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Heartburn

Definition

People experience heartburn in a variety of forms, usually as a burning chest pain that begins behind the breastbone and radiates upward to the neck. Often there is a sensation of food coming back into the mouth, accompanied by an acidic or bitter taste. Also called acid indigestion, heartburn usually occurs after meals.

The burning chest pain can last as long as two hours and often is worse when lying down or bending over. Most people obtain relief by standing upright or by taking an antacid that clears acid out of the esophagus.

Unlike the pain associated with heart disease, heartburn is usually not brought on only by exercise or relieved by rest.

Heartburn is actually the most common symptom of a condition called gastroesophageal reflux, or acid reflux, which occurs when the muscle between the esophagus and the stomach's contents down well. Here is how that happens.

At the point where the esophagus, a tube-like structure that connects the mouth to the stomach, the esophagus is kept closed by a muscle called the *lower esophageal sphincter* (LES). This muscle is important because the pressure in the stomach is normally higher than that in the esophagus. The LES opens after swallowing to allow passage of food into the stomach, but then it quickly closes to prevent the return (reflux) of food and stomach juices into the esophagus.

When the LES muscle either relaxes inappropriately or is very weak, the highly acidic contents of the stomach can back up, or reflux, into the esophagus. This is called *gastroesophageal reflux*. When the acid contents from the stomach regularly back up into the esophagus, a chronic condition called gastroesophageal reflux disease or GERD, is diagnosed.

Certain foods and beverages, including chocolate, peppermint, coffee, alcohol, and fried or fatty foods, are thought to cause the LES to relax, allowing backup of stomach contents. In addition, studies have shown that cigarette smoking dramatically decreases the LES pressure.

The occurrence and severity of heartburn depend on LES dysfunction but also are affected by the type and amount of fluid brought up from the stomach, the clearing action of the esophagus, the neutralizing effect of saliva, and other factors.

How Common is Heartburn?

A 1988 survey revealed that about 61 million American adults experience heartburn at least once a month, and about 25 million adults suffer daily from heartburn. Heartburn is a common complaint among pregnant women, of whom 25 percent experience daily heartburn, and more than 50 percent have occasional dis-

stress. Recent studies indicate that similar problems in infancy are more common than was previously recognized and may produce recurrent vomiting, failure to thrive, or coughing and other lung symptoms.

Although heartburn is common in our society, it is rarely life threatening. However, heartburn can limit daily activities and productivity. With proper understanding of the causes of heartburn and a rational approach to treatment, most people will find relief.

Is Heartburn Caused by Hiatal Hernia?

While heartburn is not caused by hiatal hernia, hiatal hernias do predispose individuals to heartburn. A hiatal hernia is the protrusion of the stomach through a teardrop-shaped hole in the diaphragm where the esophagus and stomach join.

The majority of people over 60 years of age have hiatal hernias and, in most cases, the hiatal hernia does not cause problems.

What Treatments are Available?

Any chest pain, even burning, requires medical evaluation. Sharp chest pains are rarely caused by esophageal reflux. Other causes, such as heart disease, must be considered.

If esophageal reflux is suspected, certain lifestyle and dietary changes may prevent or relieve symptoms of heartburn. Avoiding foods and beverages that cause symptoms may be of benefit. Although no studies into whether such modifications relieve heartburn have been conducted, many physicians note that patients improve after removing certain foods from their diets.

Decreasing the size of portions at mealtime can be helpful. Meals should be eaten two to three hours before lying down to lessen the chance of reflux. In addition, being overweight often contributes to symptoms, and many people find relief when their weight is below a certain point.

Cigarette smoking has been shown to decrease LES pressure dramatically. Therefore, reducing (or, preferably, stopping) smoking can be an important component of treatment.

Elevating the head of the bed on six-inch blocks or sleeping on a specially designed wedge reduces heartburn by allowing the effect of gravity to minimize reflux of stomach contents into the esophagus at night.

Antacids taken on a regular basis will neutralize the acid in the esophagus and stomach and stop heartburn. Many people have discovered that nonprescription antacids provide temporary or partial relief. Antacid combined with a foaming agent

such as alginic acid can help some patients. These compounds are believed to form a foam barrier on top of the stomach.

Long-term use of antacids, however, can result in side effects including diarrhea, altered calcium metabolism, and magnesium retention. Magnesium retention can be serious for patients with kidney disease. If prolonged use of nonprescription antacids (more than three weeks) becomes necessary, a physician should be consulted.

For chronic reflux and resulting heartburn, the doctor may prescribe medications to reduce acid production in the stomach. These medicines include the H₂ receptor antagonists, which inhibit acid secretion in the stomach.

Currently, there are four H₂ antagonists available: *cimetidine*, *famotidine*, *nizatidine* and *ranitidine*. Another type of drug, the proton pump inhibitor *omeprazole*, works by suppressing release of the enzyme necessary for acid secretion.

Another approach to therapy is to increase the strength of the lower esophageal sphincter muscle with motility drugs that act on the upper gastrointestinal (GI) tract. These drugs include *bethanechol* and *metoclopramide*.

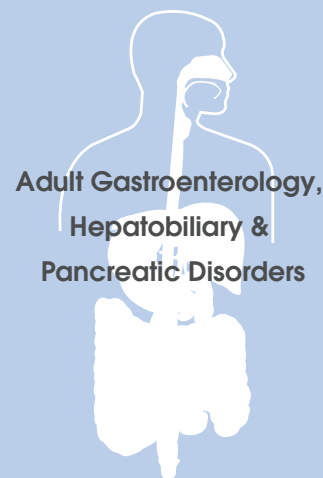
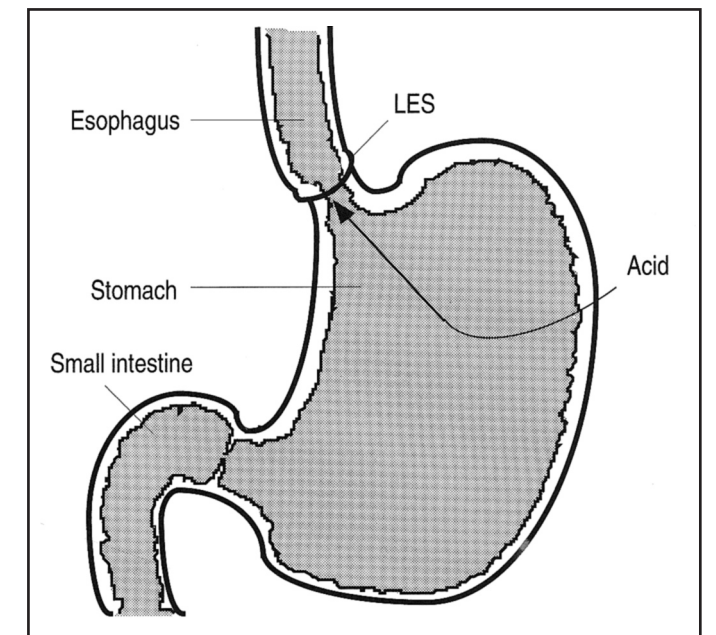
Other drugs currently under investigation to determine their effectiveness in treating esophageal reflux include the acid inhibitor lansoprazole and the motility drug cisapride.

What if Symptoms Persist?

People with severe esophageal reflux or with symptoms unresponsive to the measures described above may need more complete diagnostic evaluation.

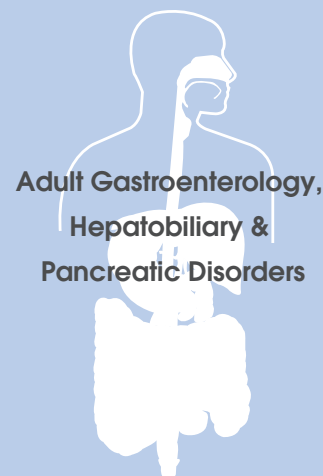
A variety of tests and procedures are currently used to evaluate further the patient with heartburn. However, the ideal test has not been developed, and no test is 100-percent accurate.

An upper GI series may be performed during the early phase



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of evaluation. An upper GI series is a special x-ray that shows the esophagus, stomach and duodenum.

While this test provides limited information about possible acid reflux, it is performed to rule out other possible diagnoses, such as peptic ulcer, or to rule out complications such as esophageal ulcer.

Endoscopy is an important procedure for heartburn patients. By looking through a small tube placed into the esophagus, the physician may see inflammation of the tissue lining the esophagus (esophagitis).

Biopsy (removal of a small sample of tissue) of the lining of the esophagus may be helpful if the findings of the endoscopy are negative or questionable.

The Bernstein test (dripping a mild acid through a tube placed in the mid-esophagus) is often performed as part of a complete evaluation. This test attempts to confirm that the symptoms are produced by contact of acid with the esophageal lining.

Esophageal manometric studies - pressure measurements of the esophagus - occasionally help to identify critically low pressure in the LES.

For those patients in whom the diagnosis is difficult to make, many doctors find it helpful to measure the acid levels inside the esophagus through pH testing. Newer techniques of long-term pH monitoring are improving diagnostic capability in this area.

Can Heartburn Require Surgery?

A small number of people with heartburn may need surgery because of severe reflux and poor response to medical treatment. Fundoplication is a surgical procedure that increases pressure in the lower esophagus. However, surgery should not be considered until all other measures have been tried.

What are the Complications of Long-Term Reflux and Heartburn?

Although heartburn itself does not cause complications, the esophageal reflux that causes heartburn can occasionally result in serious complications.

Esophagitis, an irritation or inflammation of the esophagus, can occur as a result of the constant presence of stomach acid in the esophagus.

Esophagitis may result in esophageal bleeding or ulcers. In addition, a narrowing or stricture of the esophagus may occur. Some people develop a condition known as Barrett's esophagus, severe damage to the skin-like lining of the esophagus.

Tips to Control Heartburn

- Avoid foods and beverages that affect LES pressure or irritate the esophagus lining, including fried and fatty foods, chocolate, alcohol, and coffee.
- Lose weight if overweight.
- Decrease or stop smoking.
- Elevate the head of the bed six inches.
- Avoid lying down after eating.
- Take an antacid.