



Diseases and Conditions

GERD

By Mayo Clinic Staff

Gastroesophageal reflux disease (GERD) is a chronic digestive disease. GERD occurs when stomach acid or, occasionally, stomach content, flows back into your food pipe (esophagus). The backwash (reflux) irritates the lining of your esophagus and causes GERD.

Both acid reflux and heartburn are common digestive conditions that many people experience from time to time. When these signs and symptoms occur at least twice each week or interfere with your daily life, or when your doctor can see damage to your esophagus, you may be diagnosed with GERD.

Most people can manage the discomfort of GERD with lifestyle changes and over-the-counter medications. But some people with GERD may need stronger medications, or even surgery, to reduce symptoms.

GERD signs and symptoms include:

- A burning sensation in your chest (heartburn), sometimes spreading to your throat, along with a sour taste in your mouth
- Chest pain
- Difficulty swallowing (dysphagia)
- Dry cough
- Hoarseness or sore throat
- Regurgitation of food or sour liquid (acid reflux)
- Sensation of a lump in your throat

When to see a doctor

Seek immediate medical attention if you experience chest pain, especially if you have other signs and symptoms, such as shortness of breath or jaw or arm pain. These may be signs and symptoms of a heart attack.

Make an appointment with your doctor if you experience severe or frequent GERD

symptoms. If you take over-the-counter medications for heartburn more than twice a week, see your doctor.

GERD is caused by frequent acid reflux — the backup of stomach acid or bile into the esophagus.

When you swallow, the lower esophageal sphincter — a circular band of muscle around the bottom part of your esophagus — relaxes to allow food and liquid to flow down into your stomach. Then it closes again.

However, if this valve relaxes abnormally or weakens, stomach acid can flow back up into your esophagus, causing frequent heartburn. Sometimes this can disrupt your daily life.

This constant backwash of acid can irritate the lining of your esophagus, causing it to become inflamed (esophagitis). Over time, the inflammation can wear away the esophageal lining, causing complications such as bleeding, esophageal narrowing or Barrett's esophagus (a precancerous condition).

Conditions that can increase your risk of GERD include:

- Obesity
- Bulging of top of stomach up into the diaphragm (hiatal hernia)
- Pregnancy
- Smoking
- Dry mouth
- Asthma
- Diabetes
- Delayed stomach emptying
- Connective tissue disorders, such as scleroderma

Over time, chronic inflammation in your esophagus can lead to complications, including:

- **Narrowing of the esophagus (esophageal stricture).** Damage to cells in the lower esophagus from acid exposure leads to formation of scar tissue. The scar tissue narrows the food pathway, causing difficulty swallowing.
- **An open sore in the esophagus (esophageal ulcer).** Stomach acid can severely erode tissues in the esophagus, causing an open sore to form. The esophageal ulcer may bleed, cause pain and make swallowing difficult.
- **Precancerous changes to the esophagus (Barrett's esophagus).** In Barrett's esophagus, the tissue lining the lower esophagus changes. These changes are associated with an increased risk of esophageal cancer. The risk of cancer is low, but your doctor will likely recommend regular endoscopy exams to look for early warning signs of esophageal cancer.

If you think you have GERD, you're likely to start by first seeing your family doctor or a general practitioner. Your doctor may recommend you see a doctor who specializes in treating digestive diseases (gastroenterologist).

Because appointments can be brief, and because there's often a lot of ground to cover, it's a good idea to be well-prepared. Here's some information to help you get ready, and what to expect from your doctor.

What you can do

- **Be aware of any pre-appointment restrictions.** At the time you make the appointment, be sure to ask if there's anything you need to do in advance, such as restrict your diet.
- **Write down any symptoms you're experiencing,** including any that may seem unrelated to the reason for which you scheduled the appointment.
- **Write down key personal information,** including any major stresses or recent life changes.
- **Make a list of all medications,** vitamins or supplements that you're taking.
- **Consider taking a family member or friend along.** Sometimes it can be difficult to absorb all the information provided during an appointment. Someone who accompanies you may remember something that you missed or forgot.
- **Write down questions to ask** your doctor.

Your time with your doctor is limited, so preparing a list of questions can help you make the most of your time together. List your questions from most important to least important in case time runs out. For gastroesophageal reflux disease, some basic questions to ask your doctor include:

- What is likely causing my symptoms?
- What kinds of tests do I need?
- Do I need an endoscopy?
- Is my GERD likely temporary or chronic?
- What is the best course of action?
- What are the alternatives to the primary approach that you're suggesting?
- I have other health conditions. How can I best manage them while managing GERD?
- Are there any restrictions that I need to follow?
- Should I see a specialist? What will that cost, and will my insurance cover it?
- Is there a generic alternative to the medicine you're prescribing for me?
- Are there brochures or other printed material that I can take with me? What websites do you recommend?
- Should I schedule a follow-up visit?

In addition to the questions that you've prepared to ask your doctor, don't hesitate to ask questions during your appointment anytime you don't understand something.

What to expect from your doctor

Your doctor is likely to ask you a number of questions. Being ready to answer them may allow more time later to cover points you want to address. Your doctor may ask:

- What are your symptoms?
- When did you first notice these symptoms?
- Have your symptoms been continuous or occasional?
- How severe are your symptoms?
- What, if anything, seems to improve your symptoms?
- What, if anything, appears to worsen your symptoms?
- Do your symptoms wake you up at night?
- Are your symptoms worse after meals or after lying down?
- Do your symptoms include nausea or vomiting?
- Does food or sour material ever come up in the back of your throat?
- Do you have difficulty swallowing?
- Have you gained or lost weight?
- Do you experience nausea and vomiting?

What you can do in the meantime

Try lifestyle changes to control your symptoms until you see your doctor. For instance, avoid foods that trigger your heartburn and avoid eating at least two hours before bedtime.

Diagnosis of GERD is based on:

- **Your symptoms.** Your doctor may be able to diagnose GERD based on frequent heartburn and other symptoms.
- **A test to monitor the amount of acid in your esophagus.** Ambulatory acid (pH) probe tests use a device to measure acid for 24 hours. The device identifies when, and for how long, stomach acid regurgitates into your esophagus. One type of monitor is a thin, flexible tube (catheter) that's threaded through your nose into your esophagus. The tube connects to a small computer that you wear around your waist or with a strap over your shoulder.

Another type is a clip that's placed in your esophagus during endoscopy. The probe transmits a signal, also to a small computer that you wear. After about two days, the probe falls off to be passed in your stool. Your doctor may ask that you stop taking GERD medications to prepare for this test.

If you have GERD and you're a candidate for surgery, you may also have other tests, such as:

- **An X-ray of your upper digestive system.** Sometimes called a barium swallow or upper GI series, this procedure involves drinking a chalky liquid that coats and fills the inside lining of your digestive tract. Then X-rays are taken of your upper digestive tract. The coating allows your doctor to see a silhouette of your esophagus, stomach and upper intestine (duodenum).
- **A flexible tube to look inside your esophagus.** Endoscopy is a way to visually examine the inside of your esophagus and stomach. During endoscopy, your doctor inserts a thin, flexible tube equipped with a light and camera (endoscope) down your throat.

Your doctor may also use endoscopy to collect a sample of tissue (biopsy) for further testing. Endoscopy is useful in looking for complications of reflux, such as Barrett's esophagus.

- **A test to measure the movement of the esophagus.** Esophageal motility testing (manometry) measures movement and pressure in the esophagus. The test involves placing a catheter through your nose and into your esophagus.

Treatment for heartburn and other signs and symptoms of GERD usually begins with over-the-counter medications that control acid. If you don't experience relief within a few weeks, your doctor may recommend other treatments, including medications and surgery.

Initial treatments to control heartburn

Over-the-counter treatments that may help control heartburn include:

- **Antacids that neutralize stomach acid.** Antacids, such as Maalox, Mylanta, Gelusil, Gaviscon, Roloids and Tums, may provide quick relief. But antacids alone won't heal an inflamed esophagus damaged by stomach acid. Overuse of some antacids can cause side effects, such as diarrhea or constipation.
- **Medications to reduce acid production.** Called H-2-receptor blockers, these medications include cimetidine (Tagamet HB), famotidine (Pepcid AC), nizatidine (Axid AR) or ranitidine (Zantac). H-2-receptor blockers don't act as quickly as antacids do, but they provide longer relief and may decrease acid production from the stomach for up to 12 hours. Stronger versions of these medications are available in prescription form.
- **Medications that block acid production and heal the esophagus.** Proton pump inhibitors are stronger blockers of acid production than are H-2-receptor blockers and allow time for damaged esophageal tissue to heal. Over-the-counter proton pump inhibitors include lansoprazole (Prevacid 24 HR) and omeprazole (Prilosec, Zegerid OTC).

Contact your doctor if you need to take these medications for longer than two to three

weeks or your symptoms are not relieved.

Prescription-strength medications

If heartburn persists despite initial approaches, your doctor may recommend prescription-strength medications, such as:

- **Prescription-strength H-2-receptor blockers.** These include prescription-strength cimetidine (Tagamet), famotidine (Pepcid), nizatidine (Axid) and ranitidine (Zantac).
- **Prescription-strength proton pump inhibitors.** Prescription-strength proton pump inhibitors include esomeprazole (Nexium), lansoprazole (Prevacid), omeprazole (Prilosec, Zegerid), pantoprazole (Protonix), rabeprazole (Aciphex) and dexlansoprazole (Dexilant).

These medications are generally well-tolerated, but long-term use may be associated with a slight increase in risk of bone fracture and vitamin B-12 deficiency.

- **Medications to strengthen the lower esophageal sphincter.** Baclofen may decrease the frequency of relaxations of the lower esophageal sphincter and therefore decrease gastroesophageal reflux. It has less of an effect than do proton pump inhibitors, but it might be used in severe reflux disease. Baclofen can be associated with significant side effects, most commonly fatigue or confusion.

GERD medications are sometimes combined to increase effectiveness.

Surgery and other procedures used if medications don't help

Most GERD can be controlled through medications. In situations where medications aren't helpful or you wish to avoid long-term medication use, your doctor may recommend more-invasive procedures, such as:

- **Surgery to reinforce the lower esophageal sphincter (Nissen fundoplication).** This surgery involves tightening the lower esophageal sphincter to prevent reflux by wrapping the very top of the stomach around the outside of the lower esophagus. Surgeons usually perform this surgery laparoscopically. In laparoscopic surgery, the surgeon makes three or four small incisions in the abdomen and inserts instruments, including a flexible tube with a tiny camera, through the incisions.
- **Surgery to strengthen the lower esophageal sphincter (Linx).** The Linx device is a ring of tiny magnetic titanium beads that is wrapped around the junction of the stomach and esophagus. The magnetic attraction between the beads is strong enough to keep the opening between the two closed to refluxing acid, but weak enough so that food can pass through it. It can be implanted using minimally invasive surgery methods. This newer device has been approved by the Food and Drug Administration and early studies with it appear promising.

Lifestyle changes may help reduce the frequency of heartburn. Consider trying to:

- **Maintain a healthy weight.** Excess pounds put pressure on your abdomen, pushing

up your stomach and causing acid to back up into your esophagus. If your weight is healthy, work to maintain it. If you are overweight or obese, work to slowly lose weight — no more than 1 or 2 pounds (0.5 to 1 kilogram) a week. Ask your doctor for help in devising a weight-loss strategy that will work for you.

- **Avoid tight-fitting clothing.** Clothes that fit tightly around your waist put pressure on your abdomen and the lower esophageal sphincter.
- **Avoid foods and drinks that trigger heartburn.** Everyone has specific triggers. Common triggers such as fatty or fried foods, tomato sauce, alcohol, chocolate, mint, garlic, onion, and caffeine may make heartburn worse. Avoid foods you know will trigger your heartburn.
- **Eat smaller meals.** Avoid overeating by eating smaller meals.
- **Don't lie down after a meal.** Wait at least three hours after eating before lying down or going to bed.
- **Elevate the head of your bed.** If you regularly experience heartburn at night or while trying to sleep, put gravity to work for you. Place wood or cement blocks under the feet of your bed so that the head end is raised by 6 to 9 inches. If it's not possible to elevate your bed, you can insert a wedge between your mattress and box spring to elevate your body from the waist up. Wedges are available at drugstores and medical supply stores. Raising your head with additional pillows is not effective.
- **Don't smoke.** Smoking decreases the lower esophageal sphincter's ability to function properly.

No alternative medicine therapies have been proved to treat GERD or to reverse damage to the esophagus. Still, some complementary and alternative therapies may provide some relief, when combined with your doctor's care.

Talk to your doctor about what alternative GERD treatments may be safe for you. Options may include:

- **Herbal remedies.** Herbal remedies sometimes used for GERD symptoms include licorice, slippery elm, chamomile, marshmallow and others. Herbal remedies can have serious side effects, and they may interfere with medications. Ask your doctor about a safe dosage before beginning any herbal remedy.
- **Relaxation therapies.** Techniques to calm stress and anxiety may reduce signs and symptoms of GERD. Ask your doctor about relaxation techniques, such as progressive muscle relaxation or guided imagery.
- **Acupuncture.** Acupuncture involves inserting thin needles into specific points on your body. Limited evidence suggests it may help people with heartburn, but major studies have not proved a benefit. Ask your doctor whether acupuncture is safe for you.

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