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Gastroesophageal Reflux Disease

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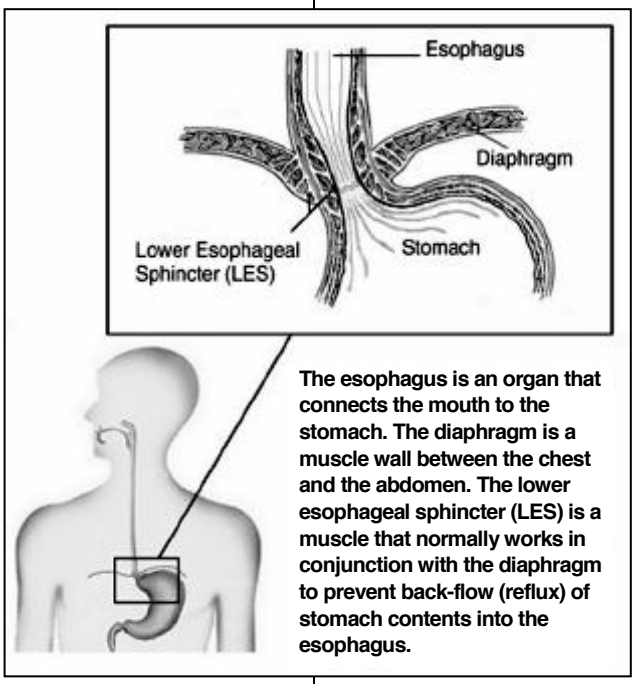
Just about everyone has experienced heartburn, that uncomfortable, burning feeling in the chest after eating a large, spicy, or high fat meal. In fact, about 40 percent of Americans have heartburn once a month and 15–20 percent at least once a week. An occasional bout of heartburn is nothing to worry about; however, if it happens more than twice a week, a more serious condition called gastroesophageal reflux disease, or GERD, may be the problem.

Gastroesophageal refers to the stomach and esophagus. Reflux refers to the escape of stomach contents back into the esophagus. Normally, a ring of muscle at the bottom of the esophagus, called the lower esophageal sphincter (LES), acts like a valve to seal off the stomach so that food can go in but can't come back out. This is important because acidic gastric contents in the stomach can damage the lining of the esophagus. For the most part the LES does its job, but on occasion, the muscle relaxes and the stomach acid and other contents go back into the esophagus. (This is what causes the burning feeling of heartburn.) Reflux occurs both in people who do and who do not have GERD; the difference is that in people with GERD, the reflux may damage the esophagus.



The esophagus is an organ that connects the mouth to the stomach. The diaphragm is a muscle wall between the chest and the abdomen. The lower esophageal sphincter (LES) is a muscle that normally works in conjunction with the diaphragm to prevent back-flow (reflux) of stomach contents into the esophagus.

Why reflux does not injure everyone is puzzling. One possible reason is that the digestive system has protective mechanisms against reflux. For example, whenever anything enters the esophagus the muscles automatically push it down towards the stomach in a motion called esophageal peristalsis. Consequently, when reflux gets into the esophagus the muscles immediately push it back toward the stomach. Additional protection comes from saliva, which contains substances that neutralize stomach acid making it less harmful. Gravity may even play a role—what goes up eventually comes down, including reflux. Research suggests that in people who have GERD one or more of these protective mechanisms may not work.

Reflux causes a number of symptoms. Heartburn is the most common. When associated with GERD, heartburn usually is made worse by eating, lying down, bending over, or exercising. Other GERD symptoms include regurgitation (when stomach contents flow back up into the mouth leaving a bitter taste), difficulty swallowing, and chest pain. Signs that GERD has damaged other nearby organs, such as the bronchial tubes leading into the lungs (these tubes branch off the esophagus) are wheezing, coughing, and shortness of breath. If reflux reaches into the throat, it can cause hoarseness, sore throat, choking, and postnasal drip. Signs of stomach involvement include bloating, nausea, vomiting, and a feeling of fullness after eating small amounts of food.

GERD has been linked to asthma, and may possibly cause Barrett's esophagus in some people, a serious (potentially precancerous) condition in which the cells on the lining of the esophagus transform into different types of cells. GERD's relationship to hiatal hernia is uncertain—many, but not all, people with GERD have hiatal hernia and vice versa. Stricture, a thickening of the esophageal walls that can slow or completely block the passage of food, results from inflammation and scarring caused by reflux. Clearly, GERD can be serious—prompt diagnosis and treatment are important.

Physicians can often diagnose GERD solely on the basis of symptoms. However, medical tests may be necessary to rule out other diseases, discover the extent of damage to the esophagus, or identify the presence of Barrett's esophagus. The physician may do any of the following tests:

- *Endoscopy*. This test allows the physician to look at the lining of the esophagus to check for inflammation, ulcers, stricture, or signs of Barrett's esophagus. A thin, lighted tube is passed through your mouth into the esophagus and stomach. The tube transmits an image of the esophagus and stomach to a

monitor that the physician watches. A sedative will keep you comfortable during the test, which takes only 10–15 minutes.

- *Esophageal pH Monitoring*. This test measures the amount of acid in the esophagus. A thin tube (the size of a paperclip) is passed through your nose and into the esophagus. Electrodes on the tube measure and record acid in the esophagus for the next 24 hours as you go about your normal routine. During this time, you will need to write down your symptoms. When the test is over, the physician will compare your notes about symptoms with the acid measurements to see whether reflux is causing your symptoms, how often it occurs, and how much acid is refluxed.
- *Esophageal Manometry*. This test is similar to pH monitoring, except it measures pressure in the esophagus. A thin tube is passed through your nose or mouth and into the esophagus. This tube measures pressure throughout the esophagus and in the LES. It also monitors the activity of the esophagus, such as muscle contractions when you swallow. Manometry can tell the physician whether your esophagus and LES are working properly.

Treatment

Treatment for GERD has three goals: reduce reflux, relieve symptoms, and allow the esophagus to heal. The first step in treatment usually involves some lifestyle changes. Smokers are encouraged to quit because nicotine weakens the LES and slows the rate at which the stomach empties (the longer food stays in the stomach, the greater the risk of reflux). Fatty foods, onion, garlic, chocolate, peppermint, caffeine, and alcohol may weaken the LES and should be avoided if they seem to cause symptoms. Being overweight contributes to reflux by increasing pressure in the stomach area, so weight loss is recommended for some people. To prevent stomach bloating, which weakens the LES by putting too much pressure on it, try eating smaller meals, eating no later than 2 or 3 hours before bedtime, and not lying down immediately after eating. Some people are able to control nighttime reflux by simply raising the head of the bed by about 6 inches, putting themselves in a more upright position so that gravity can help keep stomach contents where they belong.

Over-the-counter (OTC) preparations such as antacids, alginic acid, or over-the-counter H2-blockers can help relieve mild intermittent symptoms. Antacids neutralize the stomach acid, making it less harmful to the esophagus. Alginic acid creates foam that keeps refluxed acid from touching the esophagus walls. H2-blockers work by reducing the amount of acid the stomach produces. Nonprescription H2-blockers are famotidine (Pepcid AC), cimetidine (Tagamet HB), ranitidine (Zantac 75), and nizatidine (Axid AR). Lifestyle changes and over-the-counter medicines work for most people with mild GERD.

People with more severe GERD may need prescription strength H2-blockers or proton pump inhibitors. The prescription H2-blockers contain a higher dosage than the OTC versions. Proton pump inhibitors are similar to H2-blockers because they stop acid secretion in the stomach, but they're more powerful. Proton pump inhibitors are especially useful in people with severe GERD because acid levels drop low enough for damage to the esophagus to heal. Omeprazole (Prilosec), lansoprazole (Prevacid), rabeprazole (Aciphex), esomeprazole magnesium (Nexium), and pantoprazole (Protonix) are proton pump inhibitors currently approved by the FDA.

If you can answer "yes" to two or more of the following questions, you may have GERD.

1. *Do you frequently have one or more of the following:*
   - *An uncomfortable feeling behind the breastbone that seems to be moving upward from the stomach?*
   - *A burning sensation in the back of your throat?*
   - *A bitter acid taste in your mouth?*
2. *Do you often experience these problems after a meal?*
3. *Do you experience heartburn or acid indigestion two or more times per week?*
4. *Do you find that antacids only provide temporary relief from your symptoms?*
5. *Are you taking prescription medication to treat heartburn, but still having symptoms?*

If you think you may have GERD, see your doctor for an accurate diagnosis.

If medical treatments don't work, or GERD is causing progressively worse strictures or other complications like bleeding or Barrett's esophagus, you may need surgery to stop the reflux. The procedure is called fundoplication and it involves wrapping part of the stomach around the end of the esophagus to make a tighter barrier between the two. It can be done laproscopically, by an experienced surgeon, with only a 2-day hospital stay.

If a stricture makes it difficult for a person to swallow or for food to pass through the esophagus, the doctor will need to widen the passageway in a procedure called dilation. Dilation involves inserting an instrument through the mouth and down the throat and then using it to compress the stricture and make the passageway wider. People usually need dilation more than once—how often depends on how severe the stricture is.

Summary

Most people with GERD have mild disease and can control it through lifestyle changes and medication. For those with more severe disease, there are treatment options that work. Be sure to talk to your doctor about various options so you can find the best treatment for your particular situation.