

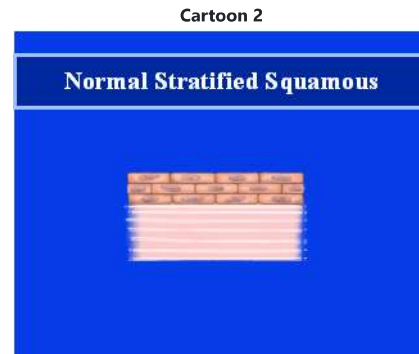
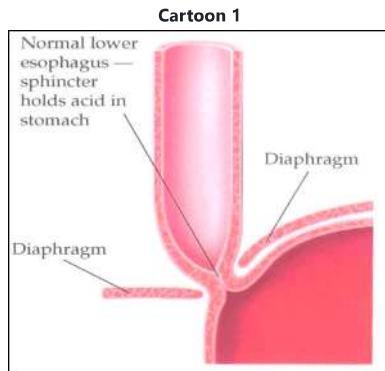


Barrett's Esophagus

Overview

- [What is Barrett's Esophagus?](#)

In order to understand Barrett's esophagus, it is useful to understand the normal appearance of the esophagus. In the normal esophagus, the tissue lining appears pale pink and smooth. These flat square cells, called "squamous" (Latin for square) cells, make up the normal lining of the esophagus. See **Cartoons 1 and 2**.



In contrast, Barrett's esophagus is a salmon-colored lining in the esophagus (see **Cartoon 3**), made up of cells that are similar to cells found in the small intestine and are called "specialized intestinal metaplasia."

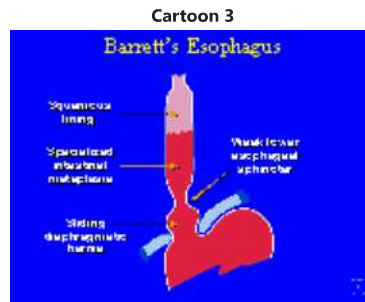
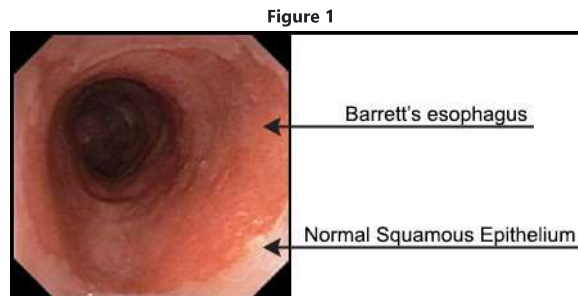


Figure 1 shows what Barrett's esophagus looks like at endoscopy (a small flexible scope with a camera in its tip).



Barrett's Esophagus. © 2004 Mayo Foundation
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The reason Barrett's esophagus is important is because people who have it have a small increased risk of developing esophageal cancer. Barrett's esophagus and heartburn symptoms are associated with a specific type of esophageal cancer called "esophageal adenocarcinoma."

- [How Common is Barrett's Esophagus?](#)

Barrett's esophagus is more commonly seen in people who have frequent, persistent heartburn or gastroesophageal reflux disease (GERD). GERD symptoms include heartburn (burning under your breast bone) that may wake you up at night, occur after meals or in between, and may temporarily improve with antacids. Acid regurgitation, or the experience of sour or bitter-tasting fluid coming back up into your mouth, is also a GERD symptom. Some people do not have any of these symptoms and are still at risk of developing Barrett's esophagus.

Risk Factors

- [What are the Risk Factors for Barrett's Esophagus?](#)

Age, male sex, Caucasian ethnicity and heartburn symptoms of longer than 10 years' duration are risk factors for Barrett's esophagus. Heartburn, tobacco smoking, and obesity are risk factors for developing esophageal carcinoma. Tobacco use (especially chewing tobacco) and alcohol consumption are much stronger risk factors for a different type of cancer: squamous cell cancer of the esophagus. Tobacco slightly increases a person's chance of developing esophageal adenocarcinoma.

Most people with Barrett's esophagus are in their 60's at the time of diagnosis. It is thought that most people who are diagnosed with Barrett's have had it for 10 to 20 years before diagnosis.

Men are 3 to 4 times more likely to have Barrett's esophagus compared to women. Caucasians are about 10 times more likely to have Barrett's esophagus than persons of African American ethnic background.

Although people who experience weekly heartburn or acid regurgitation are 64 times more likely to get esophageal adenocarcinoma than people who have never experienced these symptoms, 40% of people with esophageal adenocarcinoma deny ever experiencing heartburn. Why these people developed esophageal adenocarcinoma remains a mystery.

- [What is the Risk of Getting Esophageal Cancer?](#)

We now know that patients with Barrett's esophagus have a low risk of esophageal cancer. A person with Barrett's esophagus has less than a 1 in 200 chance per year of developing esophageal adenocarcinoma. The overall risk of cancer may increase as the years go by, but more than 90% of people with Barrett's esophagus WILL NOT develop cancer. Therefore, Barrett's esophagus is a condition that you need to know about and take care of if you have it. However, the vast majority of patients with Barrett's will never get cancer.

- [How do we tell who is at risk? See "Management of Barrett's esophagus," below.](#)

- [When Should You See a Doctor about Barrett's Esophagus?](#)

You should ask a doctor about Barrett's esophagus if you have the risk factors listed earlier (male sex, age 50 or over, Caucasian ethnic group, GERD symptoms of longer than 10 years' duration). If you have alarm symptoms such as trouble swallowing, losing weight without trying, blood in your stool, vomiting, persistent symptoms despite medical therapy, or new chest pain, you should discuss your symptoms with your doctor and have an endoscopic examination.

Screening/Diagnosis

- [What Type of Tests are Needed to Evaluate Barrett's Esophagus?](#)

Endoscopy is the test of choice for Barrett's esophagus. During endoscopy, a thin tube with a light and camera on the end are run through your mouth, down your throat and into your stomach. Biopsies, meaning small pieces of tissue can be collected to look at under the microscope. In Barrett's, tissue is the issue. Tissue, showing a certain abnormal cell type, is necessary to make the diagnosis of Barrett's esophagus, and is one of the keys to management of Barrett's.

An upper GI barium study can be helpful in finding strictures (areas of narrowing), usually causing trouble swallowing. Barium studies are not useful for diagnosing Barrett's esophagus, because it is a diagnosis that requires biopsies of the tissues to make.

Treatment Options

- [What are the Treatment Options for Barrett's Esophagus?](#)

Generally, doctors treat the symptoms of GERD, not Barrett's esophagus specifically. Barrett's is an acquired disorder, meaning it develops over time and is not present at birth. It is usually diagnosed around age 60, although we estimate that half of people with Barrett's esophagus have it by age 40.

Treatment for GERD symptoms are listed in the GERD section of this web page and elsewhere on the ACG Web Book for patients. Generally, this will include antacids, histamine receptor antagonists and proton pump inhibitors. Surgery is also an option. The large majority of patients with Barrett's esophagus will be treated with a proton pump inhibitor.

The proton pump inhibitors (PPIs) include: esomeprazole (Nexium), lansoprazole (Prevacid), omeprazole (Prilosec), pantoprazole (Protonix), rabeprazole (Aciphex), omeprazole powder (Zegerid), and dexlansoprazole (Dexilant). With regard to the optimal way to take a proton pump inhibitor, for most brands it is suggested that you take your medication half an hour before a meal. Most other pills can be taken along with PPI's, except for antacids, Carafate[®], and Questran[®]. Antacids, Carafate[®] and Questran[®] bind almost everything they come in contact with, so if you are on these medicines, you should not be taking them at the same time as other medicines in the first place.

PPIs work by turning off the pumps in the lining of your stomach that pump acid into the stomach. Eating food 20 to 60 minutes after taking your pill on an empty stomach activates millions of these acid pumps which are then turned off by the medication. This is the key for the best dosing of a PPI.

Management

- [Management of Barrett's esophagus](#)

During endoscopy, your doctor will get multiple biopsies every 1 to 2 cm (one half to one inch) along the length of your Barrett's esophagus segment. How the biopsies look on a microscope slide influences your management.

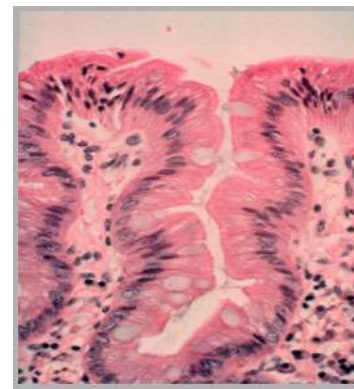
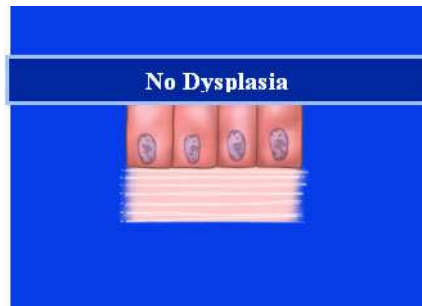
The key to the management of Barrett's esophagus is the level of dysplasia that the biopsies show. "Dysplasia" is how much precancerous changes the cells have. "No Dysplasia" means that the Barrett's cells show no precancerous changes. Low-grade dysplasia means that the cells show some of the early characteristics of cancer. High-grade dysplasia means that the cells show more advanced changes of cancer. The worse the dysplasia, the higher the risk that the Barrett's will go on to cancer.

All of our cells are programmed to die. We are constantly making new cells while old cells slough off. For example, dandruff is old dead scalp cells that have dried up and flaked off. Just like your skin on the outside of your body, the lining of the esophagus is skin on the inside of your body. Cells keep their DNA in their nucleus. Cancer is DNA that has lost control of how fast the cells divide, or how quickly they die. In cancer, cells grow and grow without dying.

When cells are changing from normal to cancer, they go through the steps of dysplasia outlined above.

No Dysplasia

If a diagnosis of Barrett's esophagus is made, ideally there should be NO dysplasia. See **Cartoon 4** and **Figure 2**.



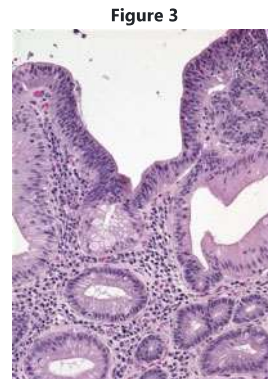
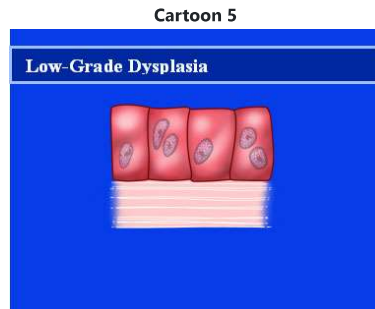
No Dysplasia. © 2004 Mayo Foundation for Medical Education and Research.

In biopsies with no dysplasia, the nuclei are small, organized and located at the base (bottom) of the Barrett's cell.

Most people with Barrett's esophagus and no dysplasia will need to undergo future endoscopies to assure there is no progression of the condition. When the next endoscopy occurs is usually based on recommendations by groups of experts whose opinion is endorsed The American College of Gastroenterology. Follow up endoscopy for Barrett's without dysplasia is usually recommended at 3-5 years, but your doctor will help decide what is most appropriate for you.

Low Grade Dysplasia

If biopsies are found to have low-grade dysplasia (**Cartoon 5 and Figure 3**), where the nuclei are still small but somewhat disorganized, several things should happen: First, the doctor should have a second pathologist also look at your biopsies, because low-grade dysplasia can be a hard diagnosis for a pathologist to make correctly, and sometimes there is disagreement among pathologists that might require yet another opinion to resolve.

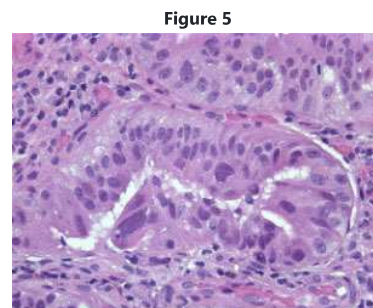
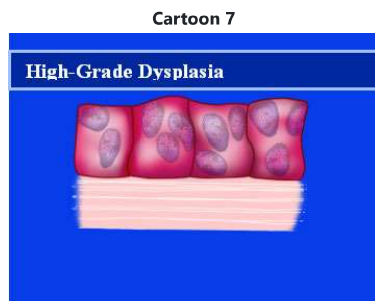


Low Grade Dysplasia. © 2004 Mayo Foundation for Medical Education and Research.

If the diagnosis of low-grade dysplasia is confirmed, it is recommended that otherwise healthy people consider getting endoscopic treatment to get rid of their Barrett's esophagus. The most common way of doing this is a process called radiofrequency ablation. In radiofrequency ablation treatments, heat is applied to the precancerous tissue to kill those cells so that normal healthy cells can grow there instead. Studies demonstrate that these treatments can lower the patient's chance of ever getting cancer. Another acceptable option if low-grade dysplasia is found is to continue to perform endoscopies to monitor the condition, without doing any ablation treatments. If this option is selected, the repeat endoscopy is usually performed 1 year after the first one.

High Grade Dysplasia

High-grade dysplasia (**Cartoon 7, Figure 5**) is thought to be the stage that occurs before esophageal cancer. However high-grade dysplasia can regress to low-grade dysplasia. If diagnosed with high-grade dysplasia the biopsies should be examined again by a pathologist who specializes in diseases of the esophagus.



High Grade Dysplasia. © 2004 Mayo Foundation for Medical Education and Research.

If a diagnosis of high-grade dysplasia is confirmed, it is recommended that the patient undergo endoscopic treatments to get rid of the Barrett's esophagus. As above, the most commonly used treatment in high-grade dysplasia is radiofrequency ablation. Surgical removal of the esophagus can also be performed for high-grade dysplasia; however, this is done more rarely now that effective endoscopic treatments are available.

Barrett's esophagus is best managed by doctors with an interest in this disease, including gastroenterologists, esophagus surgeons and gastroenterology pathologists.

Author(s) and Publication Date(s)

Ijeoma A. Azodo, MD, University of Chicago, Chicago, IL and Yvonne Romero, MD, FACP, Mayo Clinic, Rochester, MN – Published January 2006.

Nicholas J. Shaheen, MD, MPH, FACP, University of North Carolina, Chapel Hill, NC – Updated June 2016.

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Patient Links

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- [National Digestive Diseases Information Clearinghouse](#)
- [National Institute of Diabetes, Digestive and Kidney Diseases](#)