Subtle Signs and Symptoms of Illness and Injury

Developmental Disabilities Support Division

Resource Packet C

Aspiration, GERD, and Choking

Required for:
RN, LPN, SLP, PT, OT, BSC,
and
Optional for RD/LD/LN and Other

NEW MEXICO
Department of Health
Developmental Disabilities Supports Division

2021

National Institute of Diabetes and Digestive and Kidney Diseases

Acid Reflux (GER & GERD) in Adults

- Definition & Facts
- Symptoms & Causes
- Diagnosis
- Treatment
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Definition & Facts

In this section:

- What is GER?
- Does GER have another name?
- How common is GER?
- What is GERD?
- How common is GERD?
- Who is more likely to have GERD?
- What are the complications of GERD?

What is GER?

Gastroesophageal reflux (GER) happens when your stomach contents come back up into your esophagus. Many people have GER once in a while, and GER often happens without causing symptoms. In some cases, GER may cause heartburn, also called acid indigestion.

Gastroesophageal reflux (GER) may cause heartburn.

Does GER have another name?

Doctors also refer to GER as

- acid indigestion
- acid reflux
- acid regurgitation
- heartburn
- reflux

How common is GER?

Having GER once in a while is common.

What is GERD?

Gastroesophageal reflux disease (GERD) is a more severe and long-lasting condition in which GER causes repeated symptoms that are bothersome or leads to complications over time.

If you think you may have GERD, you should see your doctor.

How common is GERD?

Researchers estimate that about 20 percent of people in the United States have GERD.[1]

Who is more likely to have GERD?

Anyone can develop GERD. You are more likely to have GERD if you

- are overweight or have obesity
- are a pregnant woman
- take certain medicines
- smoke or are regularly exposed to secondhand smoke

What are the complications of GERD?

Without treatment, GERD can sometimes cause serious complications over time, such as esophagitis, esophageal stricture, and Barrett's esophagus, as well as complications outside the esophagus.

Esophagitis

Esophagitis is inflammation in the esophagus. Esophagitis may cause ulcers and bleeding in the lining of the esophagus. Chronic esophagitis increases the chance of developing esophageal stricture and Barrett's esophagus.

Esophageal stricture

An esophageal stricture happens when your esophagus becomes too narrow. Esophageal strictures can lead to problems with swallowing.

Barrett's esophagus

GERD can sometimes lead to Barrett's esophagus, a condition in which tissue that is similar to the lining of your intestine replaces the tissue lining your esophagus. A small number of people with Barrett's esophagus develop a type of cancer called esophageal adenocarcinoma NIH.

Complications outside the esophagus

Some people with GERD develop complications outside the esophagus, in the mouth, throat, or lungs. These complications may include

- asthma NIH
- chronic cough NIH
- hoarseness NIH
- laryngitis—inflammation of your voice box that can cause you to lose your voice for a short time
- wearing away of tooth enamel

References

[1] El-Serag HB, Sweet S, Winchester CC, Dent J. Update on the epidemiology of gastroesophageal reflux disease: a systematic review. *Gut.* 2014;63(6):871–880. doi: 10.1136/gutjnl-2012-304269

Symptoms & Causes

What are the symptoms of GER and GERD?

Gastroesophageal reflux (GER) and gastroesophageal reflux disease (GERD) commonly cause symptoms such as

- heartburn, a painful, burning feeling in the middle of your chest, behind your breastbone, rising from the lower tip of your breastbone toward your throat
- regurgitation, or stomach contents coming back up through your esophagus and into your throat or mouth, which may cause you to taste food or stomach acid

However, not all adults with GERD have heartburn or regurgitation. Other symptoms may include

- chest pain
- nausea
- problems swallowing or pain while swallowing
- symptoms of complications in the mouth, throat, or lungs, such as chronic cough or hoarseness

Symptoms of GERD may include chronic cough.

You should see a doctor if you think you have GERD, or if your symptoms don't get better with over-the-counter medicines or lifestyle changes.

You should also see a doctor if you have symptoms that could be related to GERD complications or other serious health problems, such as

- chest pain
- loss of appetite
- persistent vomiting
- problems swallowing or pain while swallowing
- signs of bleeding in the digestive tract, such as
  - vomit that contains blood or looks like coffee grounds
  - stool that contains blood or looks black and tarry
- unexplained weight loss

What causes GER and GERD?

Your lower esophageal sphincter and diaphragm most often prevent GER, which is when stomach contents come back up into your esophagus. However, many people have GER once in a while.

GERD may develop if your lower esophageal sphincter becomes weak or relaxes when it shouldn't. Factors that may affect the lower esophageal sphincter and lead to GERD include

- being overweight or having obesity
- being pregnant
- smoking or inhaling secondhand smoke

Some medicines can cause GERD or make GERD symptoms worse. Examples include

- benzodiazepines, sedatives that make you calmer or sleepy
- calcium channel blockers, which are used to treat high blood pressure NIH
- certain asthma NIH medicines
- nonsteroidal anti-inflammatory drugs (NSAIDs)
- tricyclic antidepressants NIH

A hiatal hernia can also increase the chance of getting GERD or make GERD symptoms worse. A hiatal hernia is a condition in which the opening in your diaphragm lets the upper part of the stomach move up into your chest.

Diagnosis

How do doctors diagnose GER & GERD?

In most cases, doctors diagnose gastroesophageal reflux (GER) and gastroesophageal reflux disease (GERD) by reviewing your symptoms and medical history. If your symptoms suggest you have GERD, your doctor may recommend treatment with medicines and lifestyle changes, instead of doing tests.

Your doctor may recommend medical tests if

- your symptoms suggest you might have a complication of GERD
- your symptoms suggest that you might have another health problem that causes symptoms similar to those of GERD
- your symptoms don't improve after treatment with medicines and lifestyle changes

Your doctor may refer you to a gastroenterologist to diagnose and treat GERD.

What tests do doctors use to diagnose GERD?

Your doctor may order one or more of the following tests to help diagnose GERD and check for GERD complications or other health problems.

Upper gastrointestinal (GI) endoscopy

Upper GI endoscopy is a procedure in which a doctor uses an endoscope—a flexible tube with a camera—to see the lining of your upper GI tract, including your esophagus, stomach, and duodenum. During upper GI endoscopy, a doctor may obtain biopsies by passing an instrument through the endoscope to take small pieces of tissue from the lining of your esophagus. A pathologist will examine the tissue under a microscope. Doctors may order an upper GI endoscopy to check for complications of GERD or problems other than GERD that may be causing your symptoms.

Your doctor may order an upper GI endoscopy to help diagnose GERD.

Esophageal pH monitoring

Esophageal pH monitoring is the most accurate way to detect stomach acid in the esophagus. Two types of esophageal pH monitoring are

- **catheter monitoring,** in which a health care professional passes one end of a catheter—a thin, flexible tube—through your nose and into your esophagus to measure acid and nonacid reflux
- **capsule monitoring,** in which a health care professional uses an endoscope to place a small, wireless capsule on the lining of your esophagus to measure acid reflux

During esophageal pH monitoring, you'll wear a monitor that receives information from the catheter or capsule and tracks information about your diet, sleep, and symptoms. Your doctor will use this information to see how your diet, sleep, and symptoms relate to acid reflux in your esophagus. Doctors may order this test to confirm the diagnosis of GERD or to find out if GERD treatments are working.

Treatment

How do doctors treat GER and GERD?

Your doctor may recommend that you make lifestyle changes and take medicines to manage symptoms of gastroesophageal reflux (GER) or gastroesophageal reflux disease (GERD). In some cases, doctors may also recommend surgery.

Lifestyle changes

Lifestyle changes may reduce your symptoms. Your doctor may recommend

- losing weight if you're overweight or have obesity
- elevating your head during sleep, either by safely putting blocks under your bedposts to raise the head of your bed 6 to 8 inches or by placing a foam wedge under your head
- quitting smoking, if you smoke
- changing your eating habits and diet

Over-the-counter and prescription medicines

You can buy many GERD medicines over the counter. However, if you have symptoms that will not go away with over-the-counter medicines, you should talk with your doctor. Your doctor may prescribe one or more medicines to treat GERD.

Antacids. Doctors may recommend antacids to relieve mild heartburn and other mild GER and GERD symptoms. Antacids are available over the counter. Antacids can help relieve mild symptoms. However, you shouldn't use these medicines every day or for severe symptoms, except after discussing your antacid use with your doctor. These medicines can have side effects, such as diarrhea or constipation.

H2 blockers. H2 blockers lower the amount of acid your stomach makes. H2 blockers can help heal the esophagus, but not as well as proton pump inhibitors (PPIs) can. You can buy H2 blockers over the counter, or your doctor can prescribe one.

Proton pump inhibitors (PPIs). PPIs lower the amount of acid your stomach makes. PPIs are better at treating GERD symptoms than H2 blockers, and they can heal the esophageal lining in most people with

GERD. You can buy PPIs over the counter, or your doctor can prescribe one. Doctors may prescribe PPIs for long-term GERD treatment.

PPIs are generally safe and effective. Side effects are uncommon and may include headache, diarrhea, and upset stomach. Research also suggests that taking PPIs may increase the chance of *Clostridioides difficile (C. diff)* infection. Experts are still studying the effects of taking PPIs for a long time or in high doses. Talk with your doctor about the risks and benefits of taking PPIs.

Your doctor may prescribe one or more medicines to treat GERD.

Other medicines. If antacids, H2 blockers, and PPIs don't improve your symptoms, your doctor may recommend other medicines.

Surgery and other medical procedures

Your doctor may recommend surgery if your GERD symptoms don't improve with lifestyle changes and medicines, or if you wish to stop taking long-term GERD medicines to manage symptoms. You're more likely to develop complications from surgery than from medicines.

Fundoplication. Fundoplication is the most common surgery for GERD. In most cases, it leads to long-term improvement of GERD symptoms. During the operation, a surgeon sews the top of your stomach around the end of your esophagus to add pressure to the lower esophageal sphincter and help prevent reflux.

Surgeons may perform fundoplication as laparoscopic or open surgery. In laparoscopic fundoplication, which is more common, surgeons make small cuts in the abdomen and insert special tools to perform the operation. Laparoscopic fundoplication leaves several small scars. In open fundoplication, surgeons make a larger cut in the abdomen.

Bariatric surgery. If you have GERD and obesity, your doctor may recommend weight-loss surgery, also called bariatric surgery, most often gastric bypass surgery. Bariatric surgery can help you lose weight and reduce GERD symptoms.

Endoscopy. In a small number of cases, doctors may recommend procedures that use endoscopy to treat GERD. For endoscopy, doctors insert an endoscope—a small, flexible tube with a light and camera—through your mouth and into your esophagus. Doctors may use endoscopic procedures to sew the top of your stomach around the lower esophageal sphincter or to deliver radiofrequency energy to the sphincter. Doctors don't use these procedures often.

Eating, Diet, & Nutrition

How can changes in my eating habits improve GERD symptoms?

If you have gastroesophageal reflux disease (GERD) and you are overweight or have obesity, your doctor may suggest losing weight to reduce your GERD symptoms. Your doctor can recommend a healthy eating plan to help you lose weight.

If you have GERD symptoms at night or when you're lying down, eating meals at least 3 hours before you lie down or go to bed may improve symptoms.[2]

What should I avoid eating if I have GERD symptoms?

Some people who have GERD find that certain foods or drinks trigger symptoms or make symptoms worse. Foods and drinks that have been commonly linked to GERD symptoms include

- acidic foods, such as citrus fruits and tomatoes
- alcoholic drinks
- chocolate
- coffee and other sources of caffeine
- high-fat foods
- mint
- spicy foods

Talk with your doctor about your diet and foods or drinks that seem to increase your symptoms. Your doctor may recommend reducing or avoiding certain foods or drinks to see if GERD symptoms improve.

If you are overweight or have obesity, your doctor may suggest losing weight to reduce your GERD symptoms.

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[2] Badillo R, Francis D. Diagnosis and treatment of gastroesophageal reflux disease. *World Journal of Gastrointestinal Pharmacology and Therapeutics.* 2014;5(3):105–112. doi: 10.4292/wjgpt.v5.i3.105

- how diet affects symptoms
- new ways to diagnose the disease
- new treatments for GERD
- risk factors for GERD complications, such as Barrett's esophagus and esophageal cancer NIH

Find out if clinical studies are right for you NIH.

National Institute of Diabetes and Digestive and Kidney Diseases

Barrett's Esophagus

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Definition & Facts

In this section:

- What is Barrett's Esophagus?
- Are people with Barrett's esophagus more likely to develop cancer?
- How common is Barrett's esophagus?
- Who is more likely to develop Barrett's esophagus?

What is Barrett's Esophagus?

Barrett's esophagus is a condition in which tissue that is similar to the lining of your intestine replaces the tissue lining your esophagus. Doctors call this process intestinal metaplasia NIH.

Are people with Barrett's esophagus more likely to develop cancer?

People with Barrett's esophagus are more likely to develop a rare type of cancer called esophageal adenocarcinoma NIH.

The risk of esophageal adenocarcinoma in people with Barrett's esophagus is about 0.5 percent per year.[1] Typically, before this cancer develops, precancerous cells appear in the Barrett's tissue. Doctors call this condition dysplasia and classify the dysplasia NIH as low grade or high grade.

You may have Barrett's esophagus for many years before cancer develops. Visit the National Cancer Institute to learn more about esophageal adenocarcinoma NIH.

How common is Barrett's esophagus?

Experts are not sure how common Barrett's esophagus is. Researchers estimate that it affects 1.6 to 6.8 percent of people.[2]

Who is more likely to develop Barrett's esophagus?

Men develop Barrett's esophagus twice as often as women, and Caucasian men develop this condition more often than men of other races.[1] The average age at diagnosis is 55.[3] Barrett's esophagus is uncommon in children.[3]

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Symptoms & Causes

In this section:

- What are the symptoms of Barrett's esophagus?
- What causes Barrett's esophagus?
- What factors increase a person's chances of developing Barrett's esophagus?
- What factors decrease a person's chances of developing Barrett's esophagus?

What are the symptoms of Barrett's esophagus?

While Barrett's esophagus itself doesn't cause symptoms, many people with Barrett's esophagus have gastroesophageal reflux disease (GERD), which does cause symptoms.

What causes Barrett's esophagus?

Experts don't know the exact cause of Barrett's esophagus. However, some factors can increase or decrease your chance of developing Barrett's esophagus.

What factors increase a person's chances of developing Barrett's esophagus?

Having GERD increases your chances of developing Barrett's esophagus. GERD is a more serious, chronic form of gastroesophageal reflux, a condition in which stomach contents flow back up into your

esophagus. Refluxed stomach acid that touches the lining of your esophagus can cause heartburn and damage the cells in your esophagus.

Between 10 and 15 percent of people with GERD develop Barrett's esophagus.[4]

Obesity—specifically high levels of belly fat—and smoking also increase your chances of developing Barrett's esophagus. Some studies suggest that your genetics, or inherited genes, may play a role in whether or not you develop Barrett's esophagus.

What factors decrease a person's chances of developing Barrett's esophagus?

Having a *Helicobacter pylori* (*H. pylori*) infection may decrease your chances of developing Barrett's esophagus. Doctors are not sure how *H. pylori* protects against Barrett's esophagus. While the bacteria damage your stomach and the tissue in your duodenum, some researchers believe the bacteria make your stomach contents less damaging to your esophagus if you have GERD.

Researchers have found that other factors may decrease the chance of developing Barrett's esophagus, including

- frequent use of aspirin or other nonsteroidal anti-inflammatory drugs
- a diet high in fruits, vegetables, and certain vitamins

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Diagnosis

How do doctors diagnose Barrett's esophagus?

Doctors diagnose Barrett's esophagus with an upper gastrointestinal (GI) endoscopy and a biopsy. Doctors may diagnose Barrett's esophagus while performing tests to find the cause of a patient's gastroesophageal reflux disease (GERD) symptoms.

Medical history

Your doctor will ask you to provide your medical history. Your doctor may recommend testing if you have multiple factors that increase your chances of developing Barrett's esophagus.

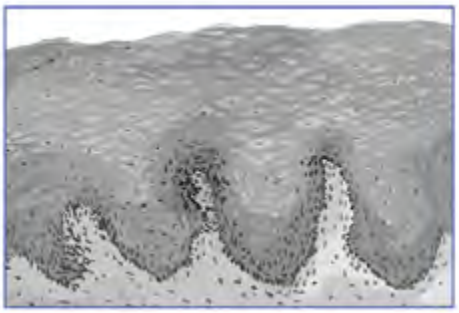
Upper GI endoscopy and biopsy

In an upper GI endoscopy, a gastroenterologist, surgeon, or other trained health care provider uses an endoscope to see inside your upper GI tract, most often while you receive light sedation. The doctor

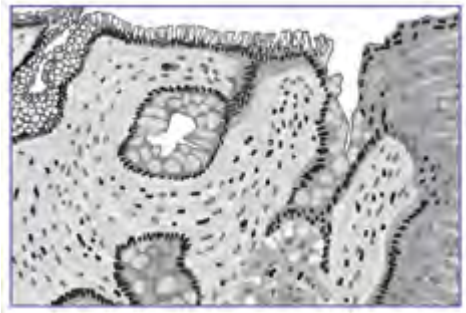
carefully feeds the endoscope down your esophagus and into your stomach and duodenum. The procedure may show changes in the lining of your esophagus.

The doctor performs a biopsy with the endoscope by taking a small piece of tissue from the lining of your esophagus. You won't feel the biopsy. A pathologist examines the tissue in a lab to determine whether Barrett's esophagus cells are present. A pathologist who has expertise in diagnosing Barrett's esophagus may need to confirm the results.

Barrett's esophagus can be difficult to diagnose because this condition does not affect all the tissue in your esophagus. The doctor takes biopsy samples from at least eight different areas of the lining of your esophagus.



Normal esophagus



Barrett's esophagus

Who should be screened for Barrett's esophagus?

Your doctor may recommend screening for Barrett's esophagus if you are a man with chronic—lasting more than 5 years—and/or frequent—happening weekly or more—symptoms of GERD and two or more risk factors for Barrett's esophagus. These risk factors include

- being age 50 and older
- being Caucasian
- having high levels of belly fat
- being a smoker or having smoked in the past
- having a family history of Barrett's esophagus or esophageal adenocarcinoma

Treatment

How do doctors treat Barrett's esophagus?

Your doctor will talk about the best treatment options for you based on your overall health, whether you have dysplasia NIH, and its severity. Treatment options include medicines for GERD, endoscopic ablative therapies, endoscopic mucosal resection, and surgery.

Periodic surveillance endoscopy

Your doctor may use upper gastrointestinal endoscopy with a biopsy periodically to watch for signs of cancer development. Doctors call this approach surveillance.

Experts aren't sure how often doctors should perform surveillance endoscopies. Talk with your doctor about what level of surveillance is best for you. Your doctor may recommend endoscopies more frequently if you have high-grade dysplasia rather than low-grade or no dysplasia. Read whether people with Barrett's esophagus are more likely to develop cancer.

Medicines

If you have Barrett's esophagus and gastroesophageal reflux disease (GERD), your doctor will treat you with acid-suppressing medicines called proton pump inhibitors (PPIs). These medicines can prevent further damage to your esophagus and, in some cases, heal existing damage.

PPIs include

- omeprazole NIH (Prilosec, Zegerid)
- lansoprazole NIH (Prevacid)
- pantoprazole NIH (Protonix)
- rabeprazole NIH (AcipHex)
- esomeprazole NIH (Nexium)
- dexlansoprazole NIH (Dexilant)

All of these medicines are available by prescription. Omeprazole and lansoprazole are also available in over-the-counter strength.

Your doctor may consider anti-reflux surgery if you have GERD symptoms and don't respond to medicines. However, research has not shown that medicines or surgery for GERD and Barrett's esophagus lower your chances of developing dysplasia or esophageal adenocarcinoma NIH.

Endoscopic ablative therapies

Endoscopic ablative therapies use different techniques to destroy the dysplasia in your esophagus. After the therapies, your body should begin making normal esophageal cells.

A doctor, usually a gastroenterologist or surgeon, performs these procedures at certain hospitals and outpatient centers. You will receive local anesthesia and a sedative. The most common procedures are the following:

- **Photodynamic therapy.** Photodynamic therapy uses a light-activated chemical called porfimer (Photofrin), an endoscope, and a laser to kill precancerous cells in your esophagus. A doctor injects porfimer into a vein in your arm, and you return 24 to 72 hours later to complete the procedure.

  Complications of photodynamic therapy may include

  - sensitivity of your skin and eyes to light for about 6 weeks after the procedure

- burns, swelling, pain, and scarring in nearby healthy tissue
- coughing, trouble swallowing, stomach pain, painful breathing, and shortness of breath.

- **Radiofrequency ablation.** Radiofrequency ablation uses radio waves to kill precancerous and cancerous cells in the Barrett's tissue. An electrode mounted on a balloon or an endoscope creates heat to destroy the Barrett's tissue and precancerous and cancerous cells.

  Complications of radiation ablation may include

  - chest pain
  - cuts in the lining of your esophagus
  - strictures

  Clinical trials have shown that complications are less common with radiofrequency ablation compared with photodynamic therapy.

Endoscopic mucosal resection

In endoscopic mucosal resection, your doctor lifts the Barrett's tissue, injects a solution underneath or applies suction to the tissue, and then cuts the tissue off. The doctor then removes the tissue with an endoscope. Gastroenterologists perform this procedure at certain hospitals and outpatient centers. You will receive local anesthesia to numb your throat and a sedative to help you relax and stay comfortable.

Before performing an endoscopic mucosal resection for cancer, your doctor will do an endoscopic ultrasound.

Complications can include bleeding or tearing of your esophagus. Doctors sometimes combine endoscopic mucosal resection with photodynamic therapy.

Surgery

Surgery called esophagectomy is an alternative to endoscopic therapies. Many doctors prefer endoscopic therapies because these procedures have fewer complications.

Esophagectomy is the surgical removal of the affected sections of your esophagus. After removing sections of your esophagus, a surgeon rebuilds your esophagus from part of your stomach or large intestine. The surgery is performed at a hospital. You'll receive general anesthesia, and you'll stay in the hospital for 7 to 14 days after the surgery to recover.

Surgery may not be an option if you have other medical problems. Your doctor may consider the less-invasive endoscopic treatments or continued frequent surveillance instead.

Eating, Diet, & Nutrition

How can your diet help prevent Barrett's esophagus?

Researchers have not found that diet and nutrition play an important role in causing or preventing Barrett's esophagus.

If you have gastroesophageal reflux (GER) or gastroesophageal reflux disease (GERD), you can prevent or relieve your symptoms by changing your diet. Dietary changes that can help reduce your symptoms include

- decreasing fatty foods
- eating small, frequent meals instead of three large meals

Avoid eating or drinking the following items that may make GER or GERD worse:

- chocolate
- coffee
- peppermint
- greasy or spicy foods
- tomatoes and tomato products
- alcoholic drinks

MAYO CLINIC

First aid

Choking: First aid

Choking: First aid

A step-by-step guide explaining what to do in a choking emergency.

By Mayo Clinic Staff

Choking occurs when a foreign object lodges in the throat or windpipe, blocking the flow of air. In adults, a piece of food often is the culprit. Young children often swallow small objects. Because choking cuts off oxygen to the brain, give first aid as quickly as possible.

The universal sign for choking is hands clutched to the throat. If the person doesn't give the signal, look for these indications:

- Inability to talk
- Difficulty breathing or noisy breathing
- Squeaky sounds when trying to breathe
- Cough, which may either be weak or forceful
- Skin, lips and nails turning blue or dusky
- Skin that is flushed, then turns pale or bluish in color
- Loss of consciousness

If the person is able to cough forcefully, the person should keep coughing. If the person is choking and can't talk, cry or laugh forcefully, the American Red Cross recommends a "five-and-five" approach to delivering first aid:

- **Give 5 back blows.** Stand to the side and just behind a choking adult. For a child, kneel down behind. Place one arm across the person's chest for support. Bend the person over at the waist so that the upper body is parallel with the ground. Deliver five separate back blows between the person's shoulder blades with the heel of your hand.
- **Give 5 abdominal thrusts.** Perform five abdominal thrusts (also known as the Heimlich maneuver).
- **Alternate between 5 blows and 5 thrusts** until the blockage is dislodged.

The American Heart Association doesn't teach the back blow technique, only the abdominal thrust procedures. It's OK not to use back blows if you haven't learned the technique. Both approaches are acceptable.

To perform abdominal thrusts (Heimlich maneuver) on someone else:

- **Stand behind the person.** Place one foot slightly in front of the other for balance. Wrap your arms around the waist. Tip the person forward slightly. If a child is choking, kneel down behind the child.
- **Make a fist with one hand.** Position it slightly above the person's navel.
- **Grasp the fist with the other hand.** Press hard into the abdomen with a quick, upward thrust — as if trying to lift the person up.
- **Perform between six and 10 abdominal thrusts** until the blockage is dislodged.

If you're the only rescuer, perform back blows and abdominal thrusts before calling 911 or your local emergency number for help. If another person is available, have that person call for help while you perform first aid.

If the person becomes unconscious, perform standard cardiopulmonary resuscitation (CPR) with chest compressions and rescue breaths.

To perform abdominal thrusts (Heimlich maneuver) on yourself:

First, if you're alone and choking, call 911 or your local emergency number immediately. Then, although you'll be unable to effectively deliver back blows to yourself, you can still perform abdominal thrusts to dislodge the item.

- **Place a fist** slightly above your navel.
- **Grasp your fist** with the other hand and bend over a hard surface — a countertop or chair will do.
- **Shove your fist** inward and upward.

To clear the airway of a pregnant woman or obese person:

- **Position your hands a little bit higher** than with a normal Heimlich maneuver, at the base of the breastbone, just above the joining of the lowest ribs.
- **Proceed as with the Heimlich maneuver,** pressing hard into the chest, with a quick thrust.
- **Repeat** until the food or other blockage is dislodged. If the person becomes unconscious, follow the next steps.

To clear the airway of an unconscious person:

- **Lower the person** on his or her back onto the floor, arms to the side.
- **Clear the airway.** If a blockage is visible at the back of the throat or high in the throat, reach a finger into the mouth and sweep out the cause of the blockage. Don't try a finger sweep if you can't see the object. Be careful not to push the food or object deeper into the airway, which can happen easily in young children.
- **Begin CPR** if the object remains lodged and the person doesn't respond after you take the above measures. The chest compressions used in CPR may dislodge the object. Remember to recheck the mouth periodically.

To clear the airway of a choking infant younger than age 1:

- **Assume a seated position and hold the infant facedown** on your forearm, which is resting on your thigh. Support the infant's head and neck with your hand, and place the head lower than the trunk.

- **Thump the infant gently but firmly** five times on the middle of the back using the heel of your hand. The combination of gravity and the back blows should release the blocking object. Keep your fingers pointed up to avoid hitting the infant in the back of the head.
- **Turn the infant faceup on your forearm,** resting on your thigh with the head lower than the trunk if the infant still isn't breathing. Using two fingers placed at the center of the infant's breastbone, give five quick chest compressions. Press down about 1 1/2 inches, and let the chest rise again in between each compression.
- **Repeat the back blows and chest thrusts** if breathing doesn't resume. Call for emergency medical help.
- **Begin infant CPR** if one of these techniques opens the airway but the infant doesn't resume breathing.

If the child is older than age 1 and conscious, give abdominal thrusts only. Be careful not to use too much force to avoid damaging ribs or internal organs.

To prepare yourself for these situations, learn the Heimlich maneuver and CPR in a certified first-aid training course.

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