

## Gastroesophageal Reflux Disease (Hiatal Hernia and Heartburn)

Many people suffer from dyspepsia (heartburn or acid indigestion). The most common causes of dyspepsia are gastroesophageal reflux disease (GERD) and peptic ulcer disease (PUD). GERD affects about 40% of the U.S. population. Other causes of dyspepsia include gall bladder disease, intestinal infections or diseases, medications and systemic disorders. In most cases, dyspepsia can be relieved through diet and lifestyle changes; however, some people may require medication or surgery.

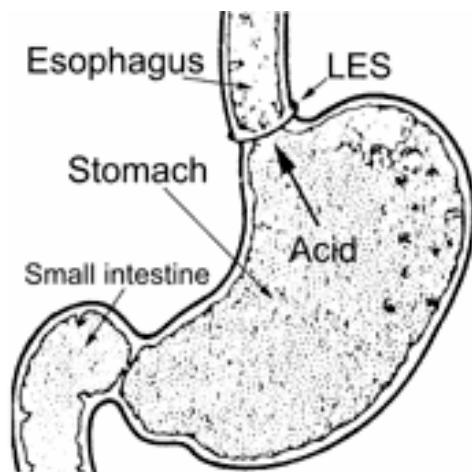


Figure 1

### What is gastroesophageal reflux

Gastroesophageal refers to the stomach and esophagus. Reflux means to flow back. Therefore, gastroesophageal reflux is the flow of the stomach's contents back up into the esophagus.

Gastroesophageal reflux disease (GERD) is a digestive disorder that affects the esophagus and lower esophageal sphincter (LES), a ring of muscle which functions as a valve between the esophagus and stomach. (Figure 1 shows the location of the LES between the esophagus and the stomach.

Normally, swallowing initiates waves of muscular contractions of the esophagus (peristalsis) and relaxation of the LES. In GERD, the LES relaxes independently of swallowing and this relaxation permits gastric contents to reflux back up the esophagus.

There are three categories of GERD: non-erosive esophagitis (NERD), erosive esophagitis, and Barrett esophagus.

### What is the role of hiatal hernia?

A hiatal hernia may contribute to GERD. A hiatal hernia occurs when the upper part of the stomach is above the diaphragm, the muscle wall that separates the stomach from the chest. The diaphragm helps the LES keep acid from coming up into the esophagus. When a hiatal hernia is present, it is easier for the acid to come up. In this way, a hiatal hernia can cause reflux. A hiatal hernia can happen in people of any age; many otherwise healthy people over 50 have a small one.

Hiatal hernias usually do not require treatment. However, treatment may be necessary if the hernia is in danger of becoming strangulated (twisted in a way that cuts off blood supply, i.e., paraesophageal hernia) or is complicated by severe GERD or esophagitis (inflammation of the esophagus). The doctor may perform surgery to reduce the size of the hernia or to prevent strangulation.

### What other factors contribute to GERD?

Dietary and life-style choices may contribute to GERD. Certain foods and medications may trigger relaxation of the LES causing reflux and heartburn. Studies show that cigarette smoking relaxes the LES. Increased intra-abdominal pressure, caused by obesity, pregnancy, lifting, and recumbent position after eating, can also cause GERD.

### What are symptoms of GERD?

Heartburn, also called acid indigestion, is a common symptom of GERD and usually feels like a burning pain behind the breastbone. Other symptoms include "gnawing" epigastric (upper abdominal) pain, hoarseness, difficulty swallowing, and an acid or bitter taste in the mouth.

Heartburn pain can be mistaken for the pain associated with heart disease or a heart attack, but there are differences. Exercise may aggravate pain resulting from heart disease, and rest may relieve the pain. Heartburn pain is less likely to be associated with physical activity. If you are experiencing severe, crushing chest pain, or pain in the left arm or jaw, seek care immediately.

## **What is the treatment for GERD?**

Doctors recommend life-style and dietary changes for most people with GERD. Treatment aims at decreasing the amount of reflux or reducing damage to the lining of the esophagus.

Avoiding foods and beverages that relax the LES is recommended. These include caffeine, peppermint, spearmint, alcohol, citrus foods, tomatoes or tomato-based foods, chocolate, spicy or fried foods, onion, and carbonated beverages.

Eating smaller, more frequent meals may also help control symptoms. Eating meals at least two to three hours before bedtime may lessen reflux by allowing the stomach to empty partially before lying down.

Certain medications, including estrogen, progesterone, tobacco, Valium, and Beta-adrenergic blockers (used to treat migraine, heart disease, and high blood pressure) can trigger or worsen GERD.

In addition, being overweight often worsens symptoms. Many overweight people find relief when they lose weight. Cigarette smoking relaxes the LES. Therefore, smoking cessation is critical to reduce GERD symptoms. Elevating the head of the bed on 6-inch blocks uses gravity to minimize reflux of stomach contents into the esophagus. (just using extra pillows will not have the same effect)

Antacids taken regularly can neutralize acid in the esophagus and stomach and stop heartburn. Many people find that nonprescription antacids provide temporary or partial relief. An antacid combined with a foaming agent such as alginic acid helps some people. These compounds form a foam barrier on top of the stomach that prevents acid reflux.

Long-term use of antacids, however, can result in side effects, including diarrhea, altered calcium metabolism, and accumulation magnesium in the body. Too much magnesium can be serious for patients with kidney disease. If you need antacids for more than three weeks, consult a healthcare provider.

For chronic reflux and dyspepsia, the healthcare provider may prescribe medication. Histamine receptor (H2) blockers inhibit acid secretion in the stomach.

Proton pump (or acid pump) inhibitors inhibit an enzyme (a protein in the acid-producing cells of the stomach) necessary for acid secretion.

Motility drugs increase the strength of the LES and speed emptying of stomach contents.

## **What if symptoms persist?**

People with severe, chronic esophageal reflux or with symptoms not relieved by the treatment described above may need further diagnostic evaluation.

An upper gastrointestinal (GI) series may be performed during the early phase of testing. This test is a special X-ray that shows the esophagus, stomach, and duodenum (the upper part of the small intestine). While an upper GI series provides limited information about possible reflux, it is useful to rule out other diagnoses, such as peptic ulcer disease.

Endoscopy (esophagogastroduodenoscopy or EGD) is an important procedure for individuals with inadequate response to medications, need for continuous therapy, chronic symptoms with risk of Barrett esophagus (see below), or symptoms that suggest complicated GERD. By placing a small-lighted tube with a tiny video camera on the end (endoscope) into the esophagus, the doctor may see inflammation or irritation of the tissue lining the esophagus (esophagitis). If the findings of the endoscopy are abnormal or questionable, biopsy (removing a small sample of tissue) from the lining of the esophagus may be helpful.

The pH probe monitors the acidity level of the esophagus and symptoms during meals, activity, and sleep over a 24 hour period. Esophageal manometry is used to evaluate LES pressure and detect esophageal motility disorders.

## **Does GERD require surgery?**

A small number of people with GERD may need surgery because of severe reflux and poor response to lifestyle changes and medication.

Fundoplication, usually a specific variation called Nissen Fundoplication, is the standard surgical treatment for GERD. The upper part of the stomach is wrapped around the LES to strengthen the sphincter and prevent acid reflux and to repair hiatal hernia.

In 2000, the U.S. Food and Drug Administration (FDA) approved two endoscopic devices to treat chronic heartburn. The Bard EndoCinch system puts stitches in the LES to create little pleats that help strengthen the muscle. The Stretta system uses electrodes to create tiny cuts on the LES. When the cuts heal, the scar tissue helps toughen the muscle.

### **What are the complications of long-term ?**

Sometimes GERD results in serious complications. Complications of GERD occur more frequently in males. Esophagitis can occur as a result of too much stomach acid in the esophagus. Esophagitis may cause esophageal erosions, or a narrowing stricture of the esophagus may occur from chronic scarring. Some people develop a condition known as Barrett's esophagus (pre-cancerous changes), or esophageal cancer.

### **Conclusion**

Although GERD can limit daily activities and productivity, it is rarely life threatening. With an understanding of the causes and proper treatment most people will find relief.

### **Additional readings**

Cramer T. A burning question: When do you need an antacid? FDA Consumer 1992; 26(1): 19-22. This article for consumers provides general information about antacids.

Larson DE, Editor-in-chief. Mayo Clinic Family Health Book. New York: William Morrow and Company, Inc., 1990. This general medical guide includes sections about esophageal reflux and hiatal hernia.

Richter JE. Why does surgery work for GERD? Practical Gastroenterology 1993; XVII (10): 10-18. This article for physicians describes antireflux surgery.

Sutherland JE. Gastroesophageal reflux disease: When antacids aren't enough. Postgraduate Medicine 1991; 89(7): 45-53. This article for primary care physicians provides guidelines to determine if a patient has reflux disease and offers treatment methods.

### **References**

The Journal for Nurse Practitioners, March 2006. Blair, K.A., and Beltz, J. Dyspepsia, Is it Gastroesophageal Reflux Disease or Peptic Ulcer Disease? Pp 157-163.

National Digestive Diseases Information Clearinghouse (NNDIC) Web site, search for GERD, gastroesophageal, peptic ulcer

If you are a registered University of Illinois student and you have questions or concerns, or need to make an appointment, please call: **Dial-A-Nurse at 333-2700**

If you are concerned about any difference in your treatment plan and the information in this handout, you are advised to contact your health care provider.

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