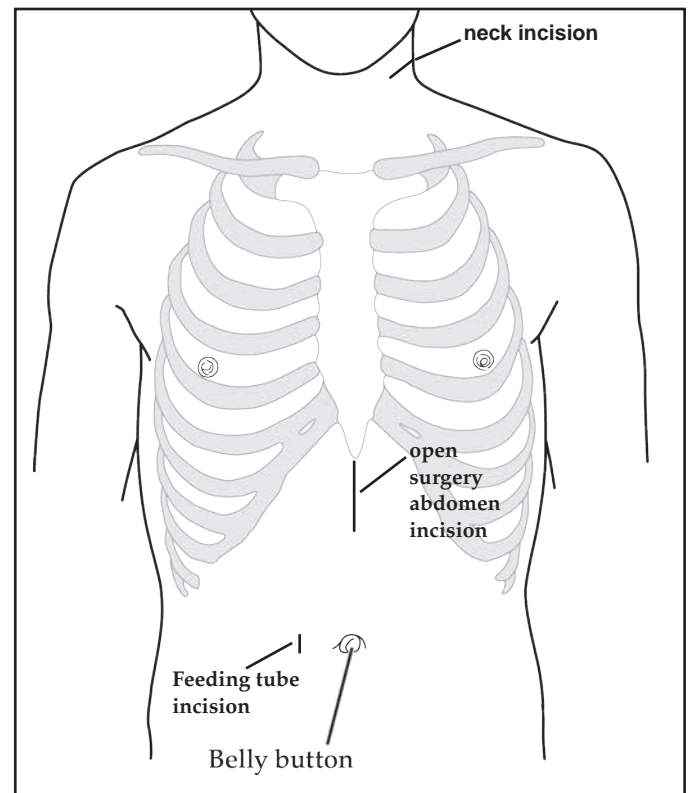


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**The exact locations of your incisions can change. Yours may not be in the spots pictured.**

### Open surgery

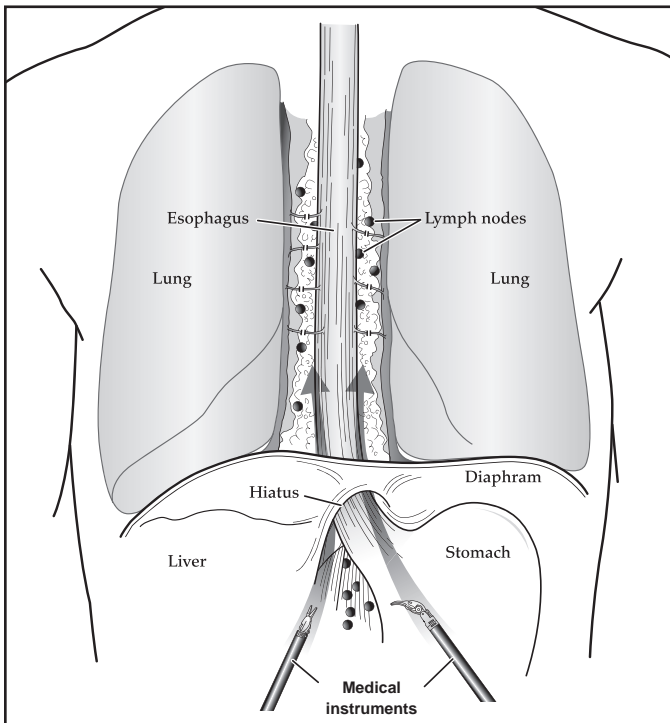
The surgeon will make one incision in your abdomen (laparotomy) and one incision on the left side of your neck.



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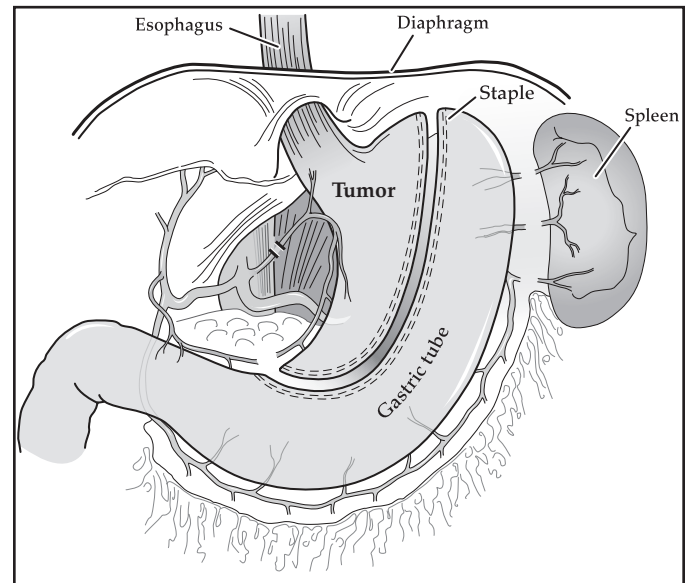
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## 1. Moving the esophagus



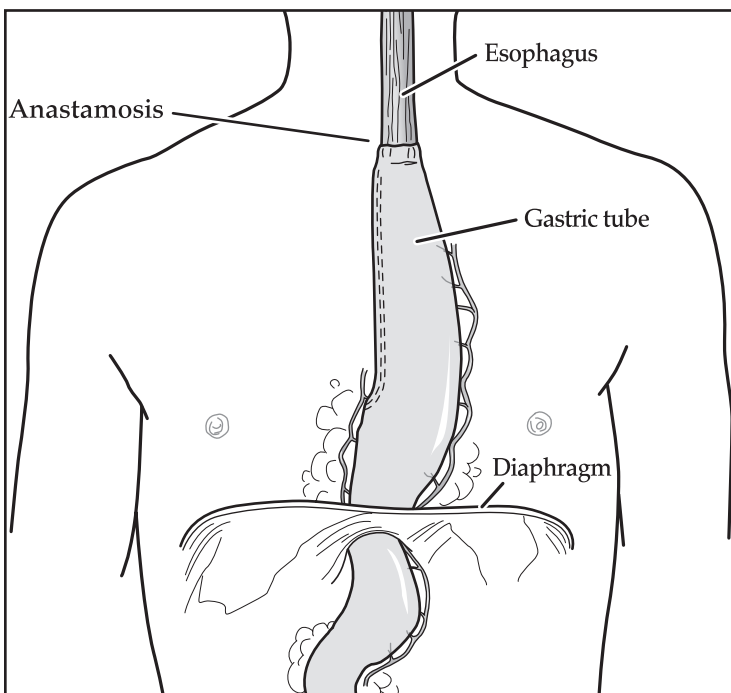
The surgeon will loosen (or free up) the esophagus by going through the natural opening in the diaphragm (hiatus).

## 2. Completing the gastric tube



The surgeon will divide the stomach. The upper part of the stomach will be removed with a portion of the esophagus.

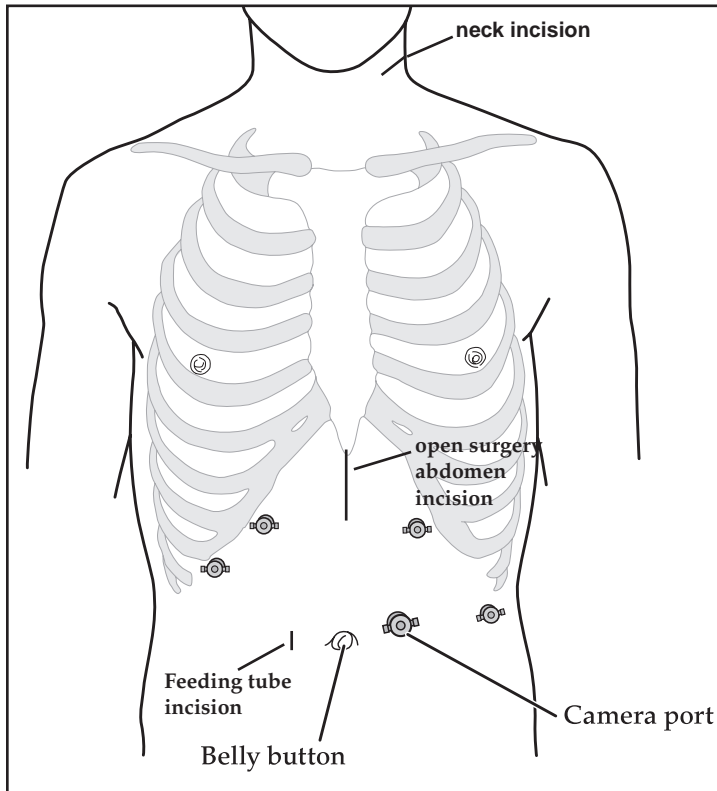
## 3. The esophago-gastric connection



The stomach is attached to the esophagus. (The connection is known as the anastomosis.) The surgeon will insert a feeding tube into the upper part of the small intestine. This is called a jejunostomy tube and will be used to provide nutrition during your recovery.

## □ McKeown esophagectomy

A McKeown esophagectomy removes the tumor, nearby lymph nodes and some normal tissue around the tumor through incisions made in the chest, abdomen and neck. The reconnection (anastomosis) is located in the lower neck.



© Allina Health System

The exact locations of your incisions can change. Yours may not be in the spots pictured.

### Minimally invasive surgery

#### Laparoscopic incision sites

The surgeon will make five incisions in your abdomen, about the size of a dime. These incisions are called laparoscopic ports. The surgeon will use the video camera and medical instruments through the ports. An incision will also be made on the left side of your neck.

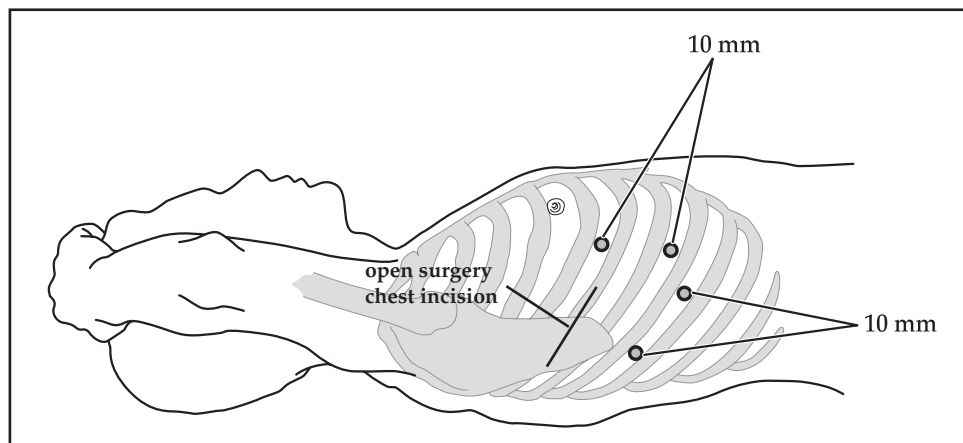
#### Thoracoscopic incision sites

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The surgeon will make four incisions, each about one-half inch, on the right side of your chest (thoracoscopy). These incisions, or ports, are used for the video camera and medical instruments used during your surgery.

#### Open surgery

The surgeon will make one incision in your abdomen (laparotomy), one incision on the right side of your chest (thoracotomy) and an incision on the left side of your neck.

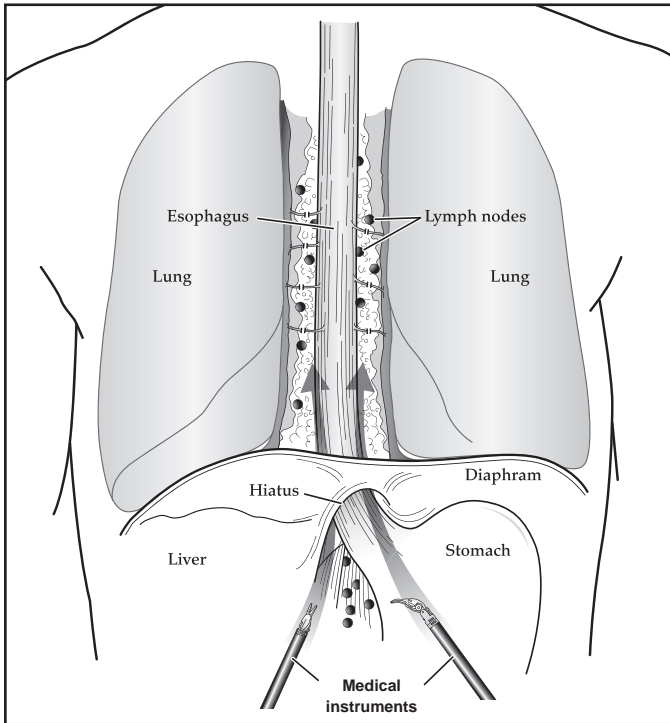


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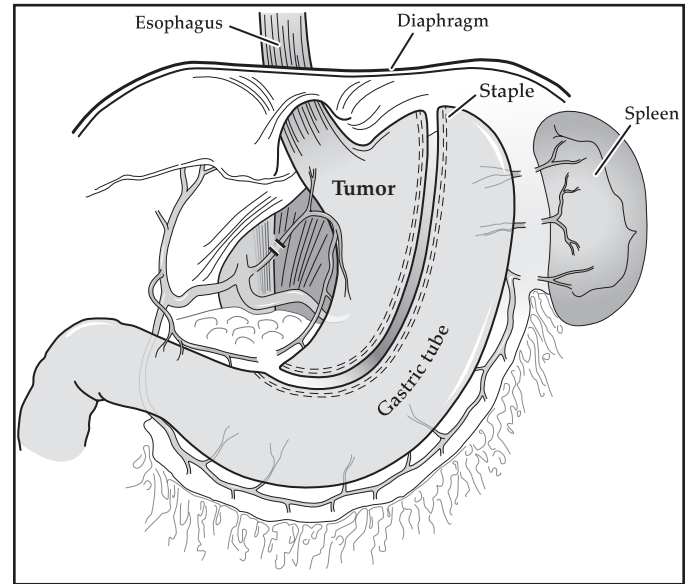


## 1. Moving the esophagus



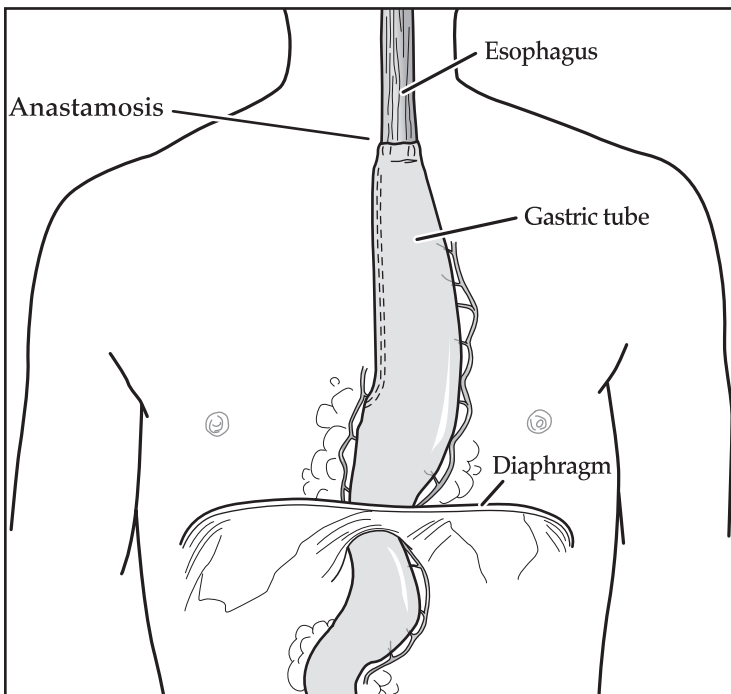
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## 2. Completing the gastric tube



The surgeon will divide the stomach. The upper part of the stomach will be removed with a portion of the esophagus.

## 3. The esophago-gastric connection



The stomach is attached to the esophagus. (The connection is known as the anastomosis.) The surgeon will insert a feeding tube into the upper part of the small intestine. This is called a jejunostomy tube and will be used to provide nutrition during your recovery.

## Risks or Complications of Surgery

All surgeries have some risk. Possible risks or complications of an esophagectomy include:

- general anesthesia risks
- bleeding that requires a blood transfusion or another surgery
- leak from anastomosis (surgical connection)
- infection at an incision site
- prolonged pain or discomfort at the chest incision site
- feeding tube complications
- aspiration (food or liquid goes into your airway instead of your esophagus)
- pneumonia
- other respiratory problems that require breathing support
- vocal cord injury causing voice changes or problems with swallowing (This is usually temporary.)
- heart attack, abnormal heart rhythm, stroke or blood clots
- weakness, loss of muscle strength that requires rehabilitation
- scarring or tightening of the new connection between the stomach and esophagus, known as stricture (Many patients need at least one — possibly several — stretching procedures to keep the connection open.)
- the possibility that the cancer cannot be removed.

You may have other complications that are not on this list. Please talk with your surgeon about any concerns or questions you have.

# Chapter 5: Preparing for Your Surgery

This chapter includes important information on what you need to know before surgery and how to prepare for your surgery. Please read through this information carefully.

You will receive a call from your surgeon's scheduler with the date and time of your surgery. You will get additional pre-surgery instructions from a member of your health care team.

## Insurance Coverage

Health care benefits change and differ from plan to plan and provider to provider. It is important for you to understand your health care benefits before your surgery.

Now is a good time to call your insurance provider and find out exactly what is and is not covered under your plan, and how much you have to pay yourself.

## Health Care Directive

### Planning for your future health care

A health care directive is a written document of your health care choices in case illness or injury prevents you from telling them yourself.

Members of your care circle (family, friends or others close to you) and your health care team use this to interpret and understand your wishes, goals and values for future health care.

You can write:

- who you want to make your health care choices (known as a health care agent)
- what kind of care and treatment you do or do not want
- your wishes about the quality of your life.

### How to get started

Go to [allinahealth.org/hcd](https://allinahealth.org/hcd) or scan the QR code.

- Print the form of your choice. You can also ask your health care provider for a copy.
- Read the [guide](#) if you need help filling out your health care directive.

You can also fill out a free, secure health care directive online. Go to [account.allinahealth.org](https://account.allinahealth.org) to create an account.



Scan the QR code for the health care directive and guide.

## Your Health History and Physical Exam

You will need to have a health history and physical exam before your surgery. This exam needs to be done within 30 days before your scheduled surgery. It is recommended to have the exam done 14 to 30 days before surgery to allow time for additional testing, if needed.

### Important

If you take any medicines, including blood thinners, it is important to talk with your primary care provider to get instructions on how to take your medicines before surgery.

## Cardiovascular Pulmonary Stress Test

Your surgeon may recommend a cardiopulmonary stress test before your surgery. This test helps your surgeon measure how well your heart and lungs work while exercising. You will either walk on a treadmill or ride a stationary bike.

## Quit Tobacco Before Your Surgery

If you are currently using tobacco products, talk to your health care team about resources to help you quit before your surgery. See chapter 8 for more information and resources.

## Activity

- During the days before your surgery stay active, walk or continue with your normal exercise routine. This will help your recovery while in the hospital.
- The Cancer Rehabilitation Program offers consultations by health care providers who specialize in physical medicine and rehabilitation, and therapists who have advanced training in cancer rehabilitation. Before your surgery, rehabilitation can help build your overall strength and endurance. Learn more about this program in chapter 8.

## Preparing Your Mind and Body for Surgery

Studies have shown that if your mind and body are ready for surgery you may sleep better and have less anxiety and pain. Your hospital stay may also be shorter.

There are some skills you can learn to help you to prepare your mind and body for your surgery. These skills include:

- meditation and relaxation techniques
- breathing techniques
- guided imagery and biofeedback
- self-care practices
- pain management techniques.

Talk with a member of your health care team if you would like to learn more about these skills.

## Nutrition

Proper nutrition is important to help with recovery from your surgery.

- In the days before surgery try to eat a well-balanced diet, including food from all food groups. If you have lost weight you may want to use nutritional supplements to add extra calories.
- Your nurse can give you specific nutrition information.

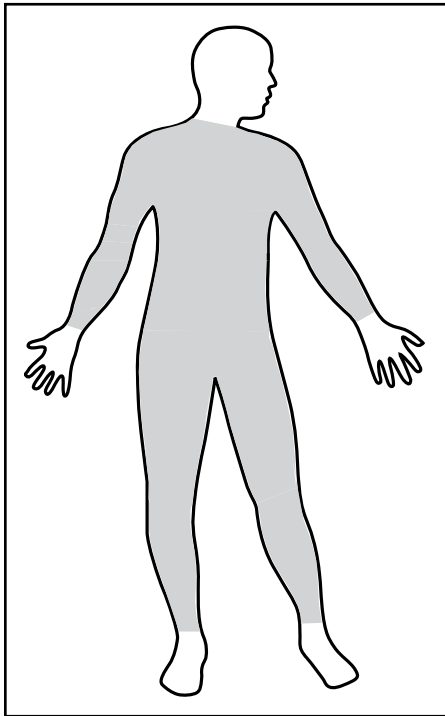
## Food and Liquid Directions Before Surgery

- The night before your surgery you will not be able to eat or drink anything after midnight. (You will be able to take your medicines with a small amount of water. Follow your surgeon's instructions.)
- If you are on tube feedings, these will also need to be stopped at midnight.
- Do not drink any alcohol 24 hours before your scheduled arrival time.
- Do not smoke, vape, use chewing tobacco or use any other tobacco products up to 24 hours before your scheduled arrival time.

# How to Wash Your Skin Before Your Surgery

## Important

Your surgeon's office may give you specific instructions on how to wash your skin before surgery.



© Allina Health System

**It is important to wash your skin with the anti-bacterial soap to remove bacteria from your skin. (See the instructions at right.) Betasept and Hibiclens do not make foam or suds.**

Washing your skin with an anti-bacterial soap before surgery removes most of the bacteria that is normally found on your skin. This helps prevent infections at the incision sites during your recovery.

Use a soap that contains 4% chlorhexidine or 4% chlorhexidine gluconate such as Betasept® or Hibiclens®.

## Important

- Do not use chlorhexidine liquid if you know you have an allergy to chlorhexidine. Instead, you can use Dial® antibacterial soap.
- Do not shave your body below your neck for 7 days before your surgery.

## Before your surgery

You will need to take one shower or bath the night before surgery and one shower or bath the morning of surgery.

- The night before surgery, shampoo your hair with your own shampoo and take a shower or bath using 4 ounces of the anti-bacterial soap.
  1. Gently cleanse your entire body for 5 minutes.
  2. Do not use this soap on your face.
  3. Rinse well. Pat dry with a clean towel and put on clean underwear and clothing.
  4. Do not apply skin lotions, oils, powders, perfumes or deodorant.
  5. Put clean sheets on your bed. Make sure pets stay off of your bed to keep it clean.
- The morning of surgery take another shower or bath using 4 ounces of the anti-bacterial soap. Repeat steps 1 through 4. (You do not have to shampoo.)

# What to Bring for Your Hospital Stay

## Important

Please do not bring any of the following:

- valuables
- medicines (pills, inhalers)
- large amounts of money
- jewelry (wedding ring).

## Important

If you use a CPAP machine, please talk with your surgeon before surgery.

**Please bring the following to the hospital.**

- a current list of your medicines
- a copy of your health care directive (if you have one)
- driver's license or photo ID
- your insurance information (insurance card, Medicare card)
- glasses (if you wear them) and storage container (If you wear contacts, please wear your glasses and leave your contacts at home.)
- hearing aids (if you wear them), storage container and extra batteries
- clothing you will wear home, including a comfortable shirt and pants, underwear, socks and shoes
- phone numbers of family and friends.



**For your comfort, you may also choose to bring the following:**



- reading materials (All rooms have a television and phone.)
- personal care items such as a toothbrush, toothpaste, denture cleaner, comb, skin care products, deodorant, make-up and shaving kit.







This Care Map is general overview of what you can expect during your hospital stay, which is typically 7 to 10 days. Your recovery will be unique to you.

|  | Hospital Day 1<br>(day of surgery)   | Hospital Days 2 to 4   | Hospital Days 5 to 6  | Hospital Days 7 to 10   |
|--|--|--|---|---|
| <b>Comfort</b><br><br>Your pain goal: | Date: _____<br><input type="checkbox"/> You will receive pain medicine by intravenous (IV) line in your hand or arm, or through a feeding tube.<br><input type="checkbox"/> You will talk with your nurse about your pain and how to manage it.  | Date: _____<br><input type="checkbox"/> You will receive pain medicine by IV or through a feeding tube.<br><input type="checkbox"/> Your nurse will ask you about your pain level.<br><input type="checkbox"/> You may try integrative therapies (such as relaxation and massage).<br><input type="checkbox"/> Tell your nurse if you are having trouble sleeping. You and your nurse can talk about reducing visitors, changing your daytime routine, or taking medicine to help you sleep. | Date: _____<br><input type="checkbox"/> You will receive pain medicine as needed.<br><input type="checkbox"/> Your doctor will decide if you should take pain medicine by IV, by mouth, or by a feeding tube.<br><input type="checkbox"/> Have integrative therapies if they are helpful. | Date: _____<br><input type="checkbox"/> You will receive pain medicine by mouth or by feeding tube.<br><input type="checkbox"/> Have integrative therapies if they are helpful. |
| <b>Breathing</b><br>                | Date: _____<br><input type="checkbox"/> Use the incentive spirometer every hour while you are awake and take deep breaths.<br><input type="checkbox"/> An oxygen machine will check the oxygen level in your blood.<br><input type="checkbox"/> You may receive oxygen.<br><input type="checkbox"/> You may have a hoarse or weak voice. | Date: _____<br><input type="checkbox"/> If your oxygen levels are OK, your nurse will remove the oxygen from your nose.<br><input type="checkbox"/> Use the incentive spirometer every hour while awake.<br><input type="checkbox"/> An oxygen machine will check the oxygen level in your blood.<br><input type="checkbox"/> You may have a hoarse or weak voice.   | Date: _____<br><input type="checkbox"/> Use the incentive spirometer every hour while awake.<br><input type="checkbox"/> If your hoarse or weak voice continues, your doctor may want you to see a special doctor (ear, nose and throat, or ENT) to check your vocal cords.               | Date: _____<br><input type="checkbox"/> Use the incentive spirometer 5 or 6 times a day.<br><input type="checkbox"/> Take deep breaths and cough often.                         |

|  | Hospital Day 1<br>(day of surgery)<br>Date: _____   | Hospital Days 2 to 4<br>Date: _____  | Hospital Days 5 to 6<br>Date: _____   | Hospital Days 7 to 10<br>Date: _____   |
|--|---|--|---|--|
| <b>Tests, Labs and Procedures</b><br> | <ul style="list-style-type: none"> <li><input type="checkbox"/> You will receive fluids and antibiotics (medicine) through your IV.</li> <li><input type="checkbox"/> You will have a catheter (thin tube) in your bladder. This will drain your urine.</li> <li><input type="checkbox"/> You may have blood tests.</li> <li><input type="checkbox"/> You may have a chest tube to drain fluid, blood and air from your chest.</li> <li><input type="checkbox"/> You will be weighed.</li> </ul>          | <ul style="list-style-type: none"> <li><input type="checkbox"/> If you have a chest tube, you may need a chest X-ray every day until the chest tube(s) are taken out.</li> <li><input type="checkbox"/> You may have blood tests to check for certain levels such as hemoglobin and electrolytes.</li> </ul>   | <ul style="list-style-type: none"> <li><input type="checkbox"/> You will have a swallow study. This is a test to make sure there is not a leak where the esophagus and stomach are connected.</li> <li><input type="checkbox"/> If you have a chest tube, it will be taken out when: <ul style="list-style-type: none"> <li><input type="checkbox"/> you have little drainage from the chest tube(s)</li> <li><input type="checkbox"/> there is no air leaking from your lungs</li> <li><input type="checkbox"/> you can tolerate the chest tube(s) without suction.</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> You may have blood tests to check for certain levels such as hemoglobin and electrolytes.</li> </ul>   |
| <b>Food and Drink</b><br>            | <ul style="list-style-type: none"> <li><input type="checkbox"/> You will not be able to eat or drink anything. Ask your nurse for help with dry mouth or throat.</li> <li><input type="checkbox"/> You will have a tube in your nose that is connected to a suction machine.</li> <li><input type="checkbox"/> You will have an IV (intravenous) line in your arm or hand to give you fluids.</li> <li><input type="checkbox"/> You will have a feeding tube (J-tube) in your small intestine.</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> You will not be able to eat or drink anything.</li> <li><input type="checkbox"/> You will have a tube in your nose that is connected to a suction machine.</li> <li><input type="checkbox"/> Tell your nurse if you have throat pain.</li> <li><input type="checkbox"/> You will have IV fluids.</li> <li><input type="checkbox"/> A liquid feeding may be started through the feeding tube on the first or second day.</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>If there is no leak during the swallow study:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> the tube in your nose will be removed</li> <li><input type="checkbox"/> you may be able to have ice chips or clear liquids.</li> </ul> </li> <li><input type="checkbox"/> Your tube feedings may continue but be changed to night-time feedings.</li> </ul>  | <ul style="list-style-type: none"> <li><input type="checkbox"/> Your surgeon will set your diet.</li> <li><input type="checkbox"/> Ask your nurse if you are not sure about what you can eat.</li> <li><input type="checkbox"/> Tell your nurse if your food makes you cough or throw up.</li> </ul> |

|   | Hospital Day 1<br>(day of surgery)  | Hospital Days 2 to 4  | Hospital Days 5 to 6  | Hospital Days 7 to 10  |
|---|---|---|---|--|
| <b>Activity</b><br>            | Date: _____<br><input type="checkbox"/> You will sit in a chair and may walk with help from your nurse.<br><input type="checkbox"/> The head of your bed will be raised.<br><input type="checkbox"/> You will wear special leg wraps (compression device) while you are in bed to help prevent blood clots. | Date: _____<br><input type="checkbox"/> You will walk in the hall at least 2 to 4 times a day with help from your nurse.<br><input type="checkbox"/> Keep the head of your bed raised.<br><input type="checkbox"/> Wear the leg wraps while you are in bed.<br><input type="checkbox"/> You may receive blood-thinner medicine to help prevent blood clots.<br><input type="checkbox"/> You may take a sponge bath. | Date: _____<br><input type="checkbox"/> Keep the head of your bed raised.<br><input type="checkbox"/> Walk in the hall at least 4 to 6 times a day.<br>Walk 1___ Walk 2___<br>Walk 3___ Walk 4___<br>Walk 5___ Walk 6___<br><input type="checkbox"/> You may meet with Physical Therapy to help regain your strength.<br><input type="checkbox"/> You may take a sponge bath. | Date: _____<br><input type="checkbox"/> Walk in the hall at least 4 to 6 times a day.<br>Walk 1___ Walk 2___<br>Walk 3___ Walk 4___<br>Walk 5___ Walk 6___<br><input type="checkbox"/> You may take a shower.<br>Cover your incision and tube feedings sites.<br>Your nurse will help you. |
| <b>Bladder/<br/>Bowel</b><br> | <input type="checkbox"/> There will be a catheter placed in your bladder that will drain your urine.<br><input type="checkbox"/> Members of the nursing staff will help you to the bathroom or a bedside commode if you need to have a bowel movement.  | <input type="checkbox"/> Your nurse will remove the bladder catheter by the second day after surgery.<br><input type="checkbox"/> Tell your nurse if you have problems going to the bathroom.<br><input type="checkbox"/> Tell your nurse if you are passing gas.<br><input type="checkbox"/> You will take a stool softener.   | <input type="checkbox"/> Tell your nurse if you are passing gas, are constipated, or have loose stools.<br><input type="checkbox"/> Take medicine to prevent constipation, if needed.   | <input type="checkbox"/> Your doctor may want you to keep taking medicine to prevent constipation or have treatment if you have loose stools.  |
| <b>Education</b><br>         | <input type="checkbox"/> incentive spirometer<br><input type="checkbox"/> fall prevention and activity<br><input type="checkbox"/> pain relief<br><input type="checkbox"/> nasogastric tube   | <input type="checkbox"/> how to prevent blood clots<br><input type="checkbox"/> incentive spirometer<br><input type="checkbox"/> fall prevention and activity   | <input type="checkbox"/> foods and liquids that are OK to eat and drink<br><input type="checkbox"/> incentive spirometer<br><input type="checkbox"/> how to care for and flush your J-tube at home  | <input type="checkbox"/> Your nurse coordinator will help with your plans for going home and follow-up visits.<br><input type="checkbox"/> You and your support person will meet with a dietitian.<br><input type="checkbox"/> You will learn how to care for your incision(s).            |

|  |   |  |  |  |
|--|---|--|--|--|
| <p><b>Plans for Leaving the Hospital (Discharge)</b></p>  | <p><b>Hospital Day 1 (day of surgery)</b><br/>Date: _____</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Who will help you at home?</li> <li><input type="checkbox"/> What are your needs at home?</li> <li><input type="checkbox"/> Who is taking you home?</li> </ul>  | <p><b>Hospital Days 2 to 4</b><br/>Date: _____</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Talk with your nurse about your plans for leaving the hospital (discharge plan).</li> <li><input type="checkbox"/> Tell your nurse who your support person will be when you are at home.</li> </ul> | <p><b>Hospital Days 5 to 6</b><br/>Date: _____</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Talk with your nurse about your plans for leaving the hospital.</li> <li><input type="checkbox"/> Meet with members of your discharge team to talk about your plans.</li> <li><input type="checkbox"/> The social worker and home health care nurse will help make plans for your tube feeding at home, if needed.</li> </ul> | <p><b>Hospital Days 7 to 10</b><br/>Date: _____</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Talk with your nurse if you want your home medicine prescriptions filled at the hospital.</li> <li><input type="checkbox"/> You are ready to leave the hospital when you: <ul style="list-style-type: none"> <li><input type="checkbox"/> are able to pass gas and have a bowel movement</li> <li><input type="checkbox"/> can urinate without problems</li> <li><input type="checkbox"/> can handle pain with medicines by mouth or through a J-tube</li> <li><input type="checkbox"/> can tolerate your diet</li> <li><input type="checkbox"/> your health care team says you are ready to go home.</li> </ul> </li> </ul> |
| <p><b>Education</b></p>                                 | <p>Your nurses will explain the following before you leave the hospital:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> how to care for your feeding tube</li> <li><input type="checkbox"/> how to change the dressing</li> <li><input type="checkbox"/> how to flush the feeding tube</li> <li><input type="checkbox"/> how to follow your new diet</li> </ul> <p><input type="checkbox"/> how to give shots (injections) of blood-thinner, if needed</p> <p><input type="checkbox"/> when to go to your follow-up appointment with your surgeon</p> <p><input type="checkbox"/> whom to call with questions.</p> |  |  |  |

# Chapter 6: Your Surgery and Hospital Stay

## What to Expect the Day of Surgery

### The day of your surgery

- If you were given instructions by your primary care provider to take medicines the morning of your surgery, take them as directed with a small sip of water.
- Put on clean, comfortable clothes to wear to the hospital.
- Arrive at the hospital at the time given to you by your health care team. Please arrive on time. If you are late, your surgery may be delayed or rescheduled.
- You will have visits from members of your health care team.
  - **A pre-surgery nurse** will meet with you to review your care plan and what you can expect before and after your surgery.
  - **Your surgeon** will meet with you and answer any questions you may have. During this visit, you can tell your surgeon whom to talk with after your surgery.
  - **Your anesthesiologist** will also meet with you to review your medical history, talk about the anesthesia that will be used during your surgery and answer any questions.
  - **Your nurse anesthetist** will review your anesthesia plan, take you to the operating room and stay with you during your surgery.
- You will be asked to sign a consent form if you have not signed one already.
- Your surgery will take about 3 to 5 hours.

### Information for your care circle

- While you are in surgery and recovery, your care circle can wait in the surgery waiting room.
- Your surgeon will talk with your care circle when your surgery is over.

### Recovery room

- After surgery, you will be taken to the recovery room where you will stay for about 1 to 1 ½ hours while you wake up from the anesthesia.
- The nurses will monitor your vital signs and help you if you have any side effects from the anesthesia.
- You may have some discomfort and pain when you wake up. Your nurse will work with you to make you as comfortable as possible.



## Hospital room

- When you are fully awake and your medical status is stable, you will be taken to your hospital room.
- Depending on the level of care you need, you may be taken to the surgical floor or the intensive care unit (ICU).
- It is important to start using the incentive spirometer and start walking as soon as you can after surgery.

During your hospital stay, some of the following equipment may be used:

- Intravenous (IV) line: This flexible tube is placed inside a vein, usually in the hand or arm. It will be used to give you medicine or fluids.
- Nasogastric tube (NG tube). This flexible tube is inserted through your nose and passes into your stomach. It will help drain fluid and air from your stomach.
- Jejunostomy tube (J tube). This feeding tube is used to give you liquid nutritional support after your surgery. It will be placed during your surgery (if it wasn't placed before your surgery).
- Jackson-Pratt drain. This drain is tubing with an attached bulb that promotes draining from a surgical incision. Draining extra fluid helps your tissue heal.
- Oxygen. You will be given extra oxygen if needed. Oxygen is given through a small tube in your nose or through a face mask placed over your nose and mouth.
- Heart monitor. A heart monitor records your heartbeats.
- Chest tube. A chest tube may be inserted in your side during surgery. The tube is used to drain fluid, blood and air from your chest. The tube is removed when there is no longer an air leak or drainage.
- Foley catheter. This tube is inserted into your bladder to drain urine. The catheter will be removed when you can urinate on your own.
- Sequential compression device (SCD). These stockings are used to increase circulation and help prevent blood clots.

# How to Manage Your Pain After Surgery

## Important

Having no pain while in the hospital is not realistic, but pain can be controlled.

Your health care team will work closely with you to help manage your pain during your hospital stay and when you return home.

You and your health care team will establish a “pain goal” – the amount of acceptable pain you can tolerate during your hospital stay.

For most people, a pain goal of 3 or 4 out of 10 is an OK pain level that balances pain control with your ability to do daily activities.

## Types of pain

Pain can last less than 3 to 6 months (acute), last a long time (chronic) or be severe and intense (breakthrough). Pain can come and go with injury, recovery and/or illness.

## Your right to pain management

All patients have the right to have their pain managed. Proper treatment of pain is necessary for you to achieve the best results during your recovery.

If you do not think that your pain is being treated well, please tell your nurse or doctor. They will talk with you about your pain and your pain management needs.

## Pain scale

Using a number scale (0 to 10) to rate your pain will help the health care team members know how severe your pain is and help them make decisions about how to treat it.

### Allina Health Pain Assessment Scale

|            |   |
|------------|---|
| <b>10</b>  | <b>Worst Pain You Can Imagine</b>   |
| <b>7-9</b> | <b>Severe Pain</b><br><b>Pain keeps you from doing your regular activities.</b><br>⑨ Pain is so bad that you can't do any of your regular activities, including talking or sleeping.<br>⑧ Pain is so intense that you have trouble talking.<br>⑦ Pain distracts you and limits your ability to sleep. |
| <b>4-6</b> | <b>Moderate Pain</b><br><b>Pain may interfere with your regular activities.</b><br>⑥ Pain makes it hard to concentrate.<br>⑤ You can't ignore the pain but you can still work through some activities.<br>④ You can ignore the pain at times.   |
| <b>1-3</b> | <b>Mild Pain</b><br><b>Pain doesn't interfere with your regular activities.</b><br>③ You may notice the pain but you can tolerate it.<br>② You may feel some twinges of pain.<br>① You may barely notice the pain.  |
| <b>0</b>   | <b>No Pain</b>  |

Adapted with permission by Dr. Armaan Singh, 2015.

## Your role in managing pain

After surgery, it is common to have some pain at the incision sites. As you recover, your incisions will start to heal and the soreness should improve. You may feel numbness or a “pins and needles” sensation in the area of your incisions. You may also have discomfort in the back of your throat from the nasogastric tube.

Since you are the only one who knows where and how severe your pain is, you have an important part in managing your pain.

If you are experiencing pain, whether it is at the incision sites or somewhere else in your body, tell your nurse or doctor. They will be better able to keep you comfortable if you can describe where and how much it hurts.

All of the following information will help your doctor(s) prescribe the right medicine and therapy for your pain, and avoid serious complications (side effects). Tell your nurse or doctor:

- where you feel pain and how much pain you have (use words to describe how the pain feels)
- what makes your pain better or worse
- what methods of pain control have worked or have not worked well in the past
- if you take pain medicines on a regular basis
- if you have allergies or reactions to pain medicine(s)
- your goals for managing your pain
- what vitamins, herbal and natural products you are taking
- if you smoke
- if you drink more than two alcoholic drinks each day
- if you take illegal (street) drugs
- if you are in a methadone maintenance program.

## Treatments for pain

Managing your pain is more than taking prescription (opioid) pain medicine. There are many different types of treatments for pain including:

- medicines (given through IV, feeding tube, or by mouth)
- heat or cold (ice packs)
- integrative therapies: music, acupuncture, acupressure, relaxation techniques, massage therapy, aromatherapy
- psychological therapies
- nerve blocks
- transcutaneous electrical stimulation.



## **Pain medicine side effects**

All medicines have some side effects, but not everyone gets them. When side effects occur, it is usually within a few hours after taking the medicine. Most side effects can be managed and go away in time.

Tell your doctor or nurse right away if you have:

- constipation
- sleepiness
- dizziness
- itching and/or rash
- nausea (upset stomach) and vomiting (throwing up)
- slowed breathing
- trouble concentrating
- forgetfulness
- increased anxiety.

## **Pain control can help you**

The right pain control can help:

- you be more comfortable
- you get back to your normal routine
- you participate more completely in your exercises and therapy
- promote healing.

Take pain medicine when pain first begins. If you know your pain may get worse with activity, take your pain medicine before the activity. Do not wait for pain to get worse before taking medicine. Pain medicine may take up to 30 minutes to begin working. Timing of when to take medicines is important. Talk to your nurse about how to time your pain medicines before activity.

*When medicines are used correctly to manage pain, addiction rarely occurs. If you have concerns about this issue, please talk with your nurse or doctor.*

# Your Hospital Stay

## Important

For more information on what to expect during your hospital stay, please review the esophagectomy care map on pages 59 to 62.

## Food and drink

- Hospital Day 1: You will not be able to eat or drink anything. Ask your nurse for help with dry mouth or throat. You will have a feeding tube (J-tube) in your small intestine.
- Hospital Days 2 to 4: You will not be able to eat or drink anything. A liquid feeding may be started through the feeding tube on the first or second day.
- Hospital Days 5 to 6: You may be able to have ice chips or clear liquids. Your tube feedings may continue but be changed to nighttime feedings.
- Hospital Days 7 to 10: Your surgeon will set your diet.

## Activity

- It is important to get up as soon as you can after surgery. This will help you recover faster and prevent complications.
- The day of your surgery, your nurses will help get you up to sit in a chair and may have you walk a short distance.
- During your hospital stay, your nurses will increase your activity level each day including the number and distance of walks.
- You may meet with physical therapy to help regain your strength.

# How to Use an Incentive Spirometer



An incentive spirometer is a hand-held breathing exercise device to help you breathe deeply.

## Incentive spirometer

After surgery, it may be difficult to breathe as you normally do. You may notice your breathing changes to small, shallow breaths. This can cause fluid and mucus to build up in your lungs, increasing your risk for respiratory system complications.

An incentive spirometer is a hand-held breathing exercise device to help you breathe deeply. Taking deep breaths allows air to inflate your lungs, opening your airways to prevent fluid and mucus buildup.

Using an incentive spirometer may speed your recovery and lower your risk of lung problems, such as pneumonia.

## How to use the incentive spirometer

1. Sit upright in a chair with your feet flat on the floor. (If you aren't able to sit up in a chair, sit as upright as possible.)
2. Place the spirometer on your bedside table or hold it in an upright position.
3. Place the mouthpiece in your mouth. Seal your lips tightly around the mouthpiece.
4. Inhale as **slowly and deeply** as possible through the mouthpiece. Your health care provider will work with you to set a breathing goal, which will be marked with small arrows on the incentive spirometer. As you inhale, the small square should stay between the arrows.
5. Hold your breath for 3 to 5 seconds. Then exhale slowly through pursed lips. (Pursed lips are in the shape of blowing out a candle.)
6. Repeat 10 times, resting between each time.
7. It is important to cough to clear any secretions. Coughing (clearing your airway) will make breathing easier. It will also strengthen your muscles after each use.

## How often you need to use the incentive spirometer

- **At the hospital:** You will need to use the incentive spirometer 10 times every hour you are awake after surgery.
- **At home:** You will need to use the incentive spirometer 10 times every 2 hours for your first 7 days at home.



# Chapter 7: Care After Your Surgery

## Your Recovery After Your Hospital Stay

Surgeon's Office  
Phone Number

---

### When to call the surgeon

Your surgeon's office has a surgeon on call at all times. If you have any of the following symptoms during your recovery, please call your surgeon's office.

- swelling of your neck or upper chest
- new or worsening shortness of breath
- new or worsening cough, or coughing up blood
- your incision sites become red, more tender, have increased drainage, or signs of infection:
  - pain
  - swelling
  - redness
  - odor
  - warmth
  - green or yellow discharge
- new or worsening pain
- temperature of 101.5 degrees Fahrenheit or higher
- vomiting (throwing up)
- uncontrolled diarrhea
- blood in urine or stool
- unable to eat or drink recommended amounts
- unable to get in recommended tube feeding amounts
- feeding tube problems (not able to get the formula in, tube falls out, or pain or skin irritation around the tube).

### Follow-up appointments

- You will be scheduled for a follow-up appointment with your surgeon within 1 to 2 weeks after you go home from the hospital.
- You will need to make an appointment to see your primary care provider within 5 days after you leave the hospital.
- If you have questions about your follow-up appointment, call your surgeon's office or nurse navigator.

## Important

- Changes to your normal eating habits may leave you feeling down or depressed. This is normal. You have been through a lot and have had to make lifestyle changes.
- Sharing meals with friends and family is important. If you are planning to eat out, you may want to plan what you will eat and how much.
- You may wish to share some of your eating changes with your dining partners.

## Diet and nutrition

- Your health care team will work with you on when you are able to advance your diet for the first few weeks after surgery.
- You will meet with a dietitian to talk about long-term diet recommendations after surgery.
- You will most likely have a feeding tube.
  - Your nurse will teach you and your caregiver how to care for the feeding tube and the skin around it.
  - If you will be going home with the tube feedings, arrangements will be made for delivery of supplies and formula.
  - You will receive instructions on how to manage your feedings at home.
  - Your feeding tube will stay in for about 4 to 6 weeks after surgery.
  - It will be removed when you are able to eat a regular diet and maintain your weight without using the feeding tube. The feeding tube is removed during a clinic visit.

## Reflux

- After surgery, you have a life-long risk of reflux and aspiration. Learn more about this risk, including ways to help prevent reflux and aspiration on pages 27 to 28.
- If you have any future procedures or surgeries, tell your health care team that you had esophageal cancer surgery.

## Activity

- It may take several months before you regain your normal energy level. For your recovery, it is important to get regular exercise.
  - Walk every day at a pace that is comfortable to you.
  - You may climb stairs as tolerated.
  - Take rest periods during the day. If you sleep too much during the day it can affect your sleep at night.
- Do not drive until your surgeon says it is OK.
- Do not lift more than 10 pounds for the first 6 weeks after surgery or as instructed by your surgeon.
- Your health care team may refer you to the Cancer Rehabilitation Program. You can learn more about this program in chapter 8.

## **Returning to Work**

- Talk with your surgeon or nurse about when you can return to work. The time away from work will depend on your situation. In general, you will need at least 4 to 6 weeks to recover from surgery.
- Call your surgeon's office if your employer has paperwork that needs to be completed to allow you time off after surgery.





# Chapter 8: Support Services and Resources

Going through cancer treatment can be overwhelming. There is a lot of information to take in and understand. You may be experiencing many different emotions and physical changes. It is important to take time to care for yourself before, during and after your treatment.

There are a variety of programs and services available to you during your treatment and survivorship. Support services are designed to help you cope with the feelings of grief, anger, sadness, fear, and the overall adjustment to life with cancer. They provide an opportunity to talk about your overall well-being and how best to navigate through esophageal cancer treatment. These services are also a way to connect with other people who have similar concerns.

Support services are available on an individual basis and in many group settings. Ask your nurse navigator for more information on the support services listed and how to make an appointment.

## Cancer Rehabilitation Program

Your health care team may refer you to the Cancer Rehabilitation Program. This program offers consultations by health care providers who specialize in physical medicine and rehabilitation, and therapists who have advanced training in cancer rehabilitation.

Before treatment, rehabilitation can help build your overall strength and endurance. During cancer treatment, it can help you maintain mobility and reduce pain and discomfort. After treatment, it can help you regain function, decrease fatigue and build strength.

These health care providers provide care options to address the unique needs of people who have cancer such as:

- balance and coordination
- thinking and processing information
- trouble with eating and swallowing
- pain and fatigue
- muscular strength and range of motion
- weakness.

For more information, please talk with a member of your health care team.

## Counseling

Sometimes people need to talk with a licensed, skilled professional about the emotional impact of being diagnosed with cancer and receive support and guidance in addressing individual concerns. Counselors are available to meet with you alone as well as with your spouse, partner or family members.

## Social Services

A social worker is available to support you and your family during your treatment and recovery. A social worker can:

- help find information and get referrals to community resources
- talk about any concerns that may come up during treatment such as financial, employment or transportation
- provide individual and family counseling to help you and your family cope with the emotional side of cancer
- help guide adults on how to talk with children about cancer and the changes it can often bring to the family.

## Support Groups

Support groups are designed for people and families affected by cancer. These groups provide a place to connect with others and share thoughts, feelings and ask questions. Groups are usually led by a trained oncology professional and open to anyone. They often include talk about general topics such as adjustment and coping.

## Integrative Therapies

### Tip

For more information on services offered by the Penny George Institute, or to schedule an appointment, call 612-863- 3333.

The Penny George Institute for Health and Healing offers education to promote wellness, the prevention of illness and healing.

Integrative therapies treat the whole person — body, mind and spirit — at the same time. It puts the person at the center to restore or maintain their health.

Types of integrative therapies include:

- integrative nutrition
- acupuncture
- healing touch
- therapeutic massage
- guided imagery
- reflexology
- therapeutic yoga.

## Spiritual Care

Through spiritual care services, support is offered for individuals and families to address concerns and feelings raised by the diagnosis, and to encourage each person's own journey of faith and hope. The sacraments and rituals of numerous faith traditions are available.

## Palliative Care

Palliative care is for anyone who is in any stage of an advanced illness. This is care that provides relief from the symptoms, pain and stress of a serious illness. The goal is to improve quality of life for both you and your family. A care plan is created to help you live each day to the fullest and be as independent and comfortable as possible.

## Hospice Care

Hospice care is a special way of caring for you, your family and your caregivers if you have advanced cancer. Hospice focuses on your comfort and quality of life while treating your physical, emotional and spiritual needs. The focus is on comfort and providing the highest quality of life possible.

## Genetic Counseling

Based on your type of esophageal cancer, your age and your family history, your health care team may recommend that you have genetic counseling.

This can help you better understand genetic testing options and how this information may help you and your family. During the visit you can also learn about your risk for future cancers and what you can do to reduce that risk.

## Fertility

Some cancer treatments could affect your fertility (being able to have children). Talk with your health care team about how your treatment may or may not affect your fertility and what options are available to you.

# Cancer Survivorship

## After Your Treatment

After treatment, it will take some time for you to heal and start to feel better.

Some of the changes you may experience may include:

- tingling or numbness in your hands or feet
- loss of balance
- fatigue (tiredness)
- thinking (cognitive changes)
- insomnia
- nutrition changes
- emotional recovery.

## Cancer survivorship visit

An important part of your cancer care is what happens after your treatment. Allina Health Cancer Institute offers a program to optimize healing after treatment and help you get better as soon as possible.

During this visit, you will:

- review a summary of your cancer treatment, as well as your follow-up plan
- talk about your overall health including:
  - energy level
  - activity level
  - side effects from treatment
  - pain
  - sexual health
  - emotional health
  - nutrition concerns
  - financial concerns
- learn about the side effects of treatment, including long-term or “late effects,” and what to watch for and what you can do
- receive a personalized plan to promote your best physical and emotional recovery.

Ask your cancer care team if a survivorship visit is right for you.

## Insurance coverage

This is a one-time appointment with an advanced practice provider. This visit is billed as a provider office visit. Please call your insurance provider to find out if this visit is or isn't covered under your plan, and how much you may have to pay yourself.

## Websites

- **American Cancer Society**  
[cancer.org/cancer/esophagus-cancer](http://cancer.org/cancer/esophagus-cancer)
- **American Institute for Cancer Research**  
[aicr.org](http://aicr.org)
- **American Society of Clinical Oncology**  
[cancer.net](http://cancer.net)
- **Angel Foundation**  
[mnangel.org](http://mnangel.org)
- **Esophageal Cancer Awareness Assoc, Inc.**  
[ecaware.org](http://ecaware.org)
- **Esophageal Cancer Action Network**  
[ecan.org](http://ecan.org)
- **National Coalition for Cancer Survivorship**  
[canceradvocacy.org/toolbox](http://canceradvocacy.org/toolbox)
- **National Cancer Institute**  
[cancer.gov/types/esophageal](http://cancer.gov/types/esophageal)
- **Open Arms of Minnesota**  
[openarmsmn.org](http://openarmsmn.org)
- **U.S. National Library of Medicine - Clinical Trials Database**  
[clinicaltrials.gov](http://clinicaltrials.gov)

# Quit Tobacco For Your Surgery

## Learn More

Maybe you tried to quit tobacco already. Maybe this is your first time.



The good news is there are many ways to quit. It's important to choose methods that appeal to you.

It may take practice to find the best way for you to quit but keep working on it. You can do this!



Visit [allinahealth.org/quit](https://allinahealth.org/quit) to learn more.

## Tobacco and surgery risks

Tobacco products include cigarettes, electronic nicotine delivery systems (ENDS, includes e-cigarettes), cigars, smokeless tobacco (dip or chew), hookahs, pipes, roll-your-own, and oral nicotine products.

Using tobacco increases your risk of the following during and after surgery:

- heart problems
- lung problems (complications) such as pneumonia
- infections such as infections of your surgery site (incision)
- blood clots
- slower healing of your surgery site
- higher levels of pain and more problems with pain control.

Tobacco use keeps oxygen from reaching your surgery site and it can increase your recovery time.

## Benefits of quitting

- Research shows that quitting 4 weeks before surgery can reduce any problems after surgery up to 30 percent.
- People who quit smoking report having better pain control.
- Your body responds quickly to quitting:
  - **8 hours:** the carbon monoxide level in your blood drops to normal. The oxygen level in your blood increases to normal.
  - **48 hours:** Nerve endings start to grow again.
  - **2 weeks:** Your circulation improves and your lung function increases. (Source: World Health Organization.)

## Did You Know?

Using your surgery as a motivator to quit tobacco increases your success rate of quitting for good.

## Nicotine Replacement Therapy (NRT)

NRT can nearly double your chances of successfully staying off cigarettes. It works best if you use it with the help of a doctor or counselor.

Ask your doctor about using NRT around the time of surgery.

Go to [quitforsurgery.com](http://quitforsurgery.com) to learn more.

## When you should quit

Ideally, you should quit as soon as possible. Research shows that:

- the harmful effects from cigarettes begin to go down about 12 hours after your last cigarette smoked
- at least 8 weeks without cigarettes is the best way to reduce problems almost as low as people who do not smoke.

The American College of Surgeons recommends at least 4 weeks without cigarettes.

You should not use tobacco the day of surgery up to 1 week after your surgery. Your doctor may tell you when to quit before your surgery.

If you quit for surgery, you double the chance of staying off cigarettes for good. Many people report they have no cravings while in the hospital.

## Not ready to quit? Consider taking a break!

If quitting tobacco makes you feel nervous and seems overwhelming, consider taking a break or a vacation from tobacco use.

- You will get the physical benefits for the period of time that you are not using tobacco.
- You will reduce your risk of problems during surgery and still increase your chances of a smooth recovery after surgery.

If you can, set a goal to stop using tobacco for 1 month after your surgery. This will allow your body to heal the best after your surgery.

## Ways to quit or take a break

- abrupt stop (cold turkey)
- nicotine replacement therapy (gum, lozenge, patch or inhaler)
- medicines (varenicline and Zyban®)
- behavioral strategies (such as calling a friend or going for a walk)
- aromatherapy (black pepper oil)
- take a break (vacation) from tobacco.

Any step you take without tobacco is going to help you. Small steps are better than nothing!



## Product-specific Resources

- financial aid Nicotrol® inhaler
  - 1-844-989-PATH (7284)
  - [pfizerrxpathways.com](http://pfizerrxpathways.com)
- Plant Extracts aromatherapy
  - 1-877-999-4236
  - [plantextractsinc.com](http://plantextractsinc.com)

## Resources to help you quit

### Allina Health (for your hospital stay)

- Tobacco Intervention Program at Abbott Northwestern Hospital
  - 612-863-1648
- Tobacco Intervention Program at Mercy Hospital
  - 763-236-8008
- Tobacco Intervention Program at River Falls Area Hospital
  - 715-307-6075
- Tobacco Intervention Services at Allina Health United Hospital – Hastings Regina Campus
  - 715-307-6075
- \*United Hospital Lung and Sleep Clinic Tobacco Cessation Program
  - 651-726-6200
- \*Penny George™ Institute for Health and Healing (LiveWell Center) tobacco intervention coaching
  - 612-863-5178

### Other

- Quit Partner
  - 1-800-QUIT-NOW (1-800-784-8669) or [quitpartnermn.com](http://quitpartnermn.com)
  - American Indian: 1-833-9AI-QUIT or [aiquit.com](http://aiquit.com)
  - Spanish: 1-855-DEJELO-YA (1-855-335-3569) or [quitpartnermn.com/es](http://quitpartnermn.com/es)
  - [asiansmokersquitline.org](http://asiansmokersquitline.org)
- online tobacco cessation support
  - [smokefree.gov](http://smokefree.gov)
- American Lung Association/Tobacco Quit Line
  - 651-227-8014 or 1-800-586-4872
- \*Mayo Clinic Nicotine Dependence Center's Residential Treatment Program
  - 1-800-344-5984 or 1-507-266-1930

**\*There may be a cost to you. Check with your insurance provider.**



# Get connected

## Communicate with your Allina Health clinic, hospital and provider

Sign up for your free Allina Health account and get instant access to your health information. You can:

- schedule appointments
- get lab results
- email your care team
- manage a child or another adult's account
- and more!

### Fewer steps. Greater access.

- email with your care team\*
- view immunizations
- read visit notes\* and follow-up instructions



### Never run out. We're always open online.

- refill prescriptions at Allina Health pharmacies with the click of a button



## Sign up for your account at [allinahealth.org](http://allinahealth.org) today

*Your account is a free service of Allina Health.*

\*Availability varies by location. Ask your clinic or hospital if this service is available.

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### On the calendar. Off your mind.

- quickly schedule appointments\*
- do online visits for common conditions



### Less waiting. More knowing

- get lab results fast – usually same day



### Small effort. Big reward.

- take a wellness assessment
- set and track health goals
- create a health care directive





# Nondiscrimination in Health Programs and Activities

## *Affordable Care Act – Section 1557*

Allina Health complies with applicable federal civil rights laws and does not discriminate on the basis of race, color, national origin, age, disability, gender identity or sex. Allina Health does not exclude people or treat them differently because of race, color, national origin, age, disability, gender identity or sex.

### Allina Health:

- provides free aids and services to people with disabilities to communicate effectively with us, such as:
  - ◊ qualified sign language interpreters, and
  - ◊ written information in other formats (large print, audio, accessible electronic formats, other formats)
- provides free language services to people whose primary language is not English, such as:
  - ◊ qualified interpreters, and
  - ◊ information written in other languages.

If you need these services, ask a member of your care team.

If you believe that Allina Health has failed to provide these services or discriminated in another way on the basis of race, color, national origin, age, disability, gender identity or sex, you can file a grievance with:

Allina Health Grievance Coordinator  
P.O. Box 43  
Minneapolis, MN 55440-0043  
Phone: 612-262-0900  
Fax: 612-262-4370  
GrievanceCoordinator@allina.com

You can file a grievance in person or by mail, fax or email. If you need help filing a grievance, the Allina Health Grievance Coordinator can help you.

You can also file a civil rights complaint with the U.S. Department of Health and Human Services, Office for Civil Rights, electronically through the Office for Civil Rights Complaint Portal, available at <https://ocrportal.hhs.gov/ocr/portal/lobby.jsf>, or by mail or phone at:

U.S. Department of Health and Human Services  
200 Independence Avenue, SW Room 509F, HHH Building  
Washington, D.C. 20201  
1-800-368-1019, 800-537-7697 (TDD)

Complaint forms are available at <http://www.hhs.gov/ocr/office/file/index.html>.





Allina Health

[allinahealth.org](http://allinahealth.org)