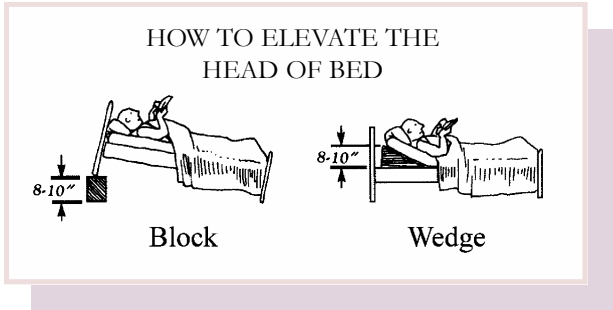


- If overweight, lose weight. Being overweight promotes reflux.
- Stop using all tobacco; nicotine weakens the LES.
- Avoid fatty foods, alcohol, coffee, chocolate, and peppermint.
- Elevate the head of the bed 8" to 10" so gravity keeps stomach juices out of the esophagus while the patient sleeps. Follow the diagram. Extra pillows, by themselves, are usually not helpful.
- Certain prescription or over-the-counter medications can weaken the LES or aggravate reflux. Review all medications you are taking with the physician.



Summary

Heartburn occurs so commonly that it is normal for everyone to experience it at some time. However, when heartburn is persistent, it needs to be evaluated, and long-term follow-up care is often required. Medical treatment is usually very effective and can prevent complications. For the few patients who are not helped by medical treatment, surgery offers a viable and usually successful alternative.

Other treatments include:

- Antacids** - These can and should be used often. Generally, antacids should be taken 30 to 60 minutes after eating and at bedtime. Liquids are preferred to tablets, with the strongest being Maalox, Mylanta, Gelusil, Riopan or Gaviscon.
- Drugs** - Medicines are now available that effectively reduce and even eliminate the secretion of stomach acid and increase the strength of the LES muscle. The most potent of these are called proton pump inhibitors (i.e., Aciphex, Prilosec, Prevacid, Protonix and Nexium). These remarkable drugs are often dramatically effective in severe cases of reflux.
- Surgery** - Surgery is rarely required in treating reflux. However, when the treatment programs outlined above are ineffective, surgery must be considered to strengthen the LES muscle. Unfortunately, recent studies demonstrate that surgery is only 33% effective five years after performed. A newer method of performing anti-reflux surgery is by laparoscopic technique. This surgery is accomplished through tiny holes in the belly button and upper abdomen. Recovery is far quicker with this technique. This operation should only be performed by surgeons thoroughly familiar with it. Surgery, however, is not always permanently successful and there can be complications.

Endoscopic Correction of Reflux - The STRETTA procedure: A new endoscopic procedure now exists which using radiofrequency energy, destroys abnormal nerve tissue in the sphincter muscle which is responsible for reflux. Long term studies suggest that this technique is 80 - 90% effective at two years. The procedure is performed during a regular endoscopy, with immediate recovery.

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HEARTBURN AND REFLUX

Endoscopic Microsurgery Associates

Heartburn and Reflux

Everyone has heartburn occasionally. This occurs when stomach acid flows backward (regurgitates) into the esophagus. The esophagus is the tube that carries food to the stomach. People usually feel heartburn as a burning sensation or pain behind the breastbone. Often, regurgitation of bitter-tasting stomach acid accompanies heartburn. An antacid or milk temporarily relieves heartburn for most people.

Why Does Heartburn Occur?

To understand heartburn, let's look at the body's anatomy. The esophagus carries food and liquid to the stomach. A sphincter (specialized muscle) is located at the end of the esophagus. It is known as the lower esophageal sphincter (LES). This muscle contracts much the same as the anus does to close the opening of the rectum to the outside of the body. The LES muscle should only open when food or liquid is passed into the stomach.

However, the LES muscle does not always work perfectly. Sometimes it is too weak to stay completely closed, and stomach juices seep back into the esophagus. This is known as reflux. There are certain factors that contribute to reflux. The most common is eating a large meal. Along with swallowed air, a large meal causes pressure in the stomach to rise, and overpowers the LES muscle. The following are other

factors that reduce the LES pressure and allow reflux:

- Nicotine (cigarettes)
- Fried or fatty foods
- Chocolate
- Coffee
- Citrus fruits and juices
- Peppermint
- Pregnancy
- Lying flat
- Hiatus hernia
- Certain prescription medicines

Is Heartburn Serious?

Heartburn and reflux are extremely common, with 10 percent of the population experiencing them daily. Twenty-five percent of pregnant women have heartburn. Even though heartburn is common, it is rarely lifethreatening. Severe cases, however, can result in injury to the lower esophagus that requires treatment.

What Is a Hiatus Hernia?

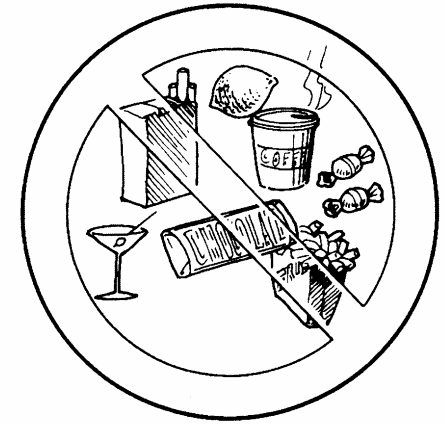
The diaphragm is a flat horizontal muscle that separates the lungs from the stomach and the rest of the digestive tract. The esophagus passes through an opening in the diaphragm. If the opening enlarges, a portion of the stomach can protrude (herniate) through it into the chest. This is called a hiatus hernia. A persistent hiatus hernia may produce significant heartburn. However, many people who experience heartburn do not have a hiatus hernia. Likewise, many people with a hiatus hernia do not experience heartburn.

Diagnosis of Reflux

There are various tests used to diagnose reflux:

- Upper GI Series - The patient drinks liquid barium and x-rays are taken of the esophagus and stomach to see how they function.
- Upper GI Endoscopy - The patient is given a mild sedative. Then, a thin, lighted, flexible tube, called an endoscope, is inserted into the esophagus to visually inspect it and the stomach.
- Esophageal Manometry - This test measures the pressures within the esophagus, especially LES pressure.
- Electrogastrogram (EGG) - This test is a measurement of the stomach's electrical activity.
- 24 Hour pH Probe - This study measures the amount of acid which backs up from your stomach into your esophagus.

THINGS TO AVOID



Complications of Reflux

In some people, acid in the lower esophagus actually causes tissue damage. Certain complications can then result:

- Chronic bleeding and anemia.
- Scar formation and narrowing of the lower esophagus. This is called a stricture. It usually is treated by dilatation, a procedure to widen the area.
- Barrett's esophagus can occur when reflux irritates the lower esophagus over a long period of time. The stomach lining then actually grows into the esophagus. In these cases, there is a slight, but definite, risk of cancer developing.
- Lung problems can develop when reflux results in stomach fluid trickling into the breathing tubes. It often occurs at night when a patient is lying down. This causes wheezing, bronchitis, and even pneumonia.

Treatment of Reflux

There are general measures the patient can take to reduce reflux:

- Eat smaller and more frequent meals.
- Do not lie down immediately after eating, and avoid eating for several hours before going to bed.
- Excessive bending, lifting, abdominal exercises, girdles, and tight belts all increase abdominal pressure and provoke reflux.

LOWER ESOPHAGEAL SPHINCTER

