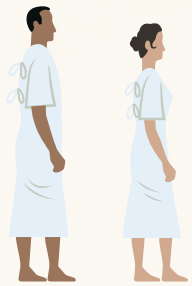
Helicobacter pylori

INFORM DIAGNOSTICS

What is *Helicobacter pylori (H. pylori)*?

H. pylori is a bacterium that causes chronic inflammation (infection) in the stomach and duodenum (the first portion of the small intestine). This spiral-shaped bacteria infects the lining of the stomach and thrives in the mucous environment. It is common worldwide and especially impacts the elderly, the very young, and those in Third World countries where sanitation is problematic. However, just because a person has been exposed to *H. pylori* doesn't mean they will be affected by its presence. Often *H. pylori* does not cause any symptoms.



How this bacteria affects billions

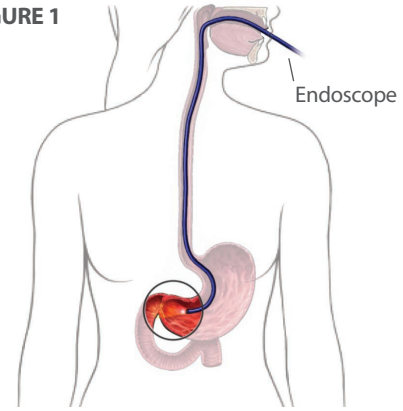
Scientists report that *H. pylori* gastritis is still the most common chronic infection in humans—affecting nearly two-thirds of the world's population and approximately 50 percent of people in the United States. It is not known how people contract this infection, and many people have had the bacteria since childhood. *H. pylori* produces an enzyme that destroys the natural protection of the stomach against a patient's strong digestive acids. Over time, this corrosive activity causes ulcers to form, and in some cases, may cause gastric cancer and other serious problems.

What are the effects and complications of *H. pylori*?

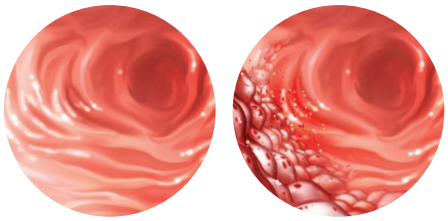
For many years, physicians thought ulcers in the upper gastrointestinal tract were related to stress, "Type A" personality, and use of aspirin and other over-the-counter pain relievers, called NSAIDS (nonsteroidal anti-inflammatory drugs), commonly used for arthritis and other conditions. Recently researchers have discovered that *H. pylori* is actually the cause for many, if not most ulcers. An ulcer is a defect in the lining of an organ, in this case the stomach or duodenum. The most common ulcer symptom is dull or burning pain that occurs between meals when the stomach is empty, which may come and go, and can last from minutes to hours. Sometimes ulcers may bleed. If the bleeding is heavy, blood may appear in vomit or bowel movements, which may appear dark red or black.

H. pylori also can cause a painful inflammation of the stomach called gastritis. The symptoms of gastritis are upper-abdominal burning/pain, bloating, and discomfort.

FIGURE 1

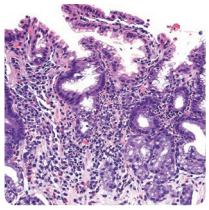


View through endoscope



Normal | *H. pylori* gastritis

The image shows inflammation of the glands lining the stomach. The inflammatory cells are dark and small.



Long-term infection of the stomach with this bacterium may lead to chronic atrophic gastritis (inflammation and damage to the lining of the stomach), which in turn is a risk factor for pre-cancerous changes and cancer of the lining of the stomach. *H. pylori* infection also is associated with another type of stomach cancer involving white blood cells, called lymphoma. Despite these risks, the vast majority of people who carry this bacterium in their stomachs never develop cancer.

How is *H. pylori* diagnosed at the lab?

Healthcare providers have several ways to diagnose *H. pylori*.

Blood test — The healthcare provider sends a sample of the patient's blood to a pathology lab to confirm if *H. pylori* is present.

Breath test — In this test, the patient drinks a special liquid, and in less than an hour, a sample of the breath is tested for a chemical reaction caused by *H. pylori*.

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Endoscopy — While the patient is sedated, a small tube with a camera inside is inserted through the mouth or nose and passed into the stomach to look for inflammation and ulcers (See Figure 1). During the procedure, a biopsy, or small sample of the stomach lining, can be obtained. This biopsy will be examined under a microscope by a surgical pathologist (a doctor specialized in the diagnosis of disease), preferably one specializing in gastrointestinal pathology, and a diagnosis of *H. pylori* infection or other unexpected abnormality can be established or excluded.

At Inform Diagnostics, difficult and unusual cases are reviewed together by subspecialist pathologists at a large multi-headed microscope to ensure the most accurate and definitive diagnoses. The pathologist creates a pathology report with all the important findings, including critical information to help guide treatment and assess prognosis, which is sent back to the healthcare provider.

How is *H. pylori* infection treated?

Recent studies suggest that treating *H. pylori* when ulcers are not present may actually worsen reflux disease. The *H. pylori* bacteria create a buffer zone around themselves that allows them to live in the highly acidic environment of the stomach. Medication given to eradicate *H. pylori* alone can interfere with that buffering base, causing patients to experience more reflux symptoms. If ulcers are present, a regimen of antibiotics are given to kill the bacteria and allow the ulcer to heal. Treatment with antibiotics actually can cause regression of some of the lymphomas that occur in these patients.

A number of antibiotic and acid-reducing treatments are used to relieve ulcer pain and to kill the pathogen that causes ulcers. A "triple-therapy" using three different medicines is a standard treatment that has a high cure rate for *H. pylori* infection. This includes the antibiotic clarithromycin, a proton pump inhibitor (PPI) and either antibiotic metronidazole or amoxicillin. Patients take these medicines for two weeks and then are retested to make sure the bacteria is completely eliminated.

Once the *H. pylori* has been eliminated from the patient's system, their condition can begin to heal, they will feel better, and they should have no recurrence of the infection. It is essential for the patient to take all the medicines as prescribed, and to talk to their healthcare provider if they experience any problems.

Learn more!

These resources provide more information about *H. pylori*.

digestive.niddk.nih.gov/ddiseases/pubs/hpylori/index.aspx#3

patients.gi.org/topics/peptic-ulcer-disease/

www.helico.com/?q=TreatmentForHelicobacterPylori

Headquartered in Irving, Texas, **Inform Diagnostics** is a premier national provider of the highest-quality anatomic pathology services, primarily in the fields of breast pathology, dermatopathology, hematopathology, gastrointestinal pathology, and urologic pathology. The company's pathologists—all fellowship-trained subspecialists—utilize state-of-the-art laboratories. Inform Diagnostics continuously improves diagnostic precision through a unique consensus approach, rigorous quality assurance, comprehensive expertise, ongoing education and research, and close relationships with clinician clients.
Find more patient information and resources on our website at www.InformDiagnostics.com.