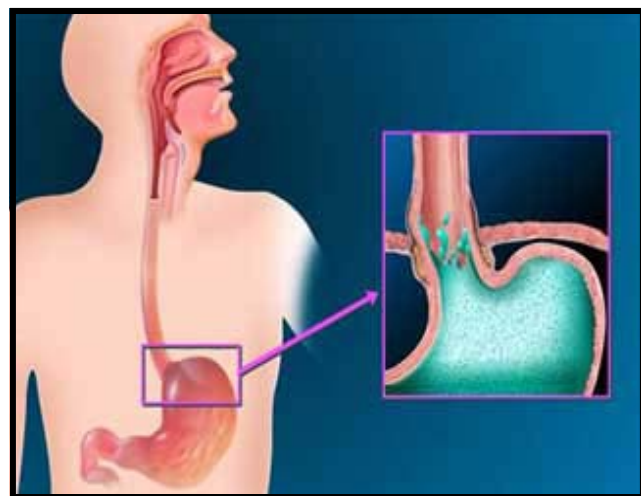


Barrett's Esophagus

What is Barrett's esophagus?

Barrett's esophagus is a pre-cancerous change in the lining of the esophagus caused by chronic reflux of stomach and duodenal contents into the esophagus or severe esophageal inflammation occurring over a long period of time (often ten years or more). The normal lining of the esophagus is injured and replaced with specialized cells similar to those in the lining of the intestine. Over time, the normal skin-like (squamous) cells in the lower part of the esophagus may begin to change, resulting in a pre-malignant condition known as Barrett's Esophagus. Barrett's Esophagus may be associated with scarring or narrowing of the esophagus resulting from chronic esophagitis. Esophageal erosion may or may not be present. It is unclear why some patients with reflux develop Barrett's esophagus whereas others do not.

Barrett's esophagus affects between 2 and 7 million adults over the age of 40 years in the United States. Patients with Barrett's are 30 times more likely to develop adenocarcinoma (esophageal cancer) than the general population. The incidence of esophageal cancer is rapidly rising.



Stomach acids back up into the esophagus from acid reflux or GERD causing a protective but potentially dangerous change in the lining of the esophagus called Barrett's Esophagus.

What are risk factors for Barrett's esophagus?

Recently, a number of risk factors have been defined for the development of Barrett's esophagus. These include the following:

- Early age of onset of reflux symptoms
- Long duration of reflux symptoms
- The presence of reflux symptoms at night

Patients at greatest risk of developing Barrett's are white males over age 50 with a history of chronic heartburn.

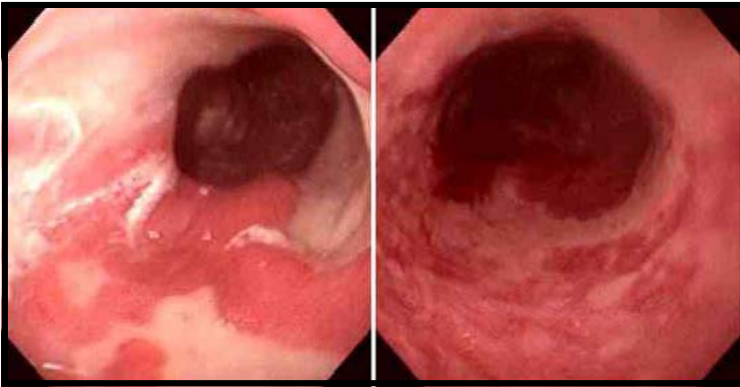
What are the symptoms of Barrett's esophagus?

The symptoms of Barrett's esophagus are no different than the symptoms of uncomplicated gastroesophageal reflux disease, or GERD. These include a burning sensation beneath the breast bone in the chest as well as acid regurgitation usually occurring after meals or at night. These symptoms often resolve with medications that decrease acid in the stomach.

Difficulty swallowing may also be seen in the setting of Barrett's esophagus. This is a symptom that requires immediate medical attention.

How is Barrett's esophagus diagnosed?

Barrett's esophagus cannot be diagnosed simply by history or an x-ray. The only way to confirm the diagnosis of Barrett's esophagus is with a test called an Upper G.I. Endoscopy, also known as Esophagogastroduodenoscopy [EGD.] This involves inserting a small lighted flexible instrument (endoscope) through the mouth into the esophagus to look for a change in the lining of the esophagus characteristic of Barrett's esophagus. The procedure takes less than 30 minutes to perform and the patient goes home following the procedure. While the appearance of the esophagus may suggest Barrett's esophagus (Barrett's esophagus appears as red-colored tissue, as compared to the normal pink colored esophagus lining), the diagnosis can only be confirmed with small samples of tissue (biopsies) obtained through the endoscope. Biopsies can be taken without producing pain. Barium swallow x-rays cannot accurately detect Barrett's esophagus.



Endoscopic view of Barrett's Esophagus



Biopsy of Barrett's Esophagus in search of dysplasia/cancer

How is Barrett's esophagus treated?

Patients diagnosed with Barrett's are treated for GERD symptoms and advised to return at scheduled intervals ranging from every 3 months to every 2-3 years for a repeat endoscopy and tissue inspection/biopsy. This "watch and wait" approach is called surveillance. The object of surveillance is to monitor for progression of the disease. Because Barrett's esophagus is a disease without symptoms, a patient won't know if the disease has progressed to a more serious stage or become cancerous until he/she undergoes an upper endoscopy with biopsies.

Once high-grade dysplasia (markedly abnormal cells found in Barrett's esophagus or biopsy) is detected by EGD with biopsies, surveillance is not the only way to manage the disease. Some patients with high grade dysplasia may have an endoscopic procedure to ablate/remove the diseased tissue, but the majority of those diagnosed with high-grade dysplasia are recommended to undergo an esophagectomy (removal of the esophagus) to avoid progression to esophageal cancer.

The treatment of Barrett's esophagus is similar to the treatment of gastroesophageal reflux disease, namely, lifestyle changes in conjunction with the use of medications that will decrease acid production by the stomach. Simple lifestyle measures should be employed by all patients with reflux. The most effective of these is to avoid late meals. The patient should also avoid any foods that cause an increase in symptoms (i.e. coffee, caffeine, chocolate, spicy foods, alcohol, fats, peppermint, etc). Additional lifestyle changes to treat Barrett's Esophagus include avoiding triggering foods, eating three balanced meals a day, reducing the size of food portions (less food means less reflux), not eating 2 to 3 hours before going to bed, shedding extra weight to decrease pressure on your stomach (which may reduce heartburn), stop smoke, avoiding tight clothing and tight belts, and elevating your bed so the head is four to eight inches higher than the foot. Do not use extra pillows to elevate your head; this can increase pressure on your abdomen and increase reflux.

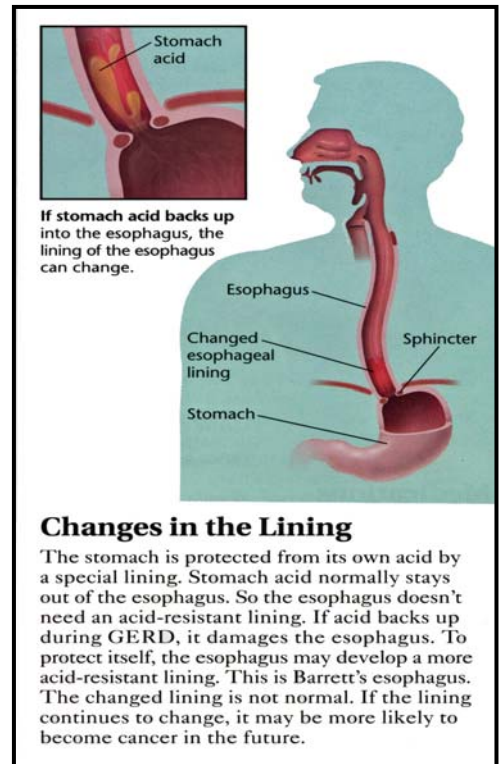
Patients with Barrett's esophagus typically need very potent medications, known as proton pump inhibitors (PPI) to reduce stomach acid secretions. Some common PPI's are omeprazole (Prilosec), lansoprazole (Prevacid), esomeprazole (Nexium), pantoprazole (Protonix), and rabeprazole (Aciphex). These medications are typically given before breakfast once a day or, on occasion, before breakfast and dinner. Less potent medications known as H2 receptor antagonists (Tagamet, Zantac, Axid, and Pepcid) are generally not as effective in decreasing the acid damage to the esophagus that causes Barrett's esophagus but can be helpful. Medications help treat symptoms and reduce further esophageal injury. Medications are not known to reverse Barrett's Esophagus changes once they have occurred, however, studies are being done on this subject.

What is the role of surgery for Barrett's esophagus?

Antireflux surgery is sometimes advocated in certain cases of Barrett's esophagus. Surgical therapy is indicated for symptomatic relief in patients with documented reflux disease and poor response to medical therapy. It may be recommended to young patients as an alternative to long-term acid suppressive therapy. Whether antireflux surgery slows and reverses Barrett's esophagus is currently being studied.

Are there any new treatments for Barrett's esophagus?

There is much work underway to develop new and more effective treatments for Barrett's esophagus. One such treatment is known as ablation therapy. The principle of this treatment is to damage the lining of the esophagus with either heat or laser light and have normal cells develop in a setting of decreased acid production. While this type of therapy holds great promise for the future, it is experimental and unproven at this time. Other new treatments are also under development.



What is the relationship between Barrett's esophagus and cancer of the esophagus?

Barrett's esophagus is a premalignant lesion that may lead to the development of cancer of the esophagus in some patients. The overall risk of developing cancer is approximately 0.5% each year. As such, the majority of patients with Barrett's esophagus will **never** develop cancer. However, since esophageal cancer is difficult to diagnose in its earliest stages, doctors and patients should be vigilant in watching for the development of cancer by doing frequent EGDs.

Cancer in Barrett's esophagus develops through a sequence of changes in the esophagus known as dysplasia. Dysplasia can only be detected by endoscopic biopsies (EGD with biopsy). As such, all patients with Barrett's esophagus should be placed in a surveillance program in an effort to detect cancer at an early and potentially curable stage.

Guidelines for Endoscopic Surveillance of Barrett's Esophagus

Dysplasia Grade	Interval Until Next EGD:
None	Every 2-3 years after two negative EGD's
Low-grade	Every six months for 1 year, then every year
High-grade	Expert confirmation followed by either resection or continued surveillance every 3 months

