

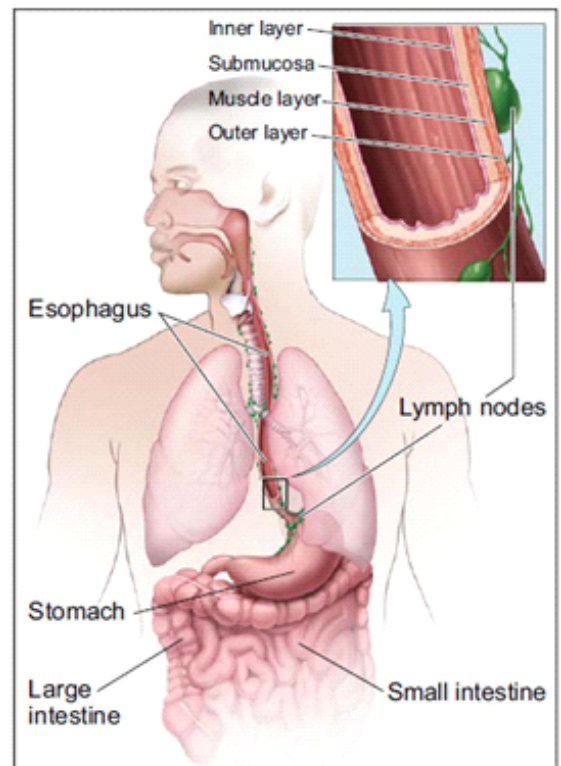
## Esophageal Cancer

Esophageal cancer forms in the tissues that line the esophagus, or the long, hollow tube that connects the mouth and stomach. Food and drink pass through the esophagus to be digested. There are two types of esophageal cancer, adenocarcinoma and squamous cell carcinoma. Both types begin in the inner lining of the esophagus. Adenocarcinoma is the most common type of esophageal cancer in the United States. It is often found in the lower part of the esophagus, near the stomach. Squamous cell carcinoma is the most common type of esophageal cancer around the world. It is often found in the upper part of the esophagus.

### Who is at risk for developing esophageal cancer?

A risk factor is something that increases your chances of developing cancer. You have an increased risk of developing esophageal cancer if you are age 65 or older and:

- **Drink alcohol** – People who drink more than 3 alcoholic drinks daily are at higher risk for developing esophageal cancer than people who do not drink alcohol.
- **Smoke** – Smoking is a risk factor for developing esophageal cancer. People who are heavy drinkers and smoke are at higher risk than heavy drinkers who do not smoke.
- Chew **tobacco** - Chewing tobacco can increase the risk of esophageal cancer.
- Are **male** – In the United States, men are more than 3 times more likely than women to develop esophageal cancer.
- Experience **acid reflux** – The abnormal backward flow of stomach acid into the esophagus is called acid reflux. This is called gastroesophageal reflux disease or GERD.
- Have **Barrett's esophagus** – Chronic acid reflux can damage the esophagus. Over time this can cause changes in the cells at the base of the esophagus. Barrett's esophagus is considered a



This picture shows the esophagus and nearby organs.  
Source: National Cancer Institute

precancerous condition.

- Do not eat a lot of **fruits and vegetables** – Research indicates that a diet low in fruits and vegetables may increase the risk of esophageal cancer.
- Are **obese** – Obesity increases the risk of adenocarcinoma of the esophagus.
- Had **radiation therapy** to the chest or upper abdomen.

Having multiple risk factors further increases your risk of developing esophageal cancer. For example, a person who smokes, drinks, has a history of acid reflux and Barrett's esophagus, has an increased risk of developing esophageal cancer over a person with individual risk factors.

## What are the symptoms of esophageal cancer?

People with esophageal cancer may have symptoms. Some people who have early-stage disease do not have many symptoms, which means the cancer may not be detected right away. Symptoms may include:

- Food sticks in the esophagus and will not pass all the way to the stomach; you may choke or vomit up food that becomes stuck,
- Painful swallowing,
- Pain in the chest or back,
- Weight loss,
- Fatigue,
- Heartburn and/or
- Coughing or hoarseness.

These symptoms may be caused by esophageal cancer or by other health conditions. Testing is done to make a diagnosis and determine the best treatment plan.

## How is esophageal cancer diagnosed?

The evaluation for esophageal cancer may include:

- X-ray exam with a barium swallow – After drinking a thick liquid called a barium solution, you will have x-rays taken of your esophagus and stomach. These x-rays are called an Upper GI Series.
- Esophageal Endoscopy (Esophagoscopy) – A doctor uses a thin tube with a light on the end of it, called an endoscope, to look into your esophagus. The doctor will numb your throat with medication. You may receive medication to help you relax. This procedure is also called an upper endoscopy or esophago-gastric-duodenoscopy (EGD)
- Biopsy – The doctor uses an endoscope to biopsy tissue from the inner lining of the esophagus, where most esophageal cancer begins. Another doctor called a pathologist looks at the tissue under a microscope to identify cancer cells.

If the esophageal biopsy confirms a cancer diagnosis, a few more studies will be performed to determine if the cancer has spread. These may include specialized radiographic scans of your body and brain, and potentially biopsies of other areas. You will be referred to a cancer specialist, called an

oncologist, who will recommend a treatment plan based on your stage and sub-type of cancer.

## How is esophageal cancer staged?

If the biopsy shows you have cancer, your oncologist needs to learn the extent or stage of the disease. Staging is done to help identify how deeply the cancer has invaded the walls of the esophagus, if the cancer has invaded nearby tissues, or if the cancer has spread to other parts of the body. You may receive one or more of these staging tests:

- Endoscopic ultrasound (EUS) – The doctor passes a thin, lighted tube (endoscope) down your throat. A probe at the end of the tube sends out sound waves that bounce off tissues in your esophagus and nearby organs. A computer creates a picture from the echoes. This picture can show how deeply the cancer has invaded the wall of the esophagus.
- CT Scan – An x-ray machine linked to a computer takes a series of pictures of your chest and abdomen. This test is done to look for cancer that may have spread to lymph nodes or other areas. This test can be done with or without contrast that makes the structures in your body easier to see in the x-ray.
- MRI – A strong magnet linked to a computer makes detailed pictures of the inside of your body. This test is done to look for cancer that may have spread to other parts of your body.
- PET Scan – You will receive a small amount of radioactive sugar, which gives off signals the PET scanner uses to make a picture of the places in your body that are using the sugar. Cancer cells show more brightly in the picture because they take up sugar faster than normal cells.
- Bone Scan – You will receive a small amount of radioactive substance that travels through your bloodstream and collects in the bones. A scanner detects and measures the radiation and makes pictures of the bones. The pictures may show cancer that has spread to your bones.
- Laparoscopy – This is an operation. After you receive general anesthesia, the surgeon makes small incisions (cuts) in your abdomen. The surgeon inserts a thin, lighted tube (laparoscope) into the abdomen. Lymph nodes or other tissue samples may be removed to check for cancer cells.
- Surgery – Sometimes cancer staging is not complete until after surgery to remove the cancer and nearby lymph nodes.

## What are the stages of esophageal cancer?

Treatment recommendations for esophageal cancer are based on the stage of cancer. Esophageal cancer stages include:

- Stage I - Cancer is found only in the top layer of cells that line your esophagus.
- Stage II - Cancer has invaded deeper layers of the lining of your esophagus and may have spread to nearby lymph nodes.
- Stage III – Cancer has spread to the deepest layers of the wall of the esophagus and to nearby tissues or lymph nodes.

- Stage IV – Cancer has spread to other parts of your body.

## How is esophageal cancer treated?

The National Jewish Health Cancer Center team, which consists of medical oncologists, radiation oncologists, nurses, gastroenterologists, surgeons, and radiologists, will work closely to determine the best treatment plan for you. They will bring in other specialists as needed for optimal care. Some team members, such as surgeons and radiation oncologists, are based at outside hospitals, where you may go to receive treatment.



Your care team may include a dietician, physical therapist, psychologist, and social worker. Esophageal cancer treatment often includes a combination of surgery, chemotherapy, and radiation therapy.

### Surgery

You may meet with a surgeon to discuss the possibility of surgery to remove your cancer. The type of surgery you may receive depends on where the tumor is in your esophagus. The surgeon may remove the whole esophagus or only the part that has cancer. The surgeon often removes the section of the esophagus where the cancer is located, and the nearby lymph nodes and soft tissues. Sometimes part or all of the stomach may be removed. Most of the time the surgeon pulls up the stomach and connects it to the remaining part of the esophagus. During surgery the surgeon can place a feeding tube into your small intestine (J-tube). This will allow you to take in nutrition when you are unable to eat or drink anything by mouth.

### Chemotherapy

Chemotherapy is the use of medications to kill the cancer cells and stop them from growing. Chemotherapy is often given through a vein in an IV (intravenous) catheter, or through a large catheter, called a port, that is surgically implanted in a large blood vessel in the chest. This will prevent you from having a needle inserted in a vein each time you need to receive chemotherapy or other IV medicine. Chemotherapy is less irritating to the blood vessels when it is given in a large vein through a port. Chemotherapy is called systemic therapy because it goes throughout the body to kill cancer cells. Some newer chemotherapy medications may be given in pill form. Others are given continuously over several days.

Chemotherapy is often given in cycles. These cycles last about three to four weeks, although this may vary depending on the chemotherapy regimen. Chemotherapy may be given several times during a single cycle. Your body is given a chance to rest before another cycle is started. The number of cycles may vary, but often four to six cycles of chemotherapy are given.

Two to three chemotherapy medications are often given together to treat esophageal cancer. The combination of medication is selected by your oncologist to control your esophageal cancer.

Chemotherapy may be given with radiation therapy as primary treatment, after surgery as adjuvant therapy, or alone or with radiation therapy to help control symptoms like pain or difficulty swallowing when the cancer cannot be cured. This is known as palliative treatment.



Chemotherapy can affect normal cells that duplicate quickly. Side effects of chemotherapy for esophageal cancer may include: hair loss, sores in the mouth, loss of appetite, nausea and vomiting, increased chance of infection, bruising easily, bleeding, low blood counts, and general fatigue. Talk with your health care provider about techniques to treat the side effects. Your chemotherapy may need to be adjusted based on your side effects and your response to the chemotherapy.

## **Radiation Therapy (Radiotherapy)**

Radiation therapy is used to kill cancer cells and/or keep cancer cells from growing where the radiation is provided. There are two main types of radiation therapy: external-beam radiation therapy, where radiation therapy is aimed from a machine outside the body that targets the tumor and internal radiation therapy or brachytherapy, where radioactive material is placed inside your body using an endoscope. People who have esophageal cancer often receive concurrent chemotherapy and radiation therapy. Radiation therapy may be used to help prevent the spread of esophageal cancer to the central nervous system.

Advances in radiation therapy are able to provide higher doses of radiation and avoid normal tissue. Radiation may affect normal cells that duplicate quickly and are near the radiation area. You may experience these side effects: redness, dryness and irritation to the skin where the radiation is given; general fatigue; trouble swallowing because the radiation is given near the esophagus; and damage to healthy lung tissue resulting in scarring. Talk with your radiation oncologist about helpful techniques to treat the side effects. National Jewish Health does not have a radiation oncology center, so radiation treatment will be performed at another hospital or radiation center. You will return to National Jewish Health for follow-up care with your oncologist.

Your oncologist will consider many factors to determine the best treatment plan for you. These factors include your age, the specific type of cancer you have, the stage of cancer, your general health and your history of any past treatments given for cancer. In addition to your cancer treatment, supportive care – known as palliative care – is important, and is offered when you begin treatment. Members of your cancer center team will be involved in aspects of palliative care, which is focused on identifying your goals of care and helping you feel as well as you can feel while and after you receive treatment.

## **What about a healthy lifestyle?**

A healthy lifestyle is important for everyone, especially for people who are receiving treatment for cancer. Here are some tips to consider:

- Exercise regularly. You may feel general fatigue due to the esophageal cancer and treatment. Your exercise program can be modified based on how you are feeling. Ask your health care provider about being seen in the rehabilitation program at National Jewish Health. A physical therapist can be very helpful when planning an exercise program, learning breathing techniques, and addressing non-medication pain management strategies.

- Eat a well-balanced diet and drink plenty of fluid. Ask about being seen by a registered dietician at National Jewish Health. A registered dietician can be helpful when thinking of strategies to address the nutrition issues related to esophageal cancer and treatment.
- Give up smoking and avoid exposure to passive smoke. Ask for techniques to help you give up smoking.
- Get a flu shot every year in the fall. Get a pneumococcal vaccine every 5 to 6 years as recommended by your health care provider.



Visit our website for more information about support groups, clinical trials and lifestyle information.

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NOTE: This information is provided to you as an educational service of National Jewish Health. It is not meant to be a substitute for consulting with your own physician.

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