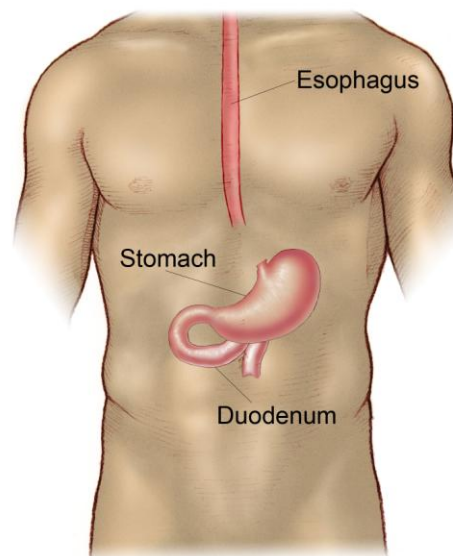


Esophageal Cancer

What is the esophagus?

The esophagus is a muscular tube that carries food and liquids from the mouth to the stomach. It is located behind the windpipe (trachea). When a person swallows, the wall of the esophagus contracts to push food down into the stomach. The lower part of the esophagus that connects to the stomach is called the gastroesophageal junction, or GE junction.



The esophagus and nearby organs

What is esophageal cancer?

Cancer develops when cells grow and divide out of control to form a tumor or mass. These cancer cells can invade and destroy the tissue around them. The cancer cells can spread to other parts of the body. This process of the cancer spreading from the original site of the tumor (esophagus) to other parts of the body is called metastasis. The lymph nodes, liver, lung and bone are the most common areas that esophageal cancer may spread to (or metastasize).

Esophageal cancer occurs when cancer cells form in the tissue of the esophagus. The exact causes are unknown, but an increased risk of developing esophageal cancer is seen with:

- Older age
- More common in men than women
- Tobacco use
- Alcohol use
- Reflux disease, or GERD (gastroesophageal reflux disease)
- Barrett's esophagus – a condition when long-term reflux of stomach acid causes injury to the esophagus, thereby replacing the normal squamous cells in the esophagus with glandular cells.

Two Main Types of Esophageal Cancer:

Squamous cell carcinoma arises in the squamous cells lining the esophagus. It most commonly occurs in the upper and middle part of the esophagus. The major risk factors associated with this type include a history of smoking and/or alcohol use.

Adenocarcinomas are cancers that usually arise in the glandular tissue of the esophagus.

Adenocarcinomas are most commonly found in the lower part of the esophagus, near the stomach. The major risk factors include GERD and Barrett's esophagus.

What are the symptoms?

Common symptoms include difficult or painful swallowing, weight loss, mid chest pain, cough and hoarseness. Symptoms do not usually appear until the cancer is in advanced stages.

What is staging?

Staging is when testing is done in order to determine the size and location of the tumor in the esophagus and whether it has metastasized to other places in the body. Staging is necessary in order to plan the appropriate treatment. Your doctor may order a series of tests to help determine the stage of your cancer. All of these tests will be discussed in detail with you.

The four stages of esophageal cancer are Stage I, II, III and IV. Stage I is an early esophageal cancer, with Stage IV being the most advanced stage when the cancer has spread to other parts of the body.

How is esophageal cancer treated?

Treatment for esophageal cancer depends upon the size, location and extent of the tumor, as well as the patient's general health and nutritional condition. Many different treatments and combinations of treatments may be used to control the cancer and/or improve a patient's quality of life by improving symptoms. The main types of treatment are explained below.

Surgery

Surgery is the most common treatment for early stage esophageal cancer that has not spread to lymph nodes or other parts of the body. There are four common surgeries: 1) minimally invasive esophageal resection, 2) transthoracic, 3) transhiatal and 4) three-field esophagectomy. In all four types of surgeries, the surgeon will make two or more incisions and remove all or part of the esophagus, a portion of the stomach and nearby lymph nodes. The remaining stomach is pulled up into the chest or neck and connected to the remaining esophagus. The four surgical procedures have similar cure rates and complication rates. In general, the type of surgery performed depends on the location and extent of the cancer. Your health care team will discuss in detail with you the type of surgery your doctor recommends.

To treat more advanced stages of cancer, surgery may be combined with chemotherapy and/or radiation therapy.

Radiation Treatment

Radiation treatment, or radiation therapy, uses X-rays or other high-energy rays to kill cancer cells and shrink tumors. The radiation only affects cancer cells in the treated area. External beam

radiation therapy is radiation delivered from a machine outside the body.

Radiation is usually combined with chemotherapy in the treatment of esophageal cancer to prevent tumor growth and to reduce symptoms resulting from the tumor, such as difficulty swallowing or bleeding.

Side effects from radiation to the esophagus may include the following:

- Skin changes: redness, irritation, scaliness, ulceration, thickening, hair loss and change in color
- Inflammation of the esophagus causing pain/difficulty with swallowing, heartburn or a sticking sensation when swallowing food
- Loss of appetite, nausea, vomiting, weight loss and weakness
- Inflammation of the lung causing pain, fever, cough and difficulty in breathing
- Inflammation of the heart sac with chest pain and palpitations
- Bleeding, perforation or creation of a fistula (tract)
- Lowering of the blood counts leading to increased risk of infection and/or bleeding
- Intermittent electric shock-like feelings in the lower spine or legs when bending the neck

Chemotherapy

Chemotherapy uses drugs to kill cancer cells. These drugs enter the bloodstream to reach all areas of the body, making this treatment useful for cancer that has spread beyond the esophagus. Your doctor may use one drug or a combination of drugs. Chemotherapy can be given several ways, such as intravenously (through a vein) or by mouth. Patients usually receive chemotherapy on an outpatient basis, which does not require hospitalization.

Since chemotherapy medicines may affect some healthy cells as well as cancer cells, side effects can occur. Your doctor can prescribe medicines to help relieve the side effects. You will receive detailed information about the chemotherapy medicines your doctor has prescribed. Common side effects of chemotherapy include:

- Nausea
- Diarrhea
- Fatigue
- Hair Loss
- Low blood counts (may increase the risk for infections and bleeding)

Chemotherapy by itself does not typically cure cancer of the esophagus. Chemotherapy may be combined with radiation therapy as a primary treatment (instead of surgery) or may be given before surgery to shrink the tumor before an operation.

Clinical Trials

Clinical trials are in progress to find the best ways to treat esophageal cancer. New chemotherapy drugs and combinations are being studied in clinical trials as treatments for cancer that has spread and as a way to try to relieve symptoms of the disease. Your doctor will tell you if you are eligible for a clinical trial.

Other Therapies

Other treatments that may be used to treat esophageal cancer are:

- **Photodynamic Therapy (PDT)** is a type of laser therapy that involves the use of an injected chemical that is absorbed by abnormal cells. PDT may also be used to relieve symptoms of esophageal cancer when the tumor obstructs the esophagus and cannot be successfully treated with other combination treatments.
- **Endoscopic Mucosal Resection (EMR)** is a highly effective treatment for small surface esophageal lesions. During the treatment, saline is injected in the esophageal wall to form a bubble under the lesion. The lesion is suctioned into a small cap and removed. This allows the doctor to perform a resection without damaging the rest of the esophagus. More than one EMR may be needed to completely remove the lesion.
- **Laser therapy** uses a high-intensity light to destroy cancer cells through an endoscope. This may be used to relieve a blockage in the esophagus caused by the tumor. Relieving the blockage can help reduce symptoms such as difficulty swallowing.
- **Esophageal stents** are small expandable metal or plastic tubes that are placed over the tumor in the esophagus with the aid of an endoscope. Once placed, the stent can expand and open up the blocked part of the esophagus, allowing food and liquids to pass through easier.

How important is nutrition?

It is important to take in enough calories and protein to prevent weight loss and maintain energy and strength. Individuals with esophageal cancer often have a hard time eating because of pain or difficulty swallowing. In these cases, soft foods or liquid supplements may be easier to eat. If you are not able to take in enough calories and protein by mouth, a feeding tube will be placed to help keep you healthy. Ask to speak with a dietitian for more information.

What type of follow up care is needed?

Follow-up visits during and after treatment are necessary to ensure that any change in the status of your cancer is found quickly. If the cancer returns, spreads to new areas or progresses, it should be treated as soon as possible. Routine follow-up visits may include physical exams, X-rays, CT scans and/or laboratory tests.

If you have questions or concerns after reading this information, ask your health care team.