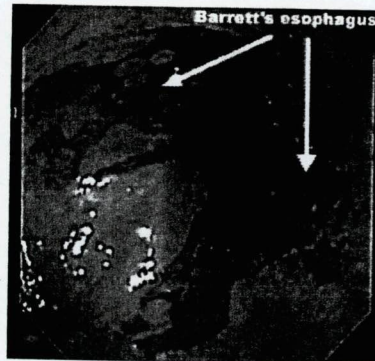


# Barrett's Esophagus

Barrett's esophagus is a pre-cancerous condition affecting the lining of the esophagus, the swallowing tube that carries foods and liquids from the mouth to the stomach.



Heartburn is a burning sensation felt behind the breastbone and sometimes in the neck and throat. It is caused by stomach acid refluxing or splashing up into the esophagus -- the muscular tube that connects the throat to the stomach. At the lower end of the esophagus where it enters the stomach, there is a strong muscular ring called the Lower Esophageal Sphincter (LES). The LES should remain tightly closed, except to allow food and liquid to pass into the stomach. Heartburn occurs when the LES opens at the wrong time. Almost everyone has this occasionally, and it is nothing to be concerned about. However, heartburn that is severe or that occurs frequently over a long period of time can be harmful. This is known as Gastroesophageal Reflux Disease (GERD). If GERD is untreated, there is constant acid irritation to the lining of the esophagus, and complications can occur. About 1 in 10 patients with GERD are found to have a condition called Barrett's esophagus. It can be serious and may lead to cancer of the esophagus.

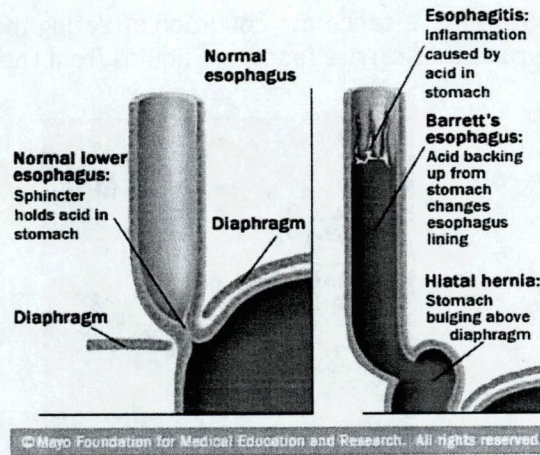
## What is Barrett's Esophagus?

The cells lining the esophagus differ from those lining the stomach or intestines, mainly because they have different functions. They also have a distinctly different appearance, so it is usually easy for a physician to tell them apart when examining the esophagus and stomach. Normally, there is an area at the end of the esophagus that marks the border between the cells of the esophagus and those of the stomach. Barrett's esophagus is the abnormal growth of intestinal-type cells above this border, into the esophagus.

Since the cells lining the stomach are protected from contact with acid, their growth into the esophagus may actually be a defense mechanism. It may protect the normal tissue in the esophagus against further damage by GERD. This may explain why the symptoms of GERD seem to lessen in some patients with Barrett's esophagus. Unfortunately, these tissue changes may be a forerunner of cancer of the lower esophagus, known as adenocarcinoma. Cancer of the upper esophagus (squamous cell cancer) is usually related to alcohol and smoking. This type of cancer appears to be decreasing in the population, while the rate of adenocarcinoma is increasing sharply, especially in white males.



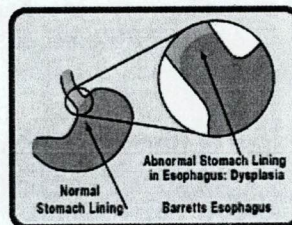
In time, the Barrett's cells may develop abnormal changes known as dysplasia. Over a period of perhaps two to five years, the dysplasia may then progress to low grade, then to high grade dysplasia, and finally to cancer. Fortunately, this happens only in about 1-5% of patients with Barrett's esophagus.



### Cause and Symptoms

For unknown reasons, Barrett's esophagus is found three times more often in males than in females. In some instances, Barrett's esophagus appears to be congenital (present at birth). However, current evidence is strong that in most instances, it develops as a result of longstanding GERD.

Patients with Barrett's usually have symptoms similar to those produced by chronic GERD, such as heartburn and reflux of stomach acid into the mouth. Some Barrett's patients may also suffer from other complications of GERD, such as esophageal peptic ulcers and stricture -- narrowing of the esophagus that comes from scarring. These facts are why it is important for patients with these symptoms to see their physicians regularly.



### Diagnosis

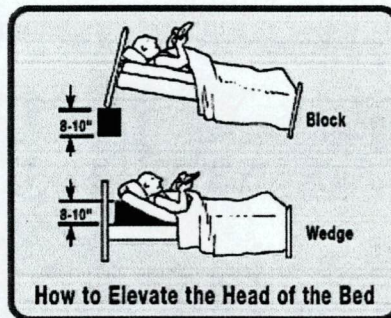
Diagnosis of Barrett's esophagus requires an examination called upper endoscopy or EGD (esophagogastroduodenoscopy). A barium x-ray is not accurate for detecting Barrett's esophagus. An EGD is done with the patient under sedation. The physician examines the lining of the esophagus and stomach with a thin, lighted, flexible endoscope. Biopsies are performed, taking pieces of tissue to be examined under a microscope for abnormal cells which have the potential of becoming malignant. The changes may be indefinite dysplasia where the pathologist may be uncertain of the changes. In this circumstance, medical treatment is intensified and repeat biopsies are performed in 6-12 months. When dysplasia is definite, some type of definite correction is necessary.



## Things Patients Can Do

Currently, there are no medications to reverse Barrett's esophagus. However, it appears that treating the underlying GERD may slow the progress of the disease and prevent complications. Following are some things the patient can do to help reduce acid reflux and strengthen the LES.

- Avoid eating anything within three hours before bedtime.
- Avoid smoking and tobacco products. Nicotine in the blood weakens the LES.
- Reduce consumption of fatty foods, milk, chocolate, mints, caffeine, carbonated drinks, citrus fruits and juices, tomato products, pepper seasoning, and alcohol (especially red wine).
- Eat smaller meals. Avoid tight clothing or bending over after eating.
- Review all medications with the physician. Certain drugs can actually weaken the LES.
- Elevate the head of the bed or mattress 6 to 8 inches. This helps to keep acid in the stomach. Pillows by themselves are not very helpful. Wedging pillows under the head tends to bend the body at the waist which can push more fluid back up into the esophagus.
- Lose weight if overweight. This may relieve upward pressure on the stomach and LES.



## Medications

A certain category of drugs called proton pump inhibitors are the main tool used to markedly reduce stomach acid. These include Prilosec (omeprazole), Prevacid (lansoprazole), AcipHex (rabeprazole), Protonix (pantoprazole) and Nexium (esomeprazole) taken once or twice a day. All of these are equally effective despite some deceptive advertising. Other acid reducing drugs such as Zantac, Pepcid, Axid, and Tagamet are also available. Reglan (metoclopramide) is a drug that can strengthen the LES and so help.





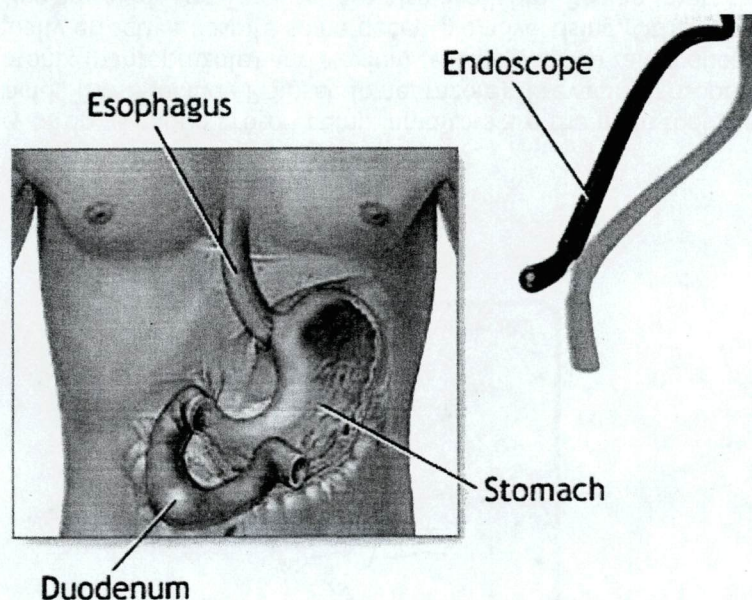
## Surgery

Certain patients with GERD may need surgery to strengthen the LES. This type of surgery is called fundoplication. It is now done by laparoscopy. Laparoscopy is minimally invasive surgery, performed with a tiny incision at the naval and a few needle points in the upper abdomen.

## Monitoring

A diagnosis of Barrett's esophagus requires regular monitoring by a physician. While it is thought that controlling GERD reduces the risk of developing cancer, this has not yet been definitely proven. Therefore, the physician must perform regular endoscopy exams and biopsies to look for dysplasia. Just how often these exams are repeated depends on how far the disease has advanced. If cancer is found, surgery to remove the lower esophagus is usually necessary.

Physicians often recommend this procedure when high grade dysplasia is present, so as to prevent the cancer that is likely to occur.



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## The Future

There are presently various newer treatments being studied. These involve the destruction of the abnormal cells in the esophagus without the need for major surgery.

## Summary

Barrett's esophagus is a condition that may develop as a result of chronic GERD. Barrett's tissue growing in the esophagus appears to be the body's defense against continued stomach acid irritation. Yet, this tissue does not belong in the esophagus, and for some patients, it increases the risk of developing cancer. While treatment does not reverse Barrett's, the likelihood of developing cancer and complications can probably be reduced with a combination of diet, lifestyle changes, medication, and/or surgery. A regular program of endoscopic examination and biopsy is essential to monitor the Barrett's tissue. By working closely with a physician, patients can expect good control of both GERD and Barrett's, and an excellent long-term outcome.