


Helicobacter Pylori (*H. pylori*) Infection

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Overview

Helicobacter pylori (*H. pylori*) is a spiral shaped bacteria that lives in the mucous lining of the stomach to protect itself from the harsh acid environment. It is estimated that at least one-half of the world's population has it. The rate of infected individuals varies between countries and even within one country.

Most individuals infected with H. pylori will not experience any signs or symptoms. However, *H. pylori* can cause a range of digestive issues that can be mild to life-threatening. Why certain individuals have symptoms, and some do not, remains unknown. The most common serious complications related to *H. pylori* include stomach or duodenal ulcers (peptic ulcer disease) and stomach (gastric) cancer.

Symptoms

People with *H. pylori* infection can develop common gastrointestinal discomfort that will warrant further routine testing.

Common symptoms include:

- An ache or burning pain in the upper abdomen.
- Abdominal pain that is worse on an empty stomach.
- Nausea.
- Loss of appetite.
- Frequent burping.
- Bloating.

Symptoms that are cause for alarm and require an immediate appointment with your healthcare provider include:

- Unintentional weight loss.
- Severe abdominal pain.
- Difficulty swallowing.
- Bloody or black tarry stools.
- Bloody, or grainy black vomit.

Who should be tested for H. Pylori?

If you have symptoms

Testing is recommended if you have any of the listed symptoms.

If you don't have symptoms

Testing can be considered if you have the following risk factors.

- Family history of peptic ulcer or gastric cancer.
- Family members living in your household who have been diagnosed with an *H. pylori* infection.
- Regular use of nonsteroidal anti-inflammatory drugs (NSAIDs).
- You belong to a high-risk group (e.g., in the United States, Latino and African American, and other racial or ethnic groups).
- You are a first-generation immigrant from a country where *H. pylori* is common.

If your medical history includes:

Testing should be considered if you have the following risk factors.

- Sensation of indigestion
- Gastric or duodenal ulcers
- Gastric mucosa-associated lymphoid tissue (MALT) lymphoma – A rare type of stomach cancer
- Idiopathic thrombocytopenia (ITP) – A blood disease that leads to low platelet count in the blood

Diagnosis

A wide variety of methods are available to detect *H. pylori* infection. Your healthcare provider will help you decide which one is the best for you.

Endoscopy-based testing

One common option is a simple procedure called an endoscopy that investigates the stomach. A long flexible tube called an endoscope is placed into the mouth, down the esophagus, and into the stomach and beginning of the small intestine. This tube has a camera and light on

the end which allows your healthcare provider to see inside your gastrointestinal tract during the test.

Tissue samples can then be collected for *H. pylori* testing.

- **Histology** – The sample is examined under a microscope by a pathologist to look for *H. pylori* bacteria.
- **Rapid urease test** – A chemical-based test is applied to the sample.
- **Culture** – The sample is put in a special culture dish. If *H. pylori* bacteria are present in the sample, they may grow. The problem is that *H. pylori* is not easy to grow in the lab, so this test is only used in those with cases that are resistant to treatment.

Non-invasive testing

Many healthcare providers will recommend a non-invasive test that does not require an endoscopy.

- **Urea breath test** - You will drink a specialized solution containing a substance that is broken down by the *H. pylori* bacteria. The breakdown products can then be detected in your breath.
- **Stool test** – A sample of the individual's bowel movement is collected and tested for excreted *H. pylori* proteins. This can be done at home, in the healthcare provider's office, at a medical clinic or hospital.

Treatment for *H. pylori* Infection

No single drug cures an *H. pylori* infection. Most treatment regimens involve taking 2-4 medications at the same time for 14 days. They can be prescribed separately or in prepackaged combinations to make it easier for you to take. Your healthcare provider will help you decide which one is the best for you.

Medications used in these combinations can include:

Antacids

- **Proton pump inhibitors (PPI)**
Proton pump inhibitors (PPIs) are the most commonly prescribed class of medication for the treatment of heartburn and acid-related disorders. They work by blocking the site of acid production in the parietal cell of the stomach. Examples: omeprazole, esomeprazole, lansoprazole, rabeprazole, pantoprazole, dexlansoprazole
- **Bismuth subsalicylate or bismuth subcitrate**
Bismuth subsalicylate is an antidiarrheal and anti-inflammatory agent used to treat nausea, heartburn,

indigestion, upset stomach, diarrhea. Example: Pepto-Bismol™

- **Potassium-competitive acid blockers**
Potassium-competitive acid blockers block acid secretion in the stomach. Example: Vonoprazan

Antibacterial

- **One to three different antibiotics**
Antibiotics are medicines that fight infections caused by bacteria in humans and animals by either killing the bacteria or making it difficult for the bacteria to grow and multiply. Examples: amoxicillin, clarithromycin, tetracycline, metronidazole, levofloxacin, rifabutin

Side effects during treatment

Up to half of all patients will report side effects while taking *H. pylori* treatment.

Side effects are usually mild, and fewer than 10 percent of patients stop treatment because of side effects.

For those who do experience side effects, it may be possible to adjust the dose or timing of medication, so you should immediately contact your healthcare provider if that happens.

Prepackaged Treatment Combinations

- **Helidac®** is a combination package of bismuth subsalicylate and two antibiotics (metronidazole and tetracycline), taken together with a PPI.
- **Pylera®** contains bismuth subcitrate and two antibiotics (metronidazole and tetracycline) in the same capsules, again taken with a PPI.
- **Talicia®** is a combination of two antibiotics (rifabutin and amoxicillin) and a PPI requiring no additional pills.
- **Voquenza™ Dual Pak™** contains Vonoprazan and one antibiotic (amoxicillin).
- **Voquenza™ Triple Pack™** is a combination of Vonoprazan and two antibiotics (amoxicillin, clarithromycin).

Follow up

After finishing treatment, it is important to follow up with a breath or stool test to make sure the *H. pylori* is cured. Up to 20 percent of patients are not cured after

completing their first course of treatment. Retreatment with alternative medications may be required.

Recrudescence or Reinfection

The same individual can have an *H. pylori* infection more than once. This generally occurs as either recurrence of the initial infection (recrudescence) or infection with a completely new type of *H. pylori* (reinfection).

Recrudescence is the recolonization of the same strain within 12 months after effective treatment.

Reinfection is the colonization with a new strain, more than 12 months after effective treatment.

In more affluent countries, recrudescence is more common than reinfection. In developing countries, reinfection is more common, with a significant chance of infection that continues for the rest of the individual's life.

How is *H. Pylori* spread?

H. pylori is spread by consuming food or water contaminated with the bacteria. Both children and adults can become infected with *H. pylori* bacteria; however, children are at a greater risk of getting an *H. pylori* infection.

Individuals who live in crowded conditions, lack clean water, or have unsanitary living conditions are at a greater risk for getting *H. pylori*.

Conclusion

H. pylori is one of the most common human infections. It is a common cause of inflammation in the stomach (gastritis), peptic ulcers, gastric cancer, and unexplained upper gastrointestinal symptoms. There are blood, breath, stool, and endoscopic tests to identify this infection. Treatments consist of a 2-4 drug regimen given for up to 14 days. Patients treated for *H. pylori* should undergo a follow up test 4 weeks after the course of treatment to determine if it was successful.

About IFFGD

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