



## Peptic Ulcer Disease

### PEPTIC ULCER BASICS

Peptic ulcer disease occurs when painful sores develop in the lining of the stomach or intestines. *Helicobacter pylori* infection is the most common cause of ulcers. Frequent or long-term use of common pain medications called non-steroidal anti-inflammatory drugs (NSAIDs) may also lead to stomach ulcers. Ulcers are often successfully treated with antibiotics and acid-blocking medicines.

### PEPTIC ULCER GLOSSARY

**Antigen:** A substance that stimulates the immune system. **Antibodies:** Part of the immune system that fights disease. **Bacteria:** Germs that cause human disease. **Duodenum:** First portion of the small intestine; connects the stomach to the small intestine. **Endoscopy:** A procedure in which the doctor inserts a small flexible tube — an endoscope — through the mouth, down the esophagus, and into the stomach and duodenum. The doctor can look through the endoscope to determine the presence of disease. **Esophagus:** A tube-like organ leading from the mouth to the stomach. **Gastritis:** Inflammation of the stomach lining. ***Helicobacter pylori* (H. pylori):** The name of a bacterium that causes disease (gastritis and ulcers) in humans. **Inflammation:** A response to tissue injury that can cause redness, swelling and pain. **NSAIDs:** Non-steroidal anti-inflammatory drugs; pain medication that fights inflammation in tissues. **Peptic:** A description relating to digestion in the upper-digestive system (stomach and small intestine). **Stomach:** A sac-like organ that connects the esophagus to the small intestine. It receives swallowed food and secretes juices high in acid to break down food. **Ulcer:** A sore or wound in the lining of the stomach or duodenum. 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.

### YOUR DIGESTIVE TRACT

Your stomach lining is a remarkably resilient membrane. A layer of mucus protects the stomach from its own acids, which begin the process of digestion. Similar mechanisms protect the duodenum (the first part of the small intestine). Some of the gastric juices involved in the digestive process are as toxic as car battery acid, so a healthy stomach and intestinal lining play a key role in your overall health. The most common stomach disease — peptic ulcer disease — occurs when the stomach acid successfully penetrates the stomach or intestinal lining and causes ulcers, an often painful sore in the lining. An estimated 4 million Americans have peptic ulcer disease, and one in 10 patients will experience the disease during his or her lifetime.

### PEPTIC ULCER DISEASE

When a type of bacteria called *Helicobacter pylori* (H. pylori) infects your stomach lining by living in or on it, it can cause an ulcer in the stomach or duodenum. The ulcer can cause abdominal pain and, in some cases, bleeding. Untreated, the ulcer can literally eat a hole in the stomach or intestinal lining — a situation that requires surgery. Chronic inflammation from an ulcer can cause stomach tissue swelling and scarring. Over time, this scarring may close the outlet of the stomach, preventing food from passing into the small intestine and causing vomiting and weight loss. In severe cases, ulcer complications can lead to death.

### CAUSES OF ULCERS

Scientists have discovered that many ulcers are caused by infection with the H. pylori bacteria — not spicy food or stress. Scientists do not know exactly how the H. pylori bacteria is transmitted, but they believe that it may spread from person to person through fecal-oral or oral-oral routes. It may also be transmitted by contaminated water sources. Another common cause of peptic ulcer disease is the regular use of pain medications called non-steroidal anti-inflammatory drugs (NSAIDs), which include aspirin, ibuprofen, naproxen, ketoprofen, meloxicam and celecoxib. People typically take NSAIDs to reduce pain and inflammation, often

for arthritis. Frequent or longtime use of NSAIDs, especially among older persons, however, can increase a person's risk of developing an ulcer.

### RISK FACTORS FOR ULCERS

You're at risk for peptic ulcer disease if you: Are 50 years old or older. Drink alcohol excessively. Smoke cigarettes or use tobacco. Have a family history of ulcer disease. You're at risk for NSAID-induced ulcers if you: Are age 60 or older (your stomach lining becomes more fragile with age). Have had past experiences with ulcers and internal bleeding. Take steroid medications, such as prednisone. Take blood thinners, such as warfarin. Consume alcohol or use tobacco on a regular basis. Experience certain side effects after taking NSAIDs, such as upset stomach and heartburn. Take NSAIDs in amounts higher than recommended on the bottle or by your doctor or pharmacist. Take several different medications that contain aspirin and other NSAIDs. Take NSAIDs for long periods of time. Your doctor may also ask you how long you've been taking NSAIDs, and about your use of acid medications or antacids and prior or current diseases, such as heart disease.

### SYMPTOMS OF PEPTIC ULCER DISEASE

The most common symptom of an ulcer is a burning pain in your stomach between your breastbone and your belly button. You will often feel this pain when your stomach is empty, between meals generally, but it can occur at any time. The pain will last anywhere from a few minutes to several hours and may sometimes wake you in the middle of the night. Stomach pain is often reduced by food, fluids or taking antacids. While not as common as stomach pain, other symptoms include: Nausea. Vomiting. Vomiting blood. Blood in the stool. Loss of appetite. When an ulcer bleeds without treatment, a person may become anemic (low blood count) and weak. The symptoms of NSAID-induced ulcers are typically less noticeable to patients and may appear suddenly.

### TESTS FOR PEPTIC ULCERS

If you have symptoms of peptic ulcer disease, call your gastroenterologist and schedule an appointment as soon as possible. Your doctor may give you one of several tests to determine if you are infected with H. pylori, such as a simple breath, blood or stool test. In this case, your doctor may send your breath, blood or stool sample to be tested for evidence of the bacteria. The doctor may give you an X-ray test called an upper-GI (gastrointestinal) series. You will be given a contrast liquid to drink called barium, a thick, white, milkshake-like liquid. Barium coats the inside lining of the esophagus, stomach and small intestine, and makes them easier to see clearly on X-rays. The radiologist can also see ulcers, scar tissue or areas where something is blocking the normal path of food through the digestive system. Barium tests should not be used if there is a suspicion of an infectious cause for your gastrointestinal symptoms, until the appropriate diagnostic tests have been obtained. Your doctor may also suggest an endoscopy, which is the most accurate test. In this test, the doctor inserts a small flexible tube through your mouth and into the stomach. The tube has a camera inside that allows the doctor to detect the ulcer and look for the presence of the infection. The doctor can take small samples (biopsies) from your stomach lining to be tested for the presence of H. pylori. You will be sedated during this procedure. During endoscopy your doctor will be able to see if an ulcer is present in the stomach or duodenum and treat it if it is bleeding.

### TREATMENT FOR ULCERS

If you have been diagnosed with H. pylori infection, your doctor will prescribe one or two bacteria-killing antibiotics (such as amoxicillin, tetracycline, metronidazole or clarithromycin), a medication that contains bismuth, and another medicine to reduce the acid in your stomach. Antibiotics and acid-blocking medications can often cure these ulcers if they have not progressed significantly. Generally, the antibiotic therapy is given for one to two weeks. It is important to take the medicine until you have finished it. You should also avoid taking NSAIDs such as aspirin, ibuprofen, naproxen, ketoprofen, meloxicam and celecoxib. During and after your treatment,

avoid alcoholic beverages and cigarettes, as smoking inhibits ulcer healing. Once the medicine has eliminated the ulcer, there is a 90 percent chance that the disease is completely cured.

### **WILL I NEED SURGERY?**

With proper treatment, surgery is usually not necessary. However, you may need surgery if an ulcer fails to heal, if you have bleeding complications, or if a perforation (hole) or obstruction in the stomach develops. If you have surgery, the surgeon may remove the ulcer altogether or "oversew" it with tissue taken from another part of the intestine. Other options include tying off the bleeding artery or cutting off the nerve supply to the stomach to reduce the formation of stomach acid. Fortunately, surgical therapy is rarely needed because of the efficacy of medical treatment.

---

### **PREVENTION OF PEPTIC ULCER DISEASE**

Since the source of H. pylori infection is not yet known, no definitive recommendations have been made for preventing peptic ulcer disease. However, it is always wise to wash your hands thoroughly, eat food that has been properly prepared and drink water from a clean, safe source. If you have a history of ulcers or if you develop stomach discomfort, you may reduce your risk of NSAID-induced ulcers by: Knowing your risk-factors. Trying a different NSAID. Reading medication labels and following instructions. Adjusting your dose and frequency. Substituting alternative pain-relief medications for the NSAID. Discussing with your doctor ways to protect your stomach while getting pain relief. Avoiding or limiting your use of alcohol when taking pain medications. Talking to your doctor about pain that does not go away.

---

### **HOPE FOR THE FUTURE**

Eventually, we will understand how H. pylori is spread and how to prevent this infection. In the meantime, the good news for patients with peptic ulcer disease is that antibiotics and medications provide very effective treatment for the infection.