

understanding  
**HEARTBURN**  
and reflux diseases

A patient's guide from your doctor and

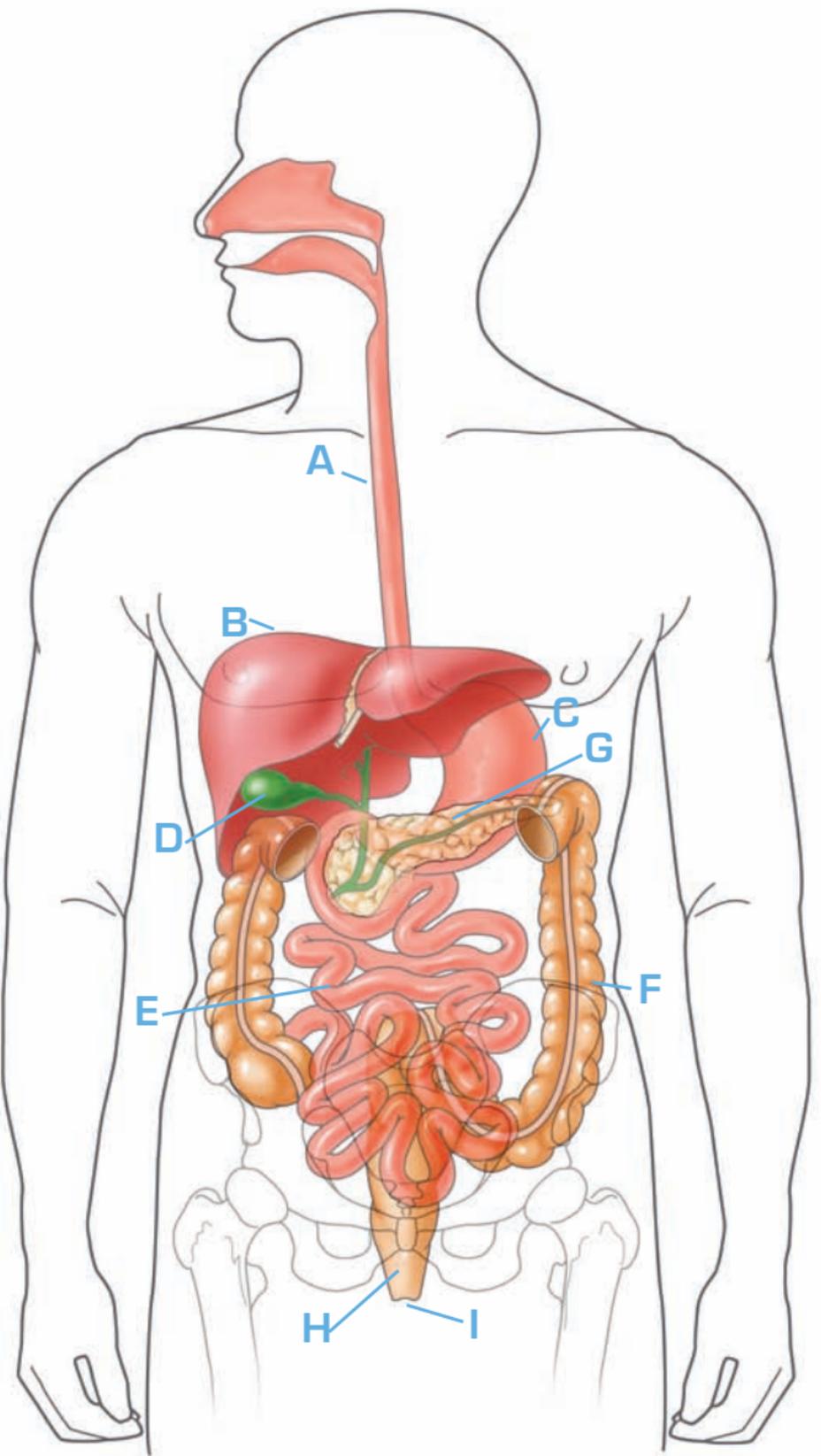


# Heartburn Basics

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- Heartburn is the most common symptom of a condition called gastroesophageal reflux disease (GERD), also known as acid reflux.
- Heartburn occurs when acid or other stomach contents back up in the esophagus.
- While heartburn is rarely life-threatening, it can greatly reduce your quality of life by affecting your daily activities, your sleep and what you eat.
- Heartburn can typically be controlled through behavior modification and over-the-counter medication, but if symptoms persist or worsen, a gastroenterologist should be consulted for additional tests and to rule out more serious conditions.

# Your Digestive System



A. Esophagus

B. Liver

C. Stomach

D. Gallbladder

E. Small Intestine

F. Large Intestine

G. Pancreas

H. Rectum

I. Anus

# Heartburn Glossary

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## Barrett's Esophagus

Change in the cells lining the esophagus.

## Diaphragm

Dome-shaped muscle that separates the chest cavity from the abdominal cavity.

## Duodenum

First part of the small intestine; joins the stomach to the middle part of the small intestine.

## Esophagitis

An irritation or inflammation of the esophagus.

## Esophagus

A tube-like organ leading from the mouth to the stomach.

## Fundoplication

A surgical procedure that reduces reflux.

## GERD

Gastroesophageal reflux disease, which is the frequent or regular back-up of stomach juices from the stomach into the esophagus.

## Heartburn

Acid indigestion; a symptom of gastroesophageal and non-acid reflux.

## Hiatal Hernia

Pushing up of the stomach into the chest cavity through a hole in a diaphragm.

## Impedance

The resistance to the flow of current between two points.

## Laryngitis

Inflammation of the vocal cords, which may cause loss of speech or hoarseness.

## Lower Esophageal Sphincter

Muscle that opens to let food pass into the stomach and closes to stop stomach juices from backing up into the esophagus.

## Reflux

Backing up of the stomach contents from the stomach into the esophagus.



To help you understand and manage your condition, the AGA Institute provides you with the following information, designed to give you some basic facts, to help you better understand your condition and to serve as a starting point for discussions with your doctor.

## GERD?

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The muscle (lower esophageal sphincter) located between the esophagus and stomach normally opens after swallowing. This allows food to pass into the stomach. This lower esophageal sphincter muscle then closes quickly to prevent the return (reflux) of food and stomach juices back into the esophagus.

When the lower esophageal sphincter muscle either relaxes inappropriately or is very weak, the acid contents of the stomach can back up, or reflux, into the esophagus. This is called **gastroesophageal reflux** and typically produces **heartburn**, a burning sensation below the sternum where your ribs come together. In addition to heartburn, symptoms may include a persistent sore throat, hoarseness, chronic cough, asthma, heart-like chest pain and a feeling of a lump in the throat. When the acid contents from the stomach regularly back up into the esophagus, chronic GERD can occur.

Several factors influence the occurrence and severity of gastroesophageal reflux and heartburn, including:

- ▶ The ability of the lower gastroesophageal sphincter muscle to open and close properly.
- ▶ The type and amount of stomach juices that are backed up into the esophagus.
- ▶ The clearing action of the esophagus.
- ▶ The neutralizing effect of saliva and other factors.

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

# Heartburn Symptoms

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The symptoms of heartburn can include:

- ▶ Burning pain behind the breastbone area.
- ▶ Burning pain or reflux symptoms that is worse when one is lying down or bending over.

Some people have reflux that damages the lining of the esophagus, but they have no symptoms to alert them that acid injury is occurring.

## How Common Is Heartburn?

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

## Is Heartburn Caused by Hiatal Hernia?

A hiatal hernia is the pushing up of the stomach into the chest cavity through a hole in the diaphragm.

While heartburn is not caused by hiatal hernia, hernias predispose individuals to heartburn. Chronic heartburn can cause a shortening of the esophagus resulting in hiatal hernia. Hiatal hernias can occur in people of any age and are often found in otherwise healthy people age 50 or older.

### Note:

**Any chest pain or difficulty swallowing requires prompt medical evaluation. Other causes should be considered.**

## Medications Available to Relieve Heartburn

There are a number of over-the-counter and prescription medications that reduce stomach acid production or help the muscles that empty your stomach. Many of these medications work in different ways they work. Talk to your gastroenterologist to determine the best medication for you.

### Antacids

Often the first drugs recommended to relieve heartburn and other mild GERD symptoms, these over-the-counter medications neutralize the acid in the stomach. Patients using antacids may experience side effects including diarrhea and constipation. Some antacids can also be a supplemental source of calcium.

### Foaming Agents

These over-the-counter drugs work by coating the stomach contents with foam to prevent reflux.

### H2 Blockers

Available in both over-the-counter and prescription strength, H2 blockers reduce stomach acid production and provide relief. The H2 blockers relieve symptoms in about half of the patients with heartburn.

### Proton Pump Inhibitors

These primarily prescription drugs are available in over-the-counter strength. They are more effective than H2 blockers at relieving symptoms and healing the lining in almost every patient with heartburn.

# Controlling Heartburn

*These recommendations may not apply to all individuals. Patients should keep a diary to help them better manage their symptoms. The listed items are common contributors but do not need to be changed unless proven to worsen symptoms in an individual. Discuss any concerns with your physician.*

- ▶ Avoid food, beverages and medicines that affect the lower esophageal sphincter muscle action or irritate the lining of the esophagus, such as:
  - ▶ Fried or fatty foods.
  - ▶ Chocolate.
  - ▶ Peppermint.
  - ▶ Alcohol.
  - ▶ Coffee (decaf too).
  - ▶ Carbonated beverages.
  - ▶ Ketchup and mustard.
  - ▶ Vinegar.
  - ▶ Tomato sauce.
  - ▶ Citrus fruits or juices.
  - ▶ Aspirin, anti-inflammatory and pain medications other than acetaminophen.
- ▶ Decrease the size of portions at mealtimes. Don't overeat!
- ▶ Eat meals two to three hours before lying down.
- ▶ Elevate the head of the bed four to six inches using blocks or telephone books.
- ▶ If you are overweight, lose weight.
- ▶ Avoid situations that can increase the pressure on the abdomen, as they will cause more reflux. Try simple things like avoiding tight clothing or control top hosiery and body shapers. Less obvious causes include sit-ups, leg-lifts or abdominal crunches.
- ▶ Stop smoking, as cigarettes decrease the ability of the lower esophageal sphincter muscle to work properly.

For occasional heartburn, over-the-counter medicines taken as directed can be helpful in reducing symptoms. If prolonged or frequent use of nonprescription medicines (more than directed on the product) becomes necessary, or if they do not completely control symptoms, a gastroenterologist should be consulted.

## Relieve Heartburn Symptoms

are available to relieve heartburn symptoms. These medications stop acid production. Some of these drugs may be effective in combination with each other due to their mechanisms of action. Determine which medicine(s) may work best for you.

### Prokinetics

These prescription drugs help strengthen the LES and speed stomach emptying. The side effects associated with the drugs, including fatigue, sleepiness, depression, anxiety and problems with physical movement, may limit their usefulness.

Treatments for GERD do not improve the function of the lower esophageal sphincter. If acid suppression treatment is stopped, your GERD symptoms will most likely return. Even if they don't, you may experience the asymptomatic complications listed above, making it critical that you talk to your gastroenterologist before stopping treatments of any kind.

Over-the-counter and prescription drugs decrease acid production. These drugs provide short-term symptom relief. They are effective for about 10-15% of GERD symptoms.

### Proton Pump Inhibitors (PPIs)

Proton pump inhibitors (PPIs) are prescription drugs (some are over-the-counter strength) that block the H<sub>2</sub> receptors and can help heal the esophageal lining. Talk to your doctor if you have GERD.

# If Symptoms Persist

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People with severe esophageal reflux or heartburn symptoms unresponsive to the measures described above may need a more complete diagnostic evaluation. A variety of tests and procedures are currently used to further evaluate the patient with heartburn.

## Endoscopy

A procedure during which a thin flexible tube with a camera and a light at the end is placed into the esophagus so your physician can see the tissue lining.

## Biopsy

The removal of a small sample of the tissue lining the esophagus to better determine the causes of underlying disease.

## Esophageal manometric studies

Takes pressure measurements of the esophagus, which may be needed to identify critically low pressure in the lower esophageal sphincter muscle and determine other disorders of esophageal muscle function.

## Impedance monitoring

This test measures the rate of fluid movements at various points along your esophagus. When used in combination with pH monitoring, impedance monitoring offers your gastroenterologist a fuller picture of both acid and non-acid reflux episodes. The combined results are also useful in the evaluation of patients with PPI-resistant typical reflux symptoms, chronic unexplained cough, excessive belching and regurgitation.

## pH (acid) monitoring

In difficult-to-diagnose patients, physicians may choose one of two methods to measure pH (acid) levels in the esophagus. In **ambulatory nasoesophageal pH monitoring**, a tube connected to a recording device is placed through your nose into the esophagus for 24 hours. The test measures reflux during normal everyday activities and regular eating patterns.

A second test replaces the tube with a small wireless transducer temporarily placed at the end of the esophagus. It sends data it collects to a receiver worn on your belt for 24 to 48 hours — again, all while you go about normal, daily activities. At the end of the test, the disposable capsule holding the transducer will pass naturally through your digestive tract.

## Surgery

A small number of people with heartburn may need surgery because of severe reflux and poor response to medical treatment plans. **Fundoplication** is a surgical procedure that reduces reflux. Patients not wanting to take medication to control their symptoms are also candidates for surgery.

# Long-Term Complications of Reflux and Heartburn

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The acid reflux that causes heartburn can result in serious complications, including:

- ▶ **Esophagitis.** The constant presence of stomach acid in the esophagus can result in an irritation or inflammation known as esophagitis. This can lead to esophageal bleeding or ulcers. Esophagitis may remain asymptomatic — no regular symptoms of heartburn — for several years until other complications occur.
- ▶ **Stricture.** An abnormal narrowing or closure of the esophagus
- ▶ **Barrett's esophagus.** A change in the cells lining the esophagus that predisposes the esophagus to the development of cancer in some people. Individuals with Barrett's esophagus should be monitored with periodic surveillance endoscopies and biopsies.

## More about Barrett's Esophagus

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While the majority of patients with GERD will not develop Barrett's esophagus, GERD predisposes some people to the development of esophageal cancer.

### Key Facts

- ▶ The risk of developing cancer of the esophagus is small; less than 1 percent per year.
- ▶ People with Barrett's esophagus may not experience any symptoms, including heartburn.
- ▶ It is more common in patients around age 60.
- ▶ It affects men more often than women.

### Diagnosis

Barrett's esophagus is diagnosed by an upper-GI endoscopy performed by your gastroenterologist. To learn more about upper-GI endoscopy, read the AGA Institute brochure on that topic in your gastroenterologist's office or visit [www.gastro.org/patient](http://www.gastro.org/patient).

### Treatment

Barrett's esophagus has a small but potential risk of transforming into esophageal cancer. Treatment for GERD may improve the condition of the esophageal lining, but has not been convincingly shown to decrease cancer risk. Talk to your gastroenterologist about your risks, the need for surveillance, and potential treatments, including endoscopic and surgical approaches.

Go to [www.gastro.org/patient](http://www.gastro.org/patient) for more information on digestive health and tests performed by gastroenterologists and to find an AGA member physician in your area.

The American Gastroenterological Association (AGA) is dedicated to the mission of advancing the science and practice of gastroenterology. Founded in 1897, the AGA is one of the oldest medical-specialty societies in the U.S. Our 16,000 members include physicians and scientists who research, diagnose and treat disorders of the gastrointestinal tract and liver. The AGA Institute runs the organization's practice, research and educational programs.

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The Digestive Health Initiative® (DHI) is an AGA Institute initiative that offers educational programs on digestive disorders for individuals who are affected by a digestive disease, in an effort to educate the larger health-care community.

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For more information about digestive diseases,  
please visit the AGA Web site at [www.gastro.org](http://www.gastro.org).

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