



Offered to you by:



Barrett's Esophagus

A Problem Caused by GERD

Barrett's esophagus is a complication of gastroesophageal reflux disease (GERD). GERD is often referred to as acid reflux.

Read this information to learn about Barrett's esophagus and how it is treated to prevent further problems.

If you have any questions about this information, talk with your health care provider.

Learn more about GERD

Ask your health care provider for more information about gastroesophageal reflux disease (GERD) and its possible treatments.

Why Reflux Happens

During normal digestion, food or liquid travels from your mouth through a tube called the esophagus into your stomach where acids and enzymes help digest it.

At the lower end of the esophagus is a circular band of muscle called the lower esophageal sphincter (LES). The LES acts as a one-way valve so that food or liquid passes through it but stomach contents are not able to come back up into the esophagus.

If the LES muscle is weak or does not work correctly, for example it relaxes at the wrong time, the contents of the stomach can come back up into the esophagus (reflux). The lining of the esophagus is sensitive to acid and is not protected like the lining of the stomach. This can cause troublesome symptoms, including heartburn and regurgitation.

Heartburn is a burning feeling that may rise up behind the breast bone that may be made worse by lying down or eating certain foods. Regurgitation is a feeling of food or fluid coming back up toward the throat. This may cause a bitter taste in the mouth.

When reflux happens often, typically two or more times a week, and interferes with daily life, it usually is considered gastroesophageal reflux disease (GERD).

Other less common GERD symptoms include sore throat, chronic cough, hoarseness, chest pain, or wheezing. It is possible to have GERD and feel no symptoms.

How GERD Leads to Barrett's Esophagus

If stomach acid or partially digested food comes up into the esophagus over and over again for years, cells in the tissue of the esophagus can be damaged. This is called reflux esophagitis. “-itis” means inflamed. When this happens, certain foods and drinks may cause a burning sensation as they go down the esophagus.

Sometimes the damaged cells change into another type of cell. This process is called metaplasia.

In the case of “intestinal metaplasia,” the cells become more like tissue found in the intestines. The cells do this to protect themselves and the esophagus from acid. Sometimes intestinal metaplasia happens where the esophagus joins the stomach, known as the cardia. With intestinal metaplasia of the cardia, tissue at the top of the stomach changes. Usually, this is not a problem and no treatment is needed other than treating GERD symptoms.

If metaplasia happens in the esophagus, this is called Barrett’s esophagus. If the tissue changes go no more than 3 cm or about an inch up the esophagus, it is called short segment Barrett’s esophagus. If the tissue changes go farther up, it is called long segment Barrett’s esophagus. See Figure 1.

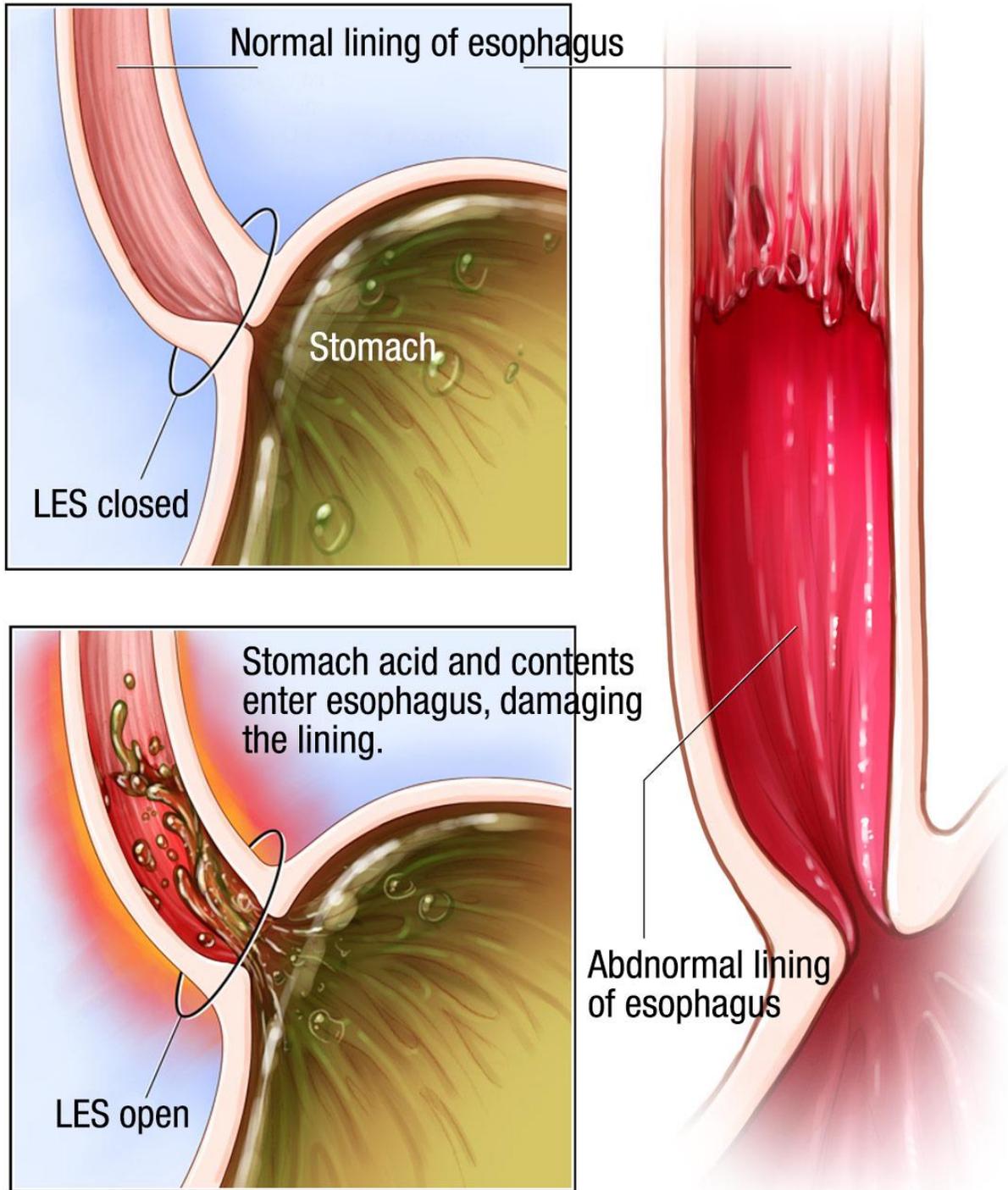


Figure 1. Barrett's Esophagus

Who Is at Risk for Barrett's Esophagus

While GERD is a key factor for developing Barrett's esophagus, some people are at higher risk than others. Barrett's esophagus is more common in:

- People who are white more often than other races.
- Men more often than women.
- People who have excess fat around their abdomen.
- Those who smoke.

Cell Changes With Barrett's Esophagus

Over time, the cells involved in Barrett's esophagus may become abnormal and considered to be "precancerous." This means the cells could become cancerous in the future.

A word that describes abnormal cells is dysplasia. Low-grade dysplasia means some cells have changed but there is no immediate danger of them becoming cancerous. The dysplasia may go away, or the cells may become more abnormal over time.

High-grade dysplasia means more serious changes have happened to the cells. The risk of cancer is higher.

Cancer cells can be hard to detect in the beginning. For this reason, your health care team may recommend treatment to remove or destroy the abnormal cells most likely to become cancerous.

Most people who have Barrett's esophagus do **not** get cancer. Talk with your health care provider about your risk of developing cancer.

Monitoring Barrett's Esophagus

It may be hard for you to know what is really happening in your esophagus. Many people with Barrett's esophagus have no symptoms. Therefore, if you are diagnosed with Barrett's esophagus, **it is important to have follow-up examinations of your esophagus.**

Your health care provider may monitor your condition with upper endoscopy (EGD). This test gives your health care team a direct view of the inside of your esophagus to look for any damage reflux has done to your esophagus. See Figure 2.

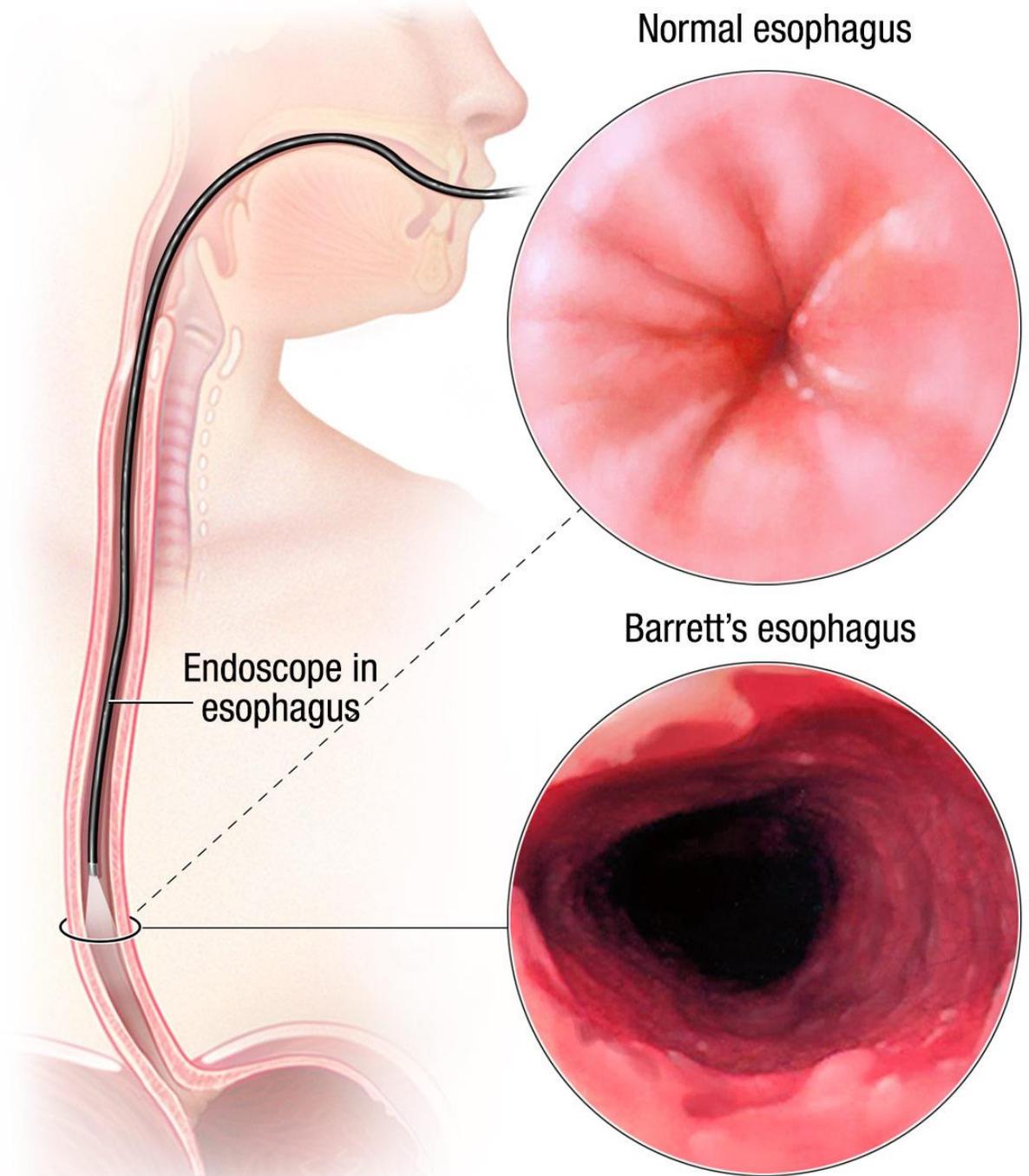


Figure 2. Upper endoscopy (EGD)

© MAYO FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH. ALL RIGHTS RESERVED.

During an EGD, a thin, flexible tube with a light and camera (endoscope) is put through your mouth and moved down into your esophagus. Small pieces of tissue may be taken during endoscopy to be looked at under a microscope test for signs of dysplasia. This is called a biopsy.

Talk with your health care provider about how often you should have upper endoscopy based on the ongoing condition of your esophagus. This may range from six months to three years.

Talk with your health care provider to develop a plan for treating your current condition. Then follow that plan.

Treating GERD

Whatever the condition of your esophagus, it is important to **treat reflux to help you feel your best and to help avoid future problems**. Treatment options for GERD include:

- Lifestyle changes.
- Medications.
- Surgery.

Ask your health care provider for more information about these treatments.

Treating Barrett's Esophagus

Cells in your esophagus with low-grade dysplasia usually are not a cause for alarm. The typical treatment is to check them with upper endoscopy on a regular schedule.

If upper endoscopy shows high-grade dysplasia, you and your health care provider can talk about the following treatment options. While cells with high-grade dysplasia are considered precancerous, this does not mean you have cancer or that you will definitely get it. It means these cells have a higher risk of becoming cancerous.

Before deciding on any treatment, discuss the risks and benefits with your health care provider. Ask your health care provider how often you should have follow-up examinations of your esophagus.

Follow-up endoscopies

Upper endoscopy is done about every three months to see if the cells become cancerous.

Esophagectomy

“Ectomy” means to remove. With this surgical procedure, part of the esophagus is removed, along with the top part of the stomach and nearby lymph nodes that might contain abnormal cells. Lymph nodes capture bacteria, viruses and other harmful material, including abnormal cells, moving through the body. Typically, the remainder of the stomach is pulled up through the hiatus and attached to the remaining part of the esophagus.

Cancer cannot develop in a part of the esophagus that is completely removed, and cancer rarely develops in the remaining esophagus after an esophagectomy. With other treatment options,

there is a possibility that cancer can develop in the part of the esophagus underneath the area that is treated.

The risks of an esophagectomy in the first month after surgery include infection, bleeding and leaking from the area where the remaining esophagus is attached to the stomach. As with any major surgery, an esophagectomy carries the risk of death.

After an esophagectomy, food may move more quickly from the stomach into the lower intestine. With certain foods, this can lead to a problem called “dumping,” causing weakness, sweating, diarrhea and abrupt tiredness after eating. These effects can be reduced by avoiding foods with high sugar content.

Food also may move more slowly after an esophagectomy, leading to reflux or a feeling of fullness in the chest after eating. This can be reduced by chewing well; avoiding certain foods; favoring soft foods; eating smaller, more frequent meals; and not eating within three hours before bedtime.

Endoscopic mucosal resection

If the abnormal cells are in a nodule, an endoscopic mucosal resection might be performed. Resection refers to something that is removed. Mucosal refers to tissue that secretes mucus, such as the inner lining of the esophagus. In this procedure, an endoscope is used to remove the lining of your esophagus that contains cells with high-grade dysplasia.

The physician uses the endoscope to inject a solution underneath the nodule. This makes it easier to remove the nodule and reduces the risk of bleeding. The physician sucks the section of tissue containing the nodule into a cap and puts a band around it. A heated wire loop cuts off the nodule and burns the remaining tissue to help prevent bleeding. The nodule is removed so the tissue can be examined for signs of cancer.

For several weeks after an endoscopic mucosal resection, there is a risk of bleeding. During that time it is important to avoid taking medications that can increase bleeding, such as aspirin or ibuprofen. Talk to your health care provider if you take blood thinner medication. It also is important to swallow any pills you take with enough water to wash them down the esophagus. Otherwise, they may irritate the area where tissue was removed.

Photodynamic therapy

Photodynamic therapy is an option for destroying abnormal cells. Photodynamic means something that is activated by light.

Two days before this treatment, light-sensitive medication is given. This medication is absorbed by all the cells in the body, but it builds up to a much greater degree in cancerous or precancerous cells.

When the medication has been absorbed, the physician uses an endoscope to guide a laser to the site of the abnormal cells. The light from the laser activates the medication in the light-sensitive

abnormal cells to destroy them. Typically, healthy cells grow back in their place. This procedure may be repeated a number of times, with several months in between.

Some of the medication stays in the other cells of the body for a time, making them extremely sensitive to sunlight and certain types of artificial light. Exposure to sunlight during this time can result in blistering, severe burns and other damage to your skin or eyes. Talk with your health care provider about how to protect your skin and eyes for up to six weeks after this treatment.

Photodynamic therapy is sometimes used after an endoscopic mucosal resection.

Other treatments

There are two newer treatments which have been approved by the FDA for treating Barrett's esophagus with high-grade dysplasia. Their long-term effectiveness has not yet been proven. The data collected to date, however, has been promising.

One of them uses radiofrequency ablation. Ablation means to destroy. The physician uses an endoscope to insert a thin tube, or catheter, with a balloon at the end. The balloon has electrodes on the outer surface that deliver energy. The balloon is inflated so the electrodes are touching the abnormal tissue. The physician delivers enough energy to destroy the tissue.

Another treatment option, called cryotherapy, uses extreme cold to destroy abnormal cells. "Cryo" means freezing. A catheter is guided to the site of the abnormal cells through an endoscope. The physician sprays liquid nitrogen onto the tissue to freeze it and destroy the cells. This procedure may be repeated a number of times, with a month or two in between.

Clinical trials

Talk with your health care provider about any possible clinical trials for new or improved treatment for GERD or Barrett's esophagus.

A final note about treatments

It is difficult to tell if the treatments that affect only part of the lining of the esophagus destroy all the abnormal cells. Precancerous cells may be left underneath the area that is treated.

Even if all the abnormal cells are removed, high-grade dysplasia may happen again.

These treatments are sometimes used in combination. They typically require a number of visits to the hospital. All of them may result in scarring in the esophagus, which can cause difficulty swallowing. The risk of scarring is smallest with radiofrequency ablation.

Work with your health care team to develop a plan for regularly checking the condition of your esophagus and taking appropriate steps to protect your health.

The Possibility of Cancer

Most people with Barrett's esophagus do not get cancer of the esophagus. However, if cancerous cells do appear, it is important to begin treatment as soon as possible. To properly treat cancer, it is important to know how deeply it has invaded the esophagus and where it is located.

At the beginning, cancer may happen only in the top layer of the esophagus lining, where it is easier to cure. As it advances, cancer may go deeper into the wall of the esophagus and possibly spread to lymph nodes or other organs.

When cancer is in the esophagus and has not invaded very deeply, it is called "early-stage disease." When cancer is deep in the esophagus or has spread to nearby lymph nodes, it is called "locally advanced disease." When cancer has spread to other organs, it is called "late-stage disease."

Tests to locate cancer

There are a number of tests that help locate cancer in the body. To make the best use of your time and financial resources, these are typically done in a certain order.

First, a CT scan may be done to see if cancer has spread to the lungs or liver. If cancer is not seen, a PET scan may be done. In this test, a small amount of a low-level radioactive substance is added to the blood. Tumors absorb more of this substance than healthy tissue does, causing them to show up on the image.

Instead of ordering a CT scan followed by a PET scan, your physician may order a test that combines both technologies in one procedure.

If a scan shows cancer outside the esophagus, the usual procedure is to take a biopsy of the tissue. If cancer is confirmed, the next step is to discuss treatment options with providers who specialize in the treatment of cancer.

If the scans do not show cancer outside the esophagus, your physician may order an endoscopic ultrasound of the area where the tumor was originally found. An ultrasound probe sends out sound waves that help produce images. These images may show the depth of the tumor and whether cancer cells are in the lymph nodes.

It is important to know that individual cancer cells in lymph nodes may not be seen by CT scans, PET scans or ultrasound.

Treating cancer

There are many ways to treat cancer of the esophagus, including esophagectomy, endoscopic mucosal resection, photodynamic therapy, chemotherapy and radiation. Sometimes these treatments are used in combination.

The treatments used depend on whether the cancer is early stage, late stage or locally advanced, your condition and other factors. Discuss your treatment options, including the risks and benefits of each, with your health care team.

The chance of curing esophageal cancer is relatively high if it is found early and promptly treated.

For More Information

If you have questions about the information in this material or would like more information, talk with your health care provider.

This material is for your education and information only. This content does not replace medical advice, diagnosis or treatment. New medical research may change this information. If you have questions about a medical condition, always talk with your health care provider.

- © 2014 Mayo Foundation for Medical Education and Research (MFMER). All rights reserved.

MC6373-02rev1017