Esophagus Cancer Overview

This overview is based on the more detailed information in our document *Esophagus Cancer: Detailed Guide*.

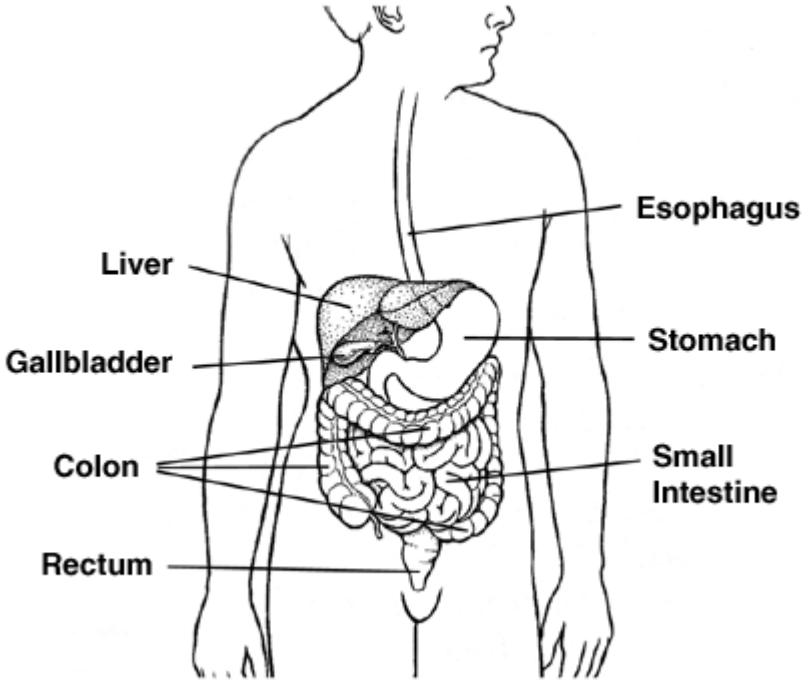
What is cancer of the esophagus?

Cancer starts when cells in the body begin to grow out of control. Cells in nearly any part of the body can become cancer, and can spread to other areas of the body. To learn more about how cancers start and spread, see *What Is Cancer?*

Esophagus (or esophageal) cancer starts in the esophagus. To understand this type of cancer, it helps to know about the normal esophagus and what it does.

The esophagus

The esophagus is a muscular tube that connects the throat to the stomach. It is behind the windpipe (trachea) and in front of the spine. In adults is about 10 to 13 inches long. It carries food and liquids to the stomach.



The wall of the esophagus has several layers. Cancer of the esophagus starts in the inner layer and grows outward into deeper layers.

The lower part of the esophagus connects to the stomach at an area called the *gastroesophageal (GE) junction*. Here, a sphincter muscle opens to allow food to enter the stomach. This muscle also closes when a person is not eating to keep stomach acid and juices from backing up into the esophagus. Esophagus cancer

There are 2 main types of cancer of the esophagus:

Squamous cell carcinoma: Squamous cells line the inside layer of the esophagus. Cancer that starts in these cells can grow anywhere along the length of the esophagus. Less than half of all cancers of the esophagus are squamous cell carcinomas.

Adenocarcinoma: These cancers start in gland cells. This type of cell is not normally part of the inner lining of the esophagus. These cancers are mainly in the lower esophagus.

Adenocarcinomas that start where the esophagus joins the stomach or in the first part of the stomach tend to behave like esophagus cancers (and are treated like them, as well), so they are grouped with esophagus cancers.

Rare cancers: Other types of cancer can also start in the esophagus. But these cancers are rare and are not discussed further in this document.

What are the risk factors for cancer of the esophagus?

We don't know the exact cause of esophageal cancer, but we do know some of the risk factors that make this cancer more likely. A risk factor is anything that affects a person's chance of getting a disease like cancer. Different cancers have different risk factors. Some risk factors, such as smoking, can be controlled. Others, like a person's age or race, can't be changed.

But having a risk factor, or even several, does not mean that you will get the disease. Many people with risk factors never get esophagus cancer, while others with this disease may have few or no known risk factors.

Age

The risk of this cancer goes up with age. Less than 15% of cases are found in people younger than age 55.

Gender

Men are more than 3 times as likely as women to get this cancer.

Reflux

The stomach normally makes strong acid and enzymes to help digest food. In some people, acid can escape from the stomach into the lower part of the esophagus. This is called *gastroesophageal reflux disease* (GERD), or just *reflux*. In many people, reflux causes symptoms such as heartburn or chest pain. In some, though, reflux doesn't cause any symptoms.

People with reflux have a slightly higher risk of cancer of the esophagus. But reflux is very common, and most people who have it *do not* get esophageal cancer. Reflux can also cause Barrett's esophagus, which is linked to an even higher risk (discussed below).

Barrett's esophagus

If reflux goes on for a long time, it can damage the inner lining of the esophagus. This causes the squamous cells that normally line the esophagus to be replaced with gland

cells, which are more resistant to stomach acid. This condition is known as Barrett's (or Barrett) esophagus.

The longer someone has reflux, the more likely it is that they will develop Barrett's esophagus. Many people with Barrett's esophagus have symptoms of heartburn, but others have no symptoms at all.

People with Barrett's esophagus are much more likely than people without this condition to develop cancer of the esophagus (the adenocarcinoma type). Still, only a small portion of people with Barrett's esophagus will get esophagus cancer.

Tobacco and alcohol

Using any form of tobacco (cigarettes, cigars, pipes, chewing tobacco) raises the risk of this cancer. The longer a person uses tobacco, the greater the risk. The risk of esophagus cancer goes down if tobacco use stops.

Drinking alcohol also increases the risk of esophagus cancer. The chance of getting esophagus cancer goes up the more a person drinks.

Those who both smoke and drink alcohol raise their risk of esophageal cancer much more than using either alone.

Being overweight

People who are overweight or obese have a higher risk of esophageal cancer. This may be because people who are obese are more likely to have esophageal reflux.

Diet

A diet high in processed meat (like deli meats, hot dogs, and bacon) may increase the risk of esophagus cancer because of certain substances in these foods. On the other hand, eating a lot of fruits and vegetables is linked to a lower risk of esophagus cancer. The exact reasons for this are not clear, but fruits and vegetables have a number of vitamins and minerals that may help prevent cancer.

Overeating, which leads to being overweight, also raises the risk.

Drinking a lot of very hot liquids might increase the risk of this cancer, too.

Achalasia

In this disease, the muscle at the bottom of the esophagus does not relax to let food into the stomach. The lower end of the esophagus gets stretched out, and food collects there instead of moving into the stomach. Over time, this raises the risk for esophageal cancer.

Tylosis

This is a rare, inherited disease that causes extra skin to grow on the palms of the hands and soles of the feet. People with tylosis also get small growths (papillomas) inside the esophagus and are at a very high risk for esophageal cancer. They should be seen regularly by a doctor to watch for this cancer. Often this means having upper endoscopies (described in “How is cancer of the esophagus found?”).

Plummer-Vinson syndrome

People with this rare syndrome have webs in the upper part of the esophagus, often along with low red blood cell counts, tongue irritation, brittle fingernails, and sometimes a large thyroid gland or spleen. Another name for this is *Paterson-Kelly syndrome*.

A web is a thin membrane sticking out from the inner lining of the esophagus that causes narrowing. Most webs do not cause any problems, but larger ones can cause food to get stuck in the esophagus, which can lead to problems swallowing.

About 1 in 10 people with this syndrome will get cancer of the esophagus.

Workplace exposure

Being exposed to fumes from chemicals used in some workplaces might increase the risk of esophageal cancer. For example, working near or with some of the solvents used for dry cleaning might lead to a greater risk of esophageal cancer.

Injury to the esophagus

Lye is a chemical found in strong cleaners such as drain cleaners. Lye can burn and destroy cells. Sometimes small children Mistakenly drinking a lye-based cleaner can cause a severe chemical burn in the esophagus. As the injury heals, the scar tissue can narrow an area of the esophagus (called a *stricture*). People with strictures have an increased risk of the squamous cell type of esophageal cancer, (which often occurs many decades later).

Other cancers

People who have had certain other cancers such as lung cancer, mouth cancer, and throat cancer have a high risk of getting esophageal cancer, too. This could be because all of these cancers can be caused by smoking.

Human papilloma virus (HPV) infection

HPV is a group of more than 100 related viruses. Infection with certain types of HPV is linked to a number of cancers, including throat cancer, anal cancer, and cervical cancer.

Signs of HPV infection have been found in up to one-third of esophagus cancers from patients in parts of Asia and South Africa. But signs of HPV infection have not been found in esophagus cancers from patients in other areas, including the US.

Can cancer of the esophagus be prevented?

Not all esophageal cancers can be prevented, but you can greatly reduce the risk of getting this disease by avoiding certain risk factors.

Avoiding tobacco and alcohol

In the United States, the most important lifestyle risk factors for cancer of the esophagus are the use of tobacco and alcohol. Avoiding tobacco and alcohol is one of the best ways to limit your risk of esophagus cancer. If you or someone you know would like to quit tobacco or learn more about it, call us at 1-800-227-2345 or visit our Tobacco information page.

Watching your diet and body weight

A diet rich in fruits and vegetables may help protect against esophagus cancer. Being overweight has been linked with esophagus cancer, so staying at a healthy weight might also help limit your risk. For more on this, see our *American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention*.

Getting treated for reflux or Barrett's esophagus

Treating people with reflux may help prevent Barrett's esophagus and esophageal cancer. Often, reflux is treated using drugs called *proton pump inhibitors* (PPIs). Surgery might also be a treatment option for reflux.

Doctors recommend that people at a higher risk for esophageal cancer, such as those with Barrett's esophagus have certain tests to look for cell changes that may be a sign of cancer. Treatment with drugs or even surgery can improve symptoms and may prevent future problems.

Some studies have found that the cancer risk is lower in people with Barrett's esophagus who take aspirin or related drugs, or who take drugs called *statins* (which are used to treat high cholesterol). But taking these drugs every day can have side effects, so most doctors

don’t advise that people take these drugs to try to prevent cancer. If you are thinking of taking aspirin or another drug to try to lower your risk, be sure to discuss the pros and cons with your doctor first.

How is cancer of the esophagus found?

Looking for a disease in someone without symptoms is called *screening*. In the United States, screening everyone for esophageal cancer is not recommended at this time. This is because no screening test has been shown to lower the risk of dying from this cancer in people who are at normal risk.

Testing people at high risk

People at higher risk for esophageal cancer, such as those with Barrett’s esophagus, are often watched closely to look for signs that could mean that the cells lining the esophagus have changed. Many experts recommend that they have a test called *upper endoscopy* regularly (this test is discussed later in this section). Often, samples of tissue are removed (biopsies) and checked to see if they contain abnormal or even cancer cells. If they do, the patient may need to be treated. This is discussed in more detail in our full-length document on *Esophagus Cancer*.

Signs and symptoms of cancer of the esophagus

Esophagus cancer is often found because of the symptoms it causes. But often these symptoms don’t appear until the cancer is advanced, making a cure less likely.

Trouble swallowing

This is the most common symptom of cancer of the esophagus. It means you feel like food gets stuck in your throat or chest. This is often mild when it starts, and then gets worse over time. Solid foods like bread and meat often get stuck. People with trouble swallowing may switch to softer foods or even liquids. If the cancer keeps growing, at some point even liquids might be hard to swallow.

To help the food go down, the body makes more saliva. This makes some people have lots of thick mucus or saliva.

Chest pain

Sometimes, pain in the mid-chest or a feeling of pressure or burning can be a sign of cancer. But these symptoms are more often caused by something else such as heartburn. Swallowing may become painful if the cancer is large enough to limit the passage of food down the esophagus.

Weight loss

About half of people with esophageal cancer lose weight without trying. Trouble swallowing keeps them from getting enough food. They also might not feel like eating.

Other symptoms

Other possible symptoms of cancer of the esophagus can include:

- Hoarseness
- Constant cough
- Vomiting
- Hiccups
- Pneumonia
- Bone pain
- Bleeding into the esophagus. This blood then passes through the stomach and intestines, which may turn stools black. Over time, this blood loss can lead to low levels of red blood cells, which can make a person feel tired.

Having one or more of these symptoms does not mean you have esophagus cancer. In fact, many of these symptoms are more likely to be caused by something else. Still, if you have any of these symptoms, especially trouble swallowing, have them checked by a doctor so that the cause can be found and treated, if needed.

If certain symptoms suggest that you have esophagus cancer, your doctor will use one or more exams or tests to find out for sure. After asking questions about your health and symptoms and examining you, your doctor will tell you which of the tests below you will need. You may also be referred to a doctor who is an expert in digestive system diseases (a gastroenterologist).

Imaging tests

Imaging tests use different methods to create pictures of the inside of your body. These tests may be done for a number of reasons both before and after a diagnosis of esophageal cancer:

- To help find cancer
- To learn if and how far cancer has spread
- To help tell if treatment is working

- To look for signs of cancer coming back after treatment

Barium swallow or upper GI x-rays

This is a series of x-rays taken after you swallow barium, a dense liquid that shows up on x-rays. Barium coats the inner surface of the esophagus and helps make a good picture. Any lumps on the inner lining of the esophagus show up on the x-ray. A barium swallow is often the first test done in people who have trouble swallowing.

CT (computed tomography) scan

A CT (or CAT) scan is a type of x-ray that takes many pictures of the part of your body being studied. These pictures are combined by a computer to give a detailed view of your insides.

CT scans are not often used to diagnose esophagus cancer, but they can help show where it is in the esophagus and if it has spread to other parts of the body. The scans can help show whether surgery is a good treatment option. If a biopsy is needed, a CT scan can be used to guide a needle into the mass to take a sample.

A CT scanner has been described as a large donut, with a narrow table that slides in and out of the middle hole. You will need to lie still on the table while the scan is being done.

Before any pictures are taken, you may be asked to drink a liquid called *oral contrast*. If you are having any trouble swallowing, tell your doctor before the scan. You may also get an IV (intravenous) line for a different kind of contrast dye. Some people are allergic to the contrast. Be sure to tell your doctor if you have any allergies or have ever had such a reaction.

MRI (magnetic resonance imaging) scan

MRI scans use radio waves and strong magnets instead of x-rays to take pictures. They are very helpful in looking at the brain and spinal cord, but they are not often needed to look for spread of esophagus cancer.

MRI scans take longer than CT scans, often up to an hour. Also, you have to lie inside a narrow, tube-like machine, which upsets some people. Special, more open MRI machines can sometimes help with this if needed.

PET (positron emission tomography) scan

For a PET scan, a special radioactive chemical (called a *radiotracer*) is put into a vein. Cancer cells quickly take up the tracer. Then a scanner can spot those areas. This test may be useful for finding cancer that has spread if nothing is found on other imaging tests. Special machines combine a PET scan with a CT scan.

Endoscopy

An endoscope is a flexible thin, tube with a tiny light and video camera on the end. The doctor uses it to look inside the body. Tests that use endoscopes can help find esophagus cancer or show how much it has spread. If there are any areas of concern, a small piece of tissue can be removed through the tube to see if cancer cells are in the area. (This is called a *biopsy*.)

Upper endoscopy

This is an important test for finding esophageal cancer. You will first be given drugs to make you sleepy. Then the doctor passes the tube through your mouth and down into your esophagus and stomach.

This test is useful because:

- The doctor can see the inside of the esophagus clearly.
- A tissue sample can be taken to find out if there is cancer.
- If the cancer is blocking the opening of the esophagus, the opening can be made bigger to help food and liquids pass through to the stomach.
- The doctor can learn more about whether the cancer can be removed with surgery.

Endoscopic ultrasound

This test is often done at the same time as the upper endoscopy, although it is actually a type of imaging test. Ultrasound tests use sound waves to take pictures of parts of the body. For an endoscopic ultrasound, the probe that gives off the sound waves is at the end of an endoscope, which is passed down into the esophagus. This lets the probe get very close to the cancer.

The ultrasound can show how far the cancer has grown into the esophagus. It can also be used to guide the doctor when getting biopsy samples of nearby lymph nodes. This can help in making choices about surgery.

Bronchoscopy

This test is much like an endoscopy except that the doctor passes the scope into the windpipe and the tubes leading from the windpipe into the lungs (bronchi) to see if the cancer has spread there. Your mouth and throat are sprayed first with a numbing medicine. You may also be given medicine into a vein line to make you feel relaxed. A biopsy sample might also be taken.

Thoracoscopy and laparoscopy

These tests let the doctor see lymph nodes and other organs inside the chest or belly (abdomen) using a hollow lighted tube with a small video camera on the end. The doctor can also remove lymph nodes through the same tube to test them for cancer. This information is helpful in deciding if surgery is a good option.

These tests are done in the operating room while you are in a deep sleep (under general anesthesia). A small cut is then made in the side of the chest wall (for thoracoscopy) or the belly (for laparoscopy) to insert the tube.

Lab testing of biopsy samples

A spot seen on endoscopy or on an imaging test may look like cancer, but the only way to know for sure is to do a biopsy. For a biopsy, the doctor takes a small piece from the area that looks like it could be cancer. It is then looked at under the microscope to see if cancer is present and to find out what type of cancer cells there are. It can often take a few days to get the results.

If esophageal cancer is found but is too advanced for surgery, your doctor might have your biopsy samples tested to see if the cells have too much of the HER2 gene or protein. If they do, a drug that targets the HER2 protein may help treat these cancers.

Other tests

A doctor may order a blood test called a complete blood count (CBC) to look for a low red blood cell count (which could be caused by bleeding inside the body). A stool sample may be checked to see if it contains unseen blood.

If esophageal cancer is found, the doctor may recommend other tests, especially if surgery is a treatment option.

Staging of esophagus cancer

The stage of a cancer describes how far it has spread. This is very important because your treatment and the outlook for your recovery depend a lot on the stage of your cancer.

Cancer of the esophagus is staged using the results of the tests described in the section “How is cancer of the esophagus found?”

A staging system is a standard way for the cancer care team to describe the extent of the cancer. The most common staging system for esophagus cancer is the AJCC staging system. It uses several key pieces of information:

- **T** is how far the main **tumor** has grown into the wall of the esophagus and into nearby organs.
- **N** describes the spread to nearby lymph **nodes**.
- **M** tells whether the cancer has spread (**metastasized**) to other parts of the body.
- **G** describes the **grade** of the cancer, which is based on how the patterns of cancer cells look under a microscope.

Staging also takes into account the cell type of the cancer (squamous cell carcinoma or adenocarcinoma). For squamous cell cancers, the place where the tumor is found can also be a factor in staging.

The T, N, M, and G categories are combined to get an overall stage, using the number zero (0) and the Roman numerals I through IV (1 - 4). The lower the number, the less the cancer has spread. A higher number, such as stage IV (4), means a more advanced cancer.

Stages provide a detailed summary of how far the cancer has spread. But for treatment purposes, doctors are often more concerned about whether the cancer is resectable or not – that is, whether it can be completely removed (resected) with surgery. Early stage cancers are more likely to be resectable.

After looking at your test results, the doctor will tell you the stage of your cancer. Staging for esophageal cancer can be confusing, so be sure to ask your doctor to explain your stage in a way you understand. This will help you both decide on the best treatment for you.

How is cancer of the esophagus treated?

About treatment

After the cancer is found and staged, your doctor will talk to you about your treatment options. There is a lot for you to think about when choosing the best way to treat or manage your cancer. You will want to weigh the pros and cons of each treatment option.

The main options for treating cancer of the esophagus include:

- Surgery
- Radiation
- Chemotherapy
- Targeted therapy

Other treatments may also be used for early cancers and pre-cancers of the esophagus. Some of these can also be used to help relieve symptoms such as pain and blockage.

Depending on the stage of the cancer and your general health, different treatments might be used alone or combined. Based on your treatment options, you might have different types of doctors on your treatment team. These doctors might include:

- A thoracic surgeon: a doctor who treats diseases of the chest with surgery
- A radiation oncologist: a doctor who treats cancer with radiation
- A medical oncologist: a doctor who treats cancer with medicines such as chemotherapy
- A gastroenterologist: a doctor who specializes in treatment of diseases of the digestive system

Many other specialists might be involved in your care as well. See *Health Professionals Associated With Cancer Care* for more on this.

Be sure to discuss the pros and cons of your treatment options, including side effects, with your doctors to help make the decision that best fits your needs. You may feel that you need to make a decision quickly, but give yourself time to absorb what you have learned. Ask your cancer care team questions, such as those in “Questions to ask your doctor about cancer of the esophagus.”

If time allows, it’s often a good idea to get a second opinion. This can give you more information and help you feel confident about the treatment plan you choose.

Thinking about taking part in a clinical trial

Clinical trials are carefully controlled research studies that are done to get a closer look at promising new treatments or procedures. Clinical trials are one way to get state-of-the art cancer treatment. In some cases they may be the only way to get access to newer treatments. They are also the best way for doctors to learn better methods to treat cancer. Still, they are not right for everyone.

If you would like to learn more about clinical trials that might be right for you, start by asking your doctor if your clinic or hospital conducts clinical trials. You can also call our clinical trials matching service at 1-800-303-5691 for a list of studies that meet your medical needs, or see the Clinical Trials section to learn more.

Considering complementary and alternative methods

You may hear about alternative or complementary methods that your doctor hasn't mentioned to treat your cancer or relieve symptoms. These methods can include vitamins, herbs, and special diets, or other methods such as acupuncture or massage, to name a few.

Complementary methods refer to treatments that are used along with your regular medical care. Alternative treatments are used instead of a doctor's medical treatment. Although some of these methods might be helpful in relieving symptoms or helping you feel better, many have not been proven to work. Some might even be dangerous.

Be sure to talk to your cancer care team about any method you are thinking about using. They can help you learn what is known (or not known) about the method, which can help you make an informed decision. See the Complementary and Alternative Medicine section to learn more.

Help getting through cancer treatment

Your cancer care team will be your first source of information and support, but there are other resources for help when you need it. Hospital- or clinic-based support services are an important part of your care. These might include nursing or social work services, financial aid, nutritional advice, rehab, or spiritual help.

The American Cancer Society also has programs and services – including rides to treatment, lodging, support groups, and more – to help you get through treatment. Call our National Cancer Information Center at 1-800-227-2345 and speak with one of our trained specialists on call 24 hours a day, every day.

The treatment information given here is not official policy of the American Cancer Society and is not intended as medical advice to replace the expertise and judgment of your cancer care team. It is intended to help you and your family make informed decisions, together with your doctor. Your doctor may have reasons for suggesting a treatment plan different from these general treatment options. Don't hesitate to ask him or her questions about your treatment options.

Surgery for cancer of the esophagus

For some early stage cancers, surgery is used to try to remove the cancer. Sometimes, it might be combined with other treatments, such as chemotherapy or radiation. How much surgery is done depends on the stage of the cancer. You and your surgeon should discuss the planned operation and what you can expect in detail.

Esophagectomy

Surgery to remove all or part of the esophagus is called an *esophagectomy*. Often a small amount of the stomach is taken out, too. The top of the esophagus is then reattached to the stomach, or the surgeon may replace the removed part of the esophagus with a piece of intestine. There are different ways to do an esophagectomy, but all of them are complex.

Open esophagectomy

In a standard, open esophagectomy, the surgeon operates through one or more large cuts (incisions) in the neck, chest, or abdomen. The main incision is often in either the chest or the belly (abdomen).

Minimally invasive esophagectomy

For some early (small) cancers, the esophagus can be removed through several small incisions. The surgeon puts a scope (like a tiny telescope) through one of the incisions to see everything during the operation. Then long, thin surgical instruments go in through other small incisions. To do this type of surgery well, the surgeon needs to be highly skilled and have a great deal of experience removing the esophagus this way. When successful, this surgery allows the patient to leave the hospital sooner and recover faster.

No matter which approach is used, esophagectomy is not a simple operation, and it may require a long hospital stay. Surgeons who do this surgery must be experts. Ask your surgeon how many of these operations he or she has done and how many were successful. It is very important to have this surgery done at a center that has a lot of experience treating these cancers.

If the cancer has not yet spread far beyond the esophagus, taking out the esophagus might cure the cancer. But most esophageal cancers are not found early enough for doctors to cure them with surgery, so it’s important to know whether the goal of surgery is to try to cure the cancer or to ease symptoms.

Taking out lymph nodes

When some or all of the esophagus is removed, nearby lymph nodes are removed too. These are then checked to see if they have cancer cells. If the cancer has spread to lymph

nodes, the outlook is not as good, and the doctor may recommend other treatments after surgery.

Risks and side effects of esophagectomy

Like most major operations, surgery of the esophagus has some risks. These risks include reactions to anesthesia, excess bleeding, blood clots in the lungs or elsewhere, and infections. Most people will have at least some pain after the operation, which can often be helped with medicines.

Lung problems are common. Some people may get pneumonia, leading to a longer hospital stay, and sometimes even death.

Some people might have voice changes after the surgery.

There may be a leak at the place where the stomach (or intestine) is attached to the esophagus, which could mean more surgery to fix it.

Sometimes the esophagus narrows, which causes trouble swallowing after surgery. To relieve this symptom, these narrow places can be stretched during an upper endoscopy.

After surgery, the stomach may empty too slowly. Sometimes this can lead to frequent nausea and vomiting.

After surgery, bile and stomach contents can get into the esophagus because the muscle that normally controls this (the lower esophageal sphincter) is often removed or changed by the surgery. This can cause heartburn and other symptoms. Sometimes antacids or other drugs can help relieve these symptoms.

Some complications from surgery can be very serious, even fatal. It is important to have a surgeon with experience and a hospital where these operations are done often. Don’t be afraid to ask the surgeon about his or her experience and about the survival rates at the hospital.

For more general information about surgery as a treatment for cancer, see *A Guide to Cancer Surgery*.

Surgery as palliative care

Sometimes minor types of surgery are used to help prevent or relieve problems caused by the cancer, instead of trying to cure it. For example, minor surgery can be used to put a feeding tube directly into the stomach or small intestine for people who need help getting enough nutrition.

Radiation treatment for cancer of the esophagus

Radiation treatment uses high energy rays (such as x-rays) to kill cancer cells. It is often combined with other types of treatment, such as chemotherapy (chemo) and/or surgery. Radiation may be used:

- As part of the main treatment in some patients, often along with chemo (known as *chemoradiation*). This is often used if people can't have surgery because of poor health or because they don't want surgery.
- Before surgery (and often along with chemo) to try to shrink the cancer and make it easier to remove (called *neoadjuvant treatment*).
- After surgery (and often along with chemo) to try to kill any cancer cells that may have been left behind. This is known as *adjuvant treatment*.
- To help ease the symptoms of advanced esophagus cancer such as pain, bleeding, or trouble swallowing. This is called *palliative treatment*.

External radiation uses a beam from outside the body. This is the kind most often used for cancer of the esophagus. The treatment is much like getting an x-ray, but the radiation is stronger. Each treatment lasts only a few minutes, although the setup time – getting you into place for treatment – usually takes longer. Most often, treatments are given 5 days a week for several weeks.

For internal or implant radiation (also called *brachytherapy*), the doctor passes an endoscope (a long, flexible tube) down the throat to place radioactive material very close to the cancer. This is most often used with more advanced esophageal cancers to shrink tumors so a patient can swallow more easily. This method is better used as a way to relieve symptoms (and not to try to cure the cancer).

Side effects of radiation treatment

Side effects of external radiation can include:

- Skin changes in areas getting radiation – ranging from something like a sunburn to blisters and open sores
- Nausea and vomiting
- Diarrhea
- Extreme tiredness (fatigue)
- Painful sores in the mouth and throat
- Dry mouth or thick saliva

During treatment, the radiation kills the normal cells in the lining of the esophagus, which can make it hurt to swallow. This typically improves within a few weeks.

Often these side effects go away when treatment ends, but some may last longer. For example, in some cases radiation can narrow the esophagus, which might mean you will need further treatment. Radiation to the chest might damage the lungs and lead to trouble breathing and shortness of breath.

Talk with your doctor before and during treatment about what side effects you can expect and how they could be reduced.

If you want to know more about this type of treatment, please see the Radiation Therapy section of our website or *Understanding Radiation Therapy: A Guide for Patients and Families*.

Chemotherapy for cancer of the esophagus

Chemotherapy (chemo) is the use of drugs to kill cancer cells. Usually the drugs are given into a vein or taken by mouth. Once the drugs enter the bloodstream, they spread throughout the body.

Chemo by itself rarely cures esophageal cancer. Often it is combined with radiation (known as *chemoradiation*).

Chemo can be used in several ways:

- As part of the main treatment along with radiation
- Before surgery (most often with radiation) to shrink the cancer and make it easier to remove. This called *neoadjuvant treatment*.
- After the cancer has been treated by surgery (and most often with radiation) to try to kill any tumor cells that may have been left behind. This is called *adjuvant treatment*.
- Alone or with radiation to help control symptoms like pain or trouble swallowing when the cancer can’t be cured. This is called *palliative treatment*.

Many different chemo drugs can be used to treat esophagus cancer. Doctors give chemo in cycles, with each period of treatment followed by a rest period to allow the body time to recover. Each chemo cycle typically lasts for a few weeks.

Side effects of chemotherapy

The side effects of chemo will depend on the type of drugs given, the amount taken, and how long treatment lasts. The most common side effects include:

- Nausea and vomiting

- Loss of appetite
- Hair loss
- Mouth sores
- Diarrhea or constipation
- Increased chance of infection (from a shortage of white blood cells)
- Bleeding or bruising after minor cuts or injuries (from a shortage of blood platelets)
- Tiredness or shortness of breath (from a shortage of red blood cells)

Along with the risks above, some chemo drugs can cause other, less common side effects, such as nerve damage. Most side effects go away once treatment is over. If you have side effects, talk with your doctor or nurse, as there are often ways to help.

People with esophageal cancer often have problems such as trouble eating and weight loss before the cancer is even found. Treatments like chemo and radiation can cause painful sores in the mouth and throat, which can make it even harder to eat and get good nutrition. Some people with esophagus cancer need to have a feeding tube put in before treatment. This is done through a small hole in the skin over the belly during a minor surgery. The tube allows liquid "food" to be put right into the intestine. A feeding tube can help prevent further weight loss and may help make it easier to get through treatment.

If you want to learn more about chemo, see the Chemotherapy section of our website, or our *A Guide to Chemotherapy*.

Targeted therapy for cancer of the esophagus

As researchers have learned more about the changes in cells that cause cancer, they have been able to find newer drugs that are aimed at (target) these changes. Targeted drugs are different from standard chemo drugs. Sometimes they work when standard chemo drugs don't, and they often have different (and less severe) side effects.

Trastuzumab (Herceptin®): This drug targets HER2, a protein that helps some cancer cells grow. It may help treat some esophagus cancers when used with chemo. If you have esophagus cancer and can't have surgery, your doctor may have your tumor biopsy samples tested for HER2. Only cancers that have too much of the HER2 protein are likely to respond to this drug.

Ramucirumab (Cyramza®): Tumors need to make need blood vessels to grow. One of the proteins that tells the body to make new blood vessels is called *VEGF*. Ramucirumab is a drug that keeps VEGF from signaling the body to make more blood vessels. This can help slow or stop the growth and spread of cancer.

Ramucirumab is used to treat advanced cancers of the gastroesophageal (GE) junction (where the esophagus and stomach meet).

Other treatments for cancer of the esophagus

Other types of treatment can also be used to help treat cancer of the esophagus. Many of these treatments are done by passing an endoscope (a long, flexible tube) down the throat and into the esophagus. Some of these can be used to try to cure or even prevent very early-stage cancers. Others are used mainly to help relieve symptoms from more advanced cancers that can't be removed.

Endoscopic mucosal resection (EMR)

In EMR, the doctor removes part of the inner lining of the esophagus using instruments passed down the endoscope. EMR can be used for dysplasia (pre-cancer or cell changes that have not yet become cancer) and some small, very early-stage cancers of the esophagus. After the abnormal tissue is removed, the patient will be given drugs to reduce stomach acid. This can help keep the disease from coming back.

The most common side effect of EMR is bleeding in the esophagus, which is usually not serious. Less often it might cause narrowing or holes in the esophagus.

Radiofrequency ablation (RFA)

RFA may be used to treat areas of abnormal cells (called *dysplasia*) in Barrett's esophagus. A balloon with many small electrodes is passed into an area of Barrett's esophagus. It is inflated so that the surface of the balloon is in contact with the inner lining. Then high-power energy is passed through the balloon to kill the cells in the lining by heating them. Over time, normal cells grow in to replace the Barrett's cells.

The patient will need to stay on drugs to block the stomach from making too much acid after the treatment. Endoscopies (with biopsies) are then done to watch for any further changes in the lining of the esophagus.

Photodynamic therapy (PDT)

This method may be used to treat Barrett's esophagus, esophageal pre-cancers (dysplasia), and some very early stage cancers.

PDT is also often used to treat large cancers that are blocking the esophagus. Here, PDT is not meant to destroy all of the cancer, but to kill enough of the cancer to help a person swallow.

First, a harmless chemical is put into the bloodstream. It collects in the tumor for a few days. Then a special type of laser light is focused on the cancer through an endoscope. The light “turns on” the chemical in the tumor so that it can kill cancer cells.

PDT is useful because it can kill cancer cells with very little harm to normal cells. But because the light must be used, it can only reach cancers near the surface of the esophagus. It doesn’t work for cancers that have spread deeper or into other organs.

Side effects of PDT include swelling in the esophagus for a few days, which may lead to some problems swallowing. Some patients also develop scar tissue that narrows the esophagus. Other side effects could include bleeding or holes in the esophagus. PDT can also cause redness of the skin and sensitivity to the sun or other light sources. Because of this, people having this treatment may be told to stay indoors for about 4 to 6 weeks.

People getting this treatment need to have follow-up endoscopies to make sure the cancer hasn’t grown back. They also need to stay on drugs to stop the stomach from making too much acid.

To find out more, see *Photodynamic Therapy*.

Laser ablation

This method uses a laser that is aimed through the endoscope to kill cancer cells. It is used to open up the esophagus when it is blocked. This can make swallowing problems better. The cancer often grows back, so the treatment may need to be done again every month or two.

Argon plasma coagulation

This method is something like laser ablation, but it uses argon gas to burn the tumor. It is used to unblock the esophagus when the patient has trouble swallowing.

Electrocoagulation

This treatment burns the tumor off with electric current. In some cases, it can help relieve esophageal blockage.

Esophageal dilation

This procedure is used to stretch out an area of the esophagus that is narrowed or blocked to help a person swallow.

A small balloon-like device or a device shaped like a cylinder is passed down the throat and pushed through the narrowed area to stretch it out. This can be repeated if needed.

Before the procedure, your doctor might give you a sedative to help you relax and may spray your throat to numb it.

There is a small risk of bleeding or tearing a hole in the esophagus with this procedure, which could require surgery or other treatments to fix. The esophagus typically stays open only a few weeks after dilation, so this is often followed by other treatments (such as placing a stent) to help keep the esophagus open.

Esophageal stent

A stent is a small tube that helps hold the esophagus open. Most often stents are made out of metal, but they can also be made out of plastic. Using endoscopy, a stent can be placed into the esophagus across the length of the tumor.

The success of the stent depends on the type of stent that is used and where it is placed. Stents will relieve trouble swallowing in most patients. They are often used after some of the other treatments above to help keep the esophagus open.

Questions to ask your doctor about cancer of the esophagus

As you cope with cancer and its treatment, you need to have honest, open talks with your doctors. You should ask any question, no matter how small it might seem. Here are some questions you might want to ask. Be sure to add your own questions as you think of them.

- Would you please write down the type of esophagus cancer I have?
- Has my cancer spread beyond where it started?
- What is the stage of my cancer, and what does that mean?
- Do I need other tests before we can decide on treatment?
- Do I need to see other doctors?
- How often have you treated this type of cancer? What were the results?
- Should I get a second opinion? Can you recommend a doctor or cancer center?
- What are my treatment choices?
- What do you recommend? Why?
- What is the goal of each treatment?
- What are the chances my cancer can be cured with these options?

- What risks or side effects should I expect? How long are they likely to last?
- Will treatment affect my ability to swallow or eat?
- Will treatment affect my voice?
- How soon do I need to start treatment?
- What should I do to be ready for treatment?
- Should I follow a special diet?
- How long will treatment last? What will it be like? Where will it be done?
- What are the chances my cancer will come back with this treatment plan?
- What will we do if the treatment doesn't work or if the cancer recurs?
- What type of follow-up will I need after treatment?
- Where can I get more information and support?

Add your own questions as well.

Keep in mind that doctors are not the only ones who can provide you with information. Other health care professionals, such as nurses and social workers, may have the answers to some of your questions. You can find more information about communicating with your health care team in *Talking With Your Doctor*.

Moving on after treatment

For some people with esophagus cancer, treatment can remove or destroy the cancer. Completing treatment can be both stressful and exciting. You may be relieved to finish treatment, but find it hard not to worry about cancer coming back. (When cancer comes back after treatment, it is called *recurrence*.) This is a very common concern in people who have had cancer.

It may take a while before your fears lessen. But it may help to know that many cancer survivors have learned to live with this uncertainty and are leading full lives. To learn more, see *Living With Uncertainty: The Fear of Cancer Recurrence*.

For other people, the esophagus cancer might never go away completely. These people may get regular treatments with chemotherapy, radiation, or other treatments to help keep the cancer in check. Learning to live with cancer as an on-going disease can be difficult and very stressful. It has its own type of uncertainty. See *When Cancer Doesn't Go Away* for more about this.

Follow-up care

If you have finished treatment, your doctors will still want to watch you closely. It's very important to keep all these follow-up visits. Your doctors will ask about symptoms, examine you, and may order blood tests, upper endoscopy, or imaging tests such as barium swallows or CT scans. These tests are described in "How is cancer of the esophagus found?" Follow-up is needed to check for cancer that has come back or spread, and to look for possible side effects of certain treatments. Use these visits to ask your health care team questions and discuss any concerns you might have.

Almost any cancer treatment can have side effects. Some may last for a few weeks or months, but others can last for the rest of your life. It is very important to report any new symptoms to the doctor right away, especially if they include trouble swallowing or chest pain. Early treatment can relieve many symptoms and improve your quality of life.

If cancer does come back, treatment will depend on where it is, what treatments you've had before, and your overall health. For more on dealing with a cancer recurrence, see *When Your Cancer Comes Back: Cancer Recurrence*.

Help for trouble swallowing, nutrition, and pain

Some treatments are aimed at helping to relieve the symptoms of esophagus cancer, rather than trying to cure the cancer. These are called *palliative treatments*. In some cases they are used along with other treatments that focus on curing the cancer, but palliative treatments are often used in people with advanced cancer to help improve their quality of life.

Cancer of the esophagus often causes trouble swallowing, which can lead to weight loss and weakness due to poor nutrition. Your doctor and others can work with you to help you eat well and maintain your weight. For more information and nutrition tips for during and after cancer treatment, see *Nutrition for the Person With Cancer During Treatment: A Guide for Patients and Families*.

There are many ways to control pain caused by cancer of the esophagus. If you have pain, tell your cancer care team right away, so they can make sure you get good relief. For more information, see *Guide to Controlling Cancer Pain.*

For more on some of the treatments that can be used to help relieve symptoms like pain or trouble swallowing, see "Other treatments for cancer of the esophagus."

Seeing a new doctor

At some point after your cancer is found and treated, you may find yourself seeing a new doctor who doesn't know about your cancer. It's important that you be able to give your new doctor the exact details of your diagnosis and treatment. Gathering these details

during and soon after treatment may be easier than trying to get them at some point in the future. Make sure you have this information handy and always keep copies for yourself:

- A copy of your pathology report(s) from any biopsies or surgeries
- Copies of imaging tests (CT or MRI scans, etc.), which can often be stored digitally (on a DVD, etc.)
- If you had surgery, a copy of your operative report
- If you stayed in the hospital, a copy of the discharge summary that the doctor wrote when you were sent home
- If you had radiation treatment, a summary of the type and dose of radiation and when and where it was given
- If you had chemotherapy or targeted therapy, a list of your drugs, drug doses, and when you took them
- The names and contact information of the doctors who treated your cancer

Lifestyle changes after treatment for cancer of the esophagus

You can’t change the fact that you have had cancer. What you can change is how you live the rest of your life – making choices to help you stay healthy and feel as well as you can. This can be a time to look at your life in new ways. Maybe you’re thinking about how to improve your health over the long term. Some people even start during cancer treatment.

Make healthier choices

For many people, finding out they have cancer helps them focus on their health in ways they may not have thought much about in the past. Are there things you could do that might make you healthier? Maybe you could try to eat better or get more exercise. Maybe you could cut down on alcohol, or give up tobacco. Even things like keeping your stress level under control might help. Now is a good time to think about making changes that can have good effects for the rest of your life. You will feel better and you will also be healthier.

You can start by working on those things that worry you most. Get help with those that are harder for you. For instance, if you are thinking about quitting smoking and need help, call the American Cancer Society at 1-800-227-2345.

Eating better

Eating right is hard for many people. This is especially true for people with esophagus cancer. The cancer or its treatment can affect how you swallow. Nausea can be a problem from some treatments. You may lose your appetite for a while and lose weight when you don't want to.

During treatment: Many people lose weight or have taste problems during treatment. If this happens to you, do the best you can. Eat whatever appeals to you. Eat what you can, when you can. Now is not the time to restrict your diet. You may find it helps to eat small portions every 2 to 3 hours. Try to keep in mind that these problems usually improve over time. You may want to ask your cancer team about seeing a dietitian, an expert in nutrition who can give you ideas on how to fight some of the side effects of your treatment.

After treatment: Many patients have trouble with reflux after treatment. It may help to stay upright for several hours after eating.

In some patients, the stomach was used to replace all or part of the esophagus. This can mean that the stomach can't hold food for digestion like it did before. The food that is swallowed quickly passes into the intestine, leading to symptoms of diarrhea, sweating, and flushing after eating. This is called the *dumping syndrome*. This may mean you have to change your diet and how you eat. For example, you may need to eat smaller amounts of food more often.

Your health care team can help you adjust your diet if you are having problems eating.

One of the best things you can do after treatment is to put healthy eating habits into place. You may be surprised at the long-term benefits of some simple changes, like increasing the variety of healthy foods you eat. Getting to and staying at a healthy weight, eating a healthy diet, and limiting your alcohol intake may lower your risk for a number of types of cancer, as well as having many other health benefits.

For more information, see *Nutrition and Physical Activity During and After Cancer Treatment: Answers to Common Questions*.

Rest, fatigue, and exercise

Feeling tired (fatigue) is a very common problem during and after cancer treatment. This is not a normal type of tiredness but a bone-weary exhaustion that often doesn't get better with rest. For some people, fatigue lasts a long time after treatment and can keep them from staying active. But exercise can actually help reduce fatigue and the sense of depression that sometimes comes with feeling so tired.

If you are very tired, though, you will need to balance activity with rest. It is OK to rest when you need to. To learn more about fatigue, see *Fatigue in People With Cancer* and *Anemia in People With Cancer*.

If you were very ill or weren't able to do much during treatment, it is normal that your fitness, staying power, and muscle strength declined. You need to find an activity that fits your needs. Talk with your health care team before starting. Get their input on your plans. Then try to get a buddy so that you're not doing it alone.

If you are very tired, you will need to balance activity with rest. It is OK to rest when you need to. Sometimes it's really hard for people to allow themselves to rest when they are used to working all day or taking care of a household, but this is not the time to push yourself too hard. Listen to your body and rest when you need to.

Exercise can improve your physical and emotional health.

- It improves your cardiovascular (heart and circulation) fitness.
- It makes your muscles stronger.
- It reduces fatigue.
- It helps lower anxiety and depression.
- It can make you feel generally happier.
- It helps you feel better about yourself.

Long term, we know that getting regular physical activity plays a role in helping to lower the risk of some cancers, as well as having other health benefits.

Can I lower the risk of my esophagus cancer growing or coming back?

Most people want to know if there are certain lifestyle changes they can make to reduce their risk of their cancer growing or coming back. Unfortunately, for most cancers there isn't much solid evidence to guide people. This doesn't mean that nothing will help – it's just that for the most part this is something that hasn't been well studied. Most studies have looked at lifestyle changes as ways of preventing cancer in the first place, not slowing it down or keeping it from coming back.

At this time, not enough is known about esophagus cancer to say for sure there are things you can do that will be helpful. Tobacco and alcohol use have clearly been linked to esophagus cancer, so not smoking or drinking may help reduce your risk. We don't know for certain if this will help, but we do know that it can help improve your appetite and overall health. It can also reduce the chance of getting other types of cancer. If you want to quit smoking and need help, call your American Cancer Society at 1-800-227-2345.

Other healthy behaviors such as eating well, getting regular exercise, and staying at a healthy weight may help as well, but no one knows for sure. However, we do know that these types of changes can have positive effects on your health that can extend beyond your risk of cancer.

How might having esophagus cancer affect your emotional health?

During and after treatment, you may find yourself overcome with many different emotions. This happens to a lot of people. You may find that you think about the effect of your cancer on things like your family, friends, and career. Money may be a concern as the medical bills pile up. Unexpected issues may also cause concern – for instance, as you get better and need fewer doctor visits, you will see your health care team less often. This can be hard for some people.

This is a good time to look for emotional and social support. You need people you can turn to. Support can come in many forms: family, friends, cancer support groups, church or spiritual groups, online support communities, or private counselors.

The cancer journey can feel very lonely. You don't need to go it alone. Your friends and family may feel shut out if you decide not include them. Let them in – and let in anyone else who you feel may help. If you aren't sure who can help, call your American Cancer Society at 1-800-227-2345 and we can put you in touch with a group or resource that may work for you. You can also see *Distress in People with Cancer* or the Emotional Side Effects section of our website for more information.

If treatment for cancer of the esophagus is no longer working

When a person has had many different treatments and the cancer has not been cured, over time even newer treatments might no longer be helpful. At this time you may have to weigh the possible benefits of trying a new treatment against the downsides, like treatment side effects and clinic visits.

This is likely to be the hardest time in your battle with cancer – when you have tried everything within reason and it's just not working anymore. Your doctor might offer you new treatment, but you will need to talk about whether the treatment is likely to improve your health or change your outlook for survival.

No matter what you decide to do, it is important for you to feel as good as possible. Make sure you are asking for and getting treatment for pain, nausea, or any other problems you may have. This type of treatment is called *palliative treatment*. It helps relieve symptoms but is not meant to cure the cancer.

At some point you may want to think about hospice care. Most of the time this is given at home. Your cancer may be causing symptoms or problems that need to be treated.

Hospice focuses on your comfort. You should know that having hospice care doesn't mean you can't have treatment for the problems caused by your cancer or other health issues. It just means that the purpose of your care is to help you live life as fully as possible and to feel as well as you can. You can learn more about this in *Hospice Care*.

Staying hopeful is important, too. Your hope for a cure may not be as bright, but there is still hope for good times with family and friends – times that are filled with joy and meaning. Pausing at this time in your cancer treatment gives you a chance to refocus on the most important things in your life. Now is the time to do some things you've always wanted to do and to stop doing the things you no longer want to do. Though the cancer may be beyond your control, there are still choices you can make.

You can learn more about the changes that occur when treatment stops working, and about planning ahead for yourself and your family, in *Advance Directives* and *Nearing the End of Life*.

What's new in esophagus cancer research?

Research on the causes, prevention and treatment of this cancer is now being done around the world.

Genetics

Research has found that certain gene changes are more common in people with Barrett's esophagus. Once more is known about this, we might be able design new tests for finding the people who are likely to get Barrett's esophagus and esophageal cancer earlier, so that these problems can be prevented. Knowing about these changes may also lead to new targeted treatments that overcome the effects of these abnormal genes.

Screening and prevention

The rate of adenocarcinoma of the esophagus has risen sharply in recent decades. Efforts are now being made to reduce obesity, a major risk factor for this form of cancer (and several other types as well).

In people with Barrett's esophagus, researchers are trying to find out if newer tests can tell which patients are likely to go on to develop cancer. This may help doctors decide which patients need intense follow-up and which ones can be examined less often.

Researchers are also looking for ways to help stop Barrett's cells from turning into pre-cancer or cancer. Drugs that lower stomach acid and aspirin are now being studied for this purpose.

Treatment

Surgery

Doctors are using newer imaging tests and other tests to better determine which people are more likely to be helped by surgery to remove the esophagus, and which people are less likely to benefit from this major operation.

Doctors are also constantly improving surgery for esophageal cancer to make these operations safer and help patients recover more quickly.

Chemotherapy

Many studies are being done on new ways to combine chemo drugs to get the best results. Researchers are also studying the proteins inside esophagus cancer cells to see if they can tell if the cancer is likely to respond to chemo. This might help doctors choose the best treatment option for the person.

Targeted drugs

Drugs that target certain substances in the cancer cell are becoming available. This is known as *targeted therapy*. It has been successful in some other cancers, and is now coming into use for esophagus cancer.

How can I learn more about cancer of the esophagus?

We have a lot more information that you might find helpful. Explore www.cancer.org or call our National Cancer Information Center toll-free number, 1-800-227-2345. We're here to help you any time, day or night.

National organizations and websites*

Along with the American Cancer Society, other sources of information and support include:

Esophageal Cancer Awareness Association (ECAA)
Toll-free number: 1-800-601-0613
Website: www.ecaware.org

> Offers information from people who have or have had esophageal cancer on dealing with issues of diagnosis, treatment, and survival and support

National Cancer Institute
Toll-free number: 1-800-4-CANCER (1-800-422-6237)
TYY: 1-800-332-8615
Website: www.cancer.gov

> Offers a wide variety of free, accurate, up-to-date information about cancer to patients, their families, and the general public; also can help people find clinical trials in their area

National Coalition for Cancer Survivorship
Toll-free number: 1-888-650-9127
Website: www.canceradvocacy.org

> Has publications on many cancer-related topics; also offers the Cancer Survival Toolbox – a free program that teaches skills that can help people with cancer meet the challenges of their illness

**Inclusion on this list does not imply endorsement by the American Cancer Society.*

No matter who you are, we can help. Contact us anytime, day or night, for cancer-related information and support. Call us at 1-800-227-2345 or visit www.cancer.org.

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For additional assistance please contact your American Cancer Society
1-800-227-2345 or www.cancer.org