

Gastritis

National Digestive Diseases Information Clearinghouse



What is gastritis?

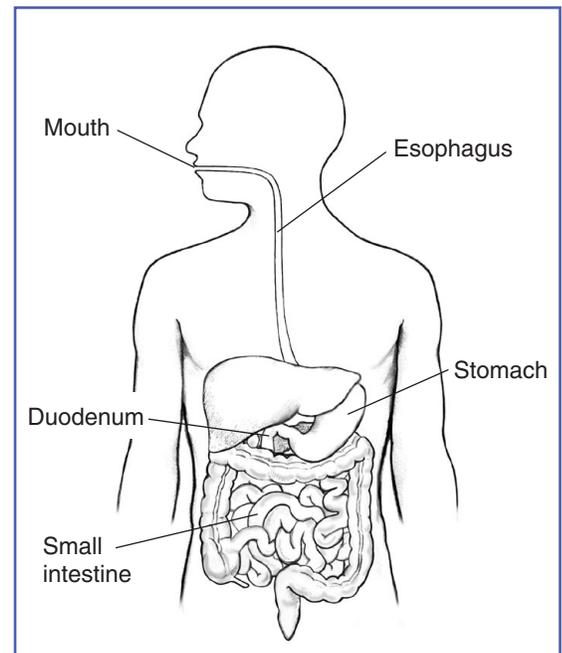
Gastritis is a condition in which the stomach lining—known as the mucosa—is inflamed, or swollen. The stomach lining contains glands that produce stomach acid and an enzyme called pepsin. The stomach acid breaks down food and pepsin digests protein. A thick layer of mucus coats the stomach lining and helps prevent the acidic digestive juice from dissolving the stomach tissue. When the stomach lining is inflamed, it produces less acid and fewer enzymes. However, the stomach lining also produces less mucus and other substances that normally protect the stomach lining from acidic digestive juice.

Gastritis may be acute or chronic:

- Acute gastritis starts suddenly and lasts for a short time.
- Chronic gastritis is long lasting. If chronic gastritis is not treated, it may last for years or even a lifetime.

Gastritis can be erosive or nonerosive:

- Erosive gastritis can cause the stomach lining to wear away, causing erosions—shallow breaks in the stomach lining—or ulcers—deep sores in the stomach lining.
- Nonerosive gastritis causes inflammation in the stomach lining; however, erosions or ulcers do not accompany nonerosive gastritis.



The upper gastrointestinal (GI) tract

A health care provider may refer a person with gastritis to a gastroenterologist—a doctor who specializes in digestive diseases.

What causes gastritis?

Common causes of gastritis include

- *Helicobacter pylori* (*H. pylori*) infection
- damage to the stomach lining, which leads to reactive gastritis
- an autoimmune response

***H. pylori* infection.** *H. pylori* is a type of bacteria—organisms that may cause an infection. *H. pylori* infection

- causes most cases of gastritis
- typically causes nonerosive gastritis
- may cause acute or chronic gastritis

H. pylori infection is common, particularly in developing countries, and the infection often begins in childhood. Many people who are infected with *H. pylori* never have any symptoms. Adults are more likely to show symptoms when symptoms do occur.

Researchers are not sure how the *H. pylori* infection spreads, although they think contaminated food, water, or eating utensils may transmit the bacteria. Some infected people have *H. pylori* in their saliva, which suggests that infection can spread through direct contact with saliva or other body fluids.

Read more in *Peptic Ulcer Disease and H. pylori* at www.digestive.niddk.nih.gov.

Damage to the stomach lining, which leads to reactive gastritis. Some people who have damage to the stomach lining can develop reactive gastritis.

Reactive gastritis

- may be acute or chronic
- may cause erosions
- may cause little or no inflammation

Reactive gastritis may also be called reactive gastropathy when it causes little or no inflammation.

The causes of reactive gastritis may include

- nonsteroidal anti-inflammatory drugs (NSAIDs), a type of over-the-counter medication. Aspirin and ibuprofen are common types of NSAIDs.

- drinking alcohol.
- using cocaine.
- exposure to radiation or having radiation treatments.
- reflux of bile from the small intestine into the stomach. Bile reflux may occur in people who have had part of their stomach removed.
- a reaction to stress caused by traumatic injuries, critical illness, severe burns, and major surgery. This type of reactive gastritis is called stress gastritis.

An autoimmune response. In autoimmune gastritis, the immune system attacks healthy cells in the stomach lining. The immune system normally protects people from infection by identifying and destroying bacteria, viruses, and other potentially harmful foreign substances. Autoimmune gastritis is chronic and typically nonerosive.

Less common causes of gastritis may include

- Crohn's disease, which causes inflammation and irritation of any part of the gastrointestinal (GI) tract.
- sarcoidosis, a disease that causes inflammation that will not go away. The chronic inflammation causes tiny clumps of abnormal tissue to form in various organs in the body. The disease typically starts in the lungs, skin, and lymph nodes.
- allergies to food, such as cow's milk and soy, especially in children.
- infections with viruses, parasites, fungi, and bacteria other than *H. pylori*, typically in people with weakened immune systems.

What are the signs and symptoms of gastritis?

Some people who have gastritis have pain or discomfort in the upper part of the abdomen—the area between the chest and hips. However, many people with gastritis do not have any signs and symptoms. The relationship between gastritis and a person's symptoms is not clear. The term “gastritis” is sometimes mistakenly used to describe any symptoms of pain or discomfort in the upper abdomen.

When symptoms are present, they may include

- upper abdominal discomfort or pain
- nausea
- vomiting

Seek Help for Symptoms of Bleeding in the Stomach

Erosive gastritis may cause ulcers or erosions in the stomach lining that can bleed. Signs and symptoms of bleeding in the stomach include

- shortness of breath
- dizziness or feeling faint
- red blood in vomit
- black, tarry stools
- red blood in the stool
- weakness
- paleness

A person with any signs or symptoms of bleeding in the stomach should call or see a health care provider right away.

Read more in *Bleeding in the Digestive Tract* at www.digestive.niddk.nih.gov.

What are the complications of chronic and acute gastritis?

The complications of chronic gastritis may include

- peptic ulcers. Peptic ulcers are sores involving the lining of the stomach or duodenum, the first part of the small intestine. NSAID use and *H. pylori* gastritis increase the chance of developing peptic ulcers.
- atrophic gastritis. Atrophic gastritis happens when chronic inflammation of the stomach lining causes the loss of the stomach lining and glands. Chronic gastritis can progress to atrophic gastritis.
- anemia. Erosive gastritis can cause chronic bleeding in the stomach, and the blood loss can lead to anemia. Anemia is a condition in which red blood cells are fewer or smaller than normal, which prevents the body's cells from getting enough oxygen. Red blood cells contain hemoglobin, an iron-rich protein that gives blood its red color and enables the red blood cells to transport oxygen from the lungs to the tissues of the body. Research suggests that *H. pylori* gastritis and autoimmune atrophic gastritis can interfere with the body's ability to absorb iron from food, which may also cause anemia. Read more about anemia at www.nhlbi.nih.gov.
- vitamin B12 deficiency and pernicious anemia. People with autoimmune atrophic gastritis do not produce enough intrinsic factor. Intrinsic factor is a protein made in the stomach and helps the intestines absorb vitamin B12. The body needs vitamin B12 to make red blood cells and nerve cells. Poor absorption of vitamin B12 may lead to a type of anemia called pernicious anemia. Read more about pernicious anemia at www.nhlbi.nih.gov.

- growths in the stomach lining. Chronic gastritis increases the chance of developing benign, or noncancerous, and malignant, or cancerous, growths in the stomach lining. Chronic *H. pylori* gastritis increases the chance of developing a type of cancer called gastric mucosa-associated lymphoid tissue (MALT) lymphoma. Read more about MALT lymphoma and gastric cancer at www.cancer.gov.

In most cases, acute gastritis does not lead to complications. In rare cases, acute stress gastritis can cause severe bleeding that can be life threatening.

How is gastritis diagnosed?

A health care provider diagnoses gastritis based on the following:

- medical history
- physical exam
- upper GI endoscopy
- other tests

Medical History

Taking a medical history may help the health care provider diagnose gastritis. He or she will ask the patient to provide a medical history. The history may include questions about chronic symptoms and travel to developing countries.

Physical Exam

A physical exam may help diagnose gastritis. During a physical exam, a health care provider usually

- examines a patient's body
- uses a stethoscope to listen to sounds in the abdomen
- taps on the abdomen checking for tenderness or pain

Upper Gastrointestinal Endoscopy

Upper GI endoscopy is a procedure that uses an endoscope—a small, flexible camera with a light—to see the upper GI tract. A health care provider performs the test at a hospital or an outpatient center. The health care provider carefully feeds the endoscope down the esophagus and into the stomach and duodenum. The small camera built into the endoscope transmits a video image to a monitor, allowing close examination of the GI lining. A health care provider may give a patient a liquid anesthetic to gargle or may spray anesthetic on the back of the patient's throat before inserting the endoscope. A health care provider will place an intravenous (IV) needle in a vein in the arm to administer sedation. Sedatives help patients stay relaxed and comfortable. The test may show signs of inflammation or erosions in the stomach lining.

The health care provider can use tiny tools passed through the endoscope to perform biopsies. A biopsy is a procedure that involves taking a piece of tissue for examination with a microscope by a pathologist—a doctor who specializes in examining tissues to diagnose diseases. A health care provider may use the biopsy to diagnose gastritis, find the cause of gastritis, and find out if chronic gastritis has progressed to atrophic gastritis. Read more in *Upper GI Endoscopy* at www.digestive.niddk.nih.gov.

Other Tests

A health care provider may have a patient complete other tests to identify the cause of gastritis or any complications. These tests may include the following:

- **Upper GI series.** Upper GI series is an x-ray exam that provides a look at the shape of the upper GI tract. An x-ray technician performs this test at a hospital or an outpatient center, and a radiologist—a doctor who specializes in medical imaging—interprets the images. This test does not require anesthesia. A patient should not eat or drink before the procedure, as directed by the health care provider. Patients should check with their health care provider about what to do to prepare for an upper GI series. During the procedure, the patient will stand or sit in front of an x-ray machine and drink barium, a chalky liquid. Barium coats the esophagus, stomach, and small intestine so the radiologist and health care provider can see these organs' shapes more clearly on x-rays. A patient may experience bloating and nausea for a short time after the test. For several days afterward, barium liquid in the GI tract may cause white or light-colored stools. A health care provider will give the patient specific instructions about eating and drinking after the test. Read more in *Upper GI Series* at www.digestive.niddk.nih.gov.
- **Blood tests.** A health care provider may use blood tests to check for anemia or *H. pylori*. A health care provider draws a blood sample during an office visit or at a commercial facility and sends the sample to a lab for analysis.
- **Stool test.** A health care provider may use a stool test to check for blood in the stool, another sign of bleeding in the stomach, and for *H. pylori* infection. A stool test is an analysis of a sample of stool. The health care provider will give the patient a container for catching and storing the stool. The patient returns the sample to the health care provider or a commercial facility that will send the sample to a lab for analysis.
- **Urea breath test.** A health care provider may use a urea breath test to check for *H. pylori* infection. The patient swallows a capsule, liquid, or pudding that contains urea—a waste product the body produces as it breaks down protein. The urea is “labeled” with a special carbon atom. If *H. pylori* are present, the bacteria will convert the urea into carbon dioxide. After a few minutes, the patient breathes into a container, exhaling carbon dioxide. A nurse or technician will perform this test at a health care provider's office or a commercial facility and send the samples to a lab. If the test detects the labeled carbon atoms in the exhaled breath, the health care provider will confirm an *H. pylori* infection in the GI tract.

How is gastritis treated?

Health care providers treat gastritis with medications to

- reduce the amount of acid in the stomach
- treat the underlying cause

Reduce the Amount of Acid in the Stomach

The stomach lining of a person with gastritis may have less protection from acidic digestive juice. Reducing acid can promote healing of the stomach lining. Medications that reduce acid include

- **antacids**, such as Alka-Seltzer, Maalox, Mylanta, Roloids, and Riopan. Many brands use different combinations of three basic salts—magnesium, aluminum, and calcium—along with hydroxide or bicarbonate ions to neutralize stomach acid. Antacids, however, can have side effects. Magnesium salt can lead to diarrhea, and aluminum salt can cause constipation. Magnesium and aluminum salts are often combined in a single product to balance these effects. Calcium carbonate antacids, such as Tums, Titalac, and Alka-2, can cause constipation.
- **H2 blockers**, such as cimetidine (Tagamet HB), famotidine (Pepcid AC), nizatidine (Axid AR), and ranitidine (Zantac 75). H2 blockers decrease acid production. They are available in both over-the-counter and prescription strengths.
- **proton pump inhibitors (PPIs)** include omeprazole (Prilosec, Zegerid), lansoprazole (Prevacid), dexlansoprazole (Dexilant),

pantoprazole (Protonix), rabeprazole (AcipHex), and esomeprazole (Nexium). PPIs decrease acid production more effectively than H2 blockers. All of these medications are available by prescription. Omeprazole and lansoprazole are also available in over-the-counter strength.

Treat the Underlying Cause

Depending on the cause of gastritis, a health care provider may recommend additional treatments.

- Treating *H. pylori* infection with antibiotics is important, even if a person does not have symptoms from the infection. Curing the infection often cures the gastritis and decreases the chance of developing complications, such as peptic ulcer disease, MALT lymphoma, and gastric cancer.
- Avoiding the cause of reactive gastritis can provide some people with a cure. For example, if prolonged NSAID use is the cause of the gastritis, a health care provider may advise the patient to stop taking the NSAIDs, reduce the dose, or change pain medications.
- Health care providers may prescribe medications to prevent or treat stress gastritis in a patient who is critically ill or injured. Medications to protect the stomach lining include sucralfate (Carafate), H2 blockers, and PPIs. Treating the underlying illness or injury most often cures stress gastritis.
- Health care providers may treat people with pernicious anemia due to autoimmune atrophic gastritis with vitamin B12 injections.

How can gastritis be prevented?

People may be able to reduce their chances of getting gastritis by preventing *H. pylori* infection. No one knows for sure how *H. pylori* infection spreads, so prevention is difficult. To help prevent infection, health care providers advise people to

- wash their hands with soap and water after using the bathroom and before eating
- eat food that has been washed well and cooked properly
- drink water from a clean, safe source

Eating, Diet, and Nutrition

Researchers have not found that eating, diet, and nutrition play a major role in causing or preventing gastritis.

Points to Remember

- Gastritis is a condition in which the stomach lining—known as the mucosa—is inflamed, or swollen.
- Common causes of gastritis include *Helicobacter pylori* (*H. pylori*) infection, damage to the stomach lining, and an autoimmune response.
- Some people who have gastritis have pain or discomfort in the upper part of the abdomen. However, many people with gastritis do not have any signs and symptoms.
- Erosive gastritis may cause ulcers or erosions in the stomach lining that can bleed. A person with any signs or symptoms of bleeding in the stomach should call or see a health care provider right away.

- A health care provider diagnoses gastritis based on a medical history, a physical exam, upper GI endoscopy, and other tests.
- Health care providers treat gastritis with medications to reduce the amount of acid in the stomach and treat the underlying cause.

Hope through Research

The Division of Digestive Diseases and Nutrition at the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) supports basic and clinical research into GI diseases, including gastritis.

Clinical trials are research studies involving people. Clinical trials look at safe and effective new ways to prevent, detect, or treat disease. Researchers also use clinical trials to look at other aspects of care, such as improving the quality of life for people with chronic illnesses. To learn more about clinical trials, why they matter, and how to participate, visit the NIH Clinical Research Trials and You website at www.nih.gov/health/clinicaltrials. For information about current studies, visit www.ClinicalTrials.gov.

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This publication may contain information about medications and, when taken as prescribed, the conditions they treat. When prepared, this publication included the most current information available. For updates or for questions about any medications, contact the U.S. Food and Drug Administration toll-free at 1-888-INFO-FDA (1-888-463-6332) or visit www.fda.gov. Consult your health care provider for more information.

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