

Helicobacter pylori

What is *Helicobacter pylori*?

Helicobacter pylori (*H. pylori*) is a bacterium (germ) that can infect the human stomach. The bacterium lives in the lining of the stomach, and the chemicals it makes inflame the stomach lining. Infection seems to be lifelong unless it is treated with medication to remove the bacterium. There are often no symptoms of the infection, but treating it lowers your risk of other more severe health problems.

How do I catch *H. pylori*?

Most people with *H. pylori* were likely to be infected in childhood through person-to-person contact. It is rare to be infected as an adult. It is unclear how people get infected, but some possible ways are sharing food or eating utensils, coming into contact with contaminated water (such as unclean well water), or through contact with the stool (poo) or vomit of an infected person. *H. pylori* has been found in the saliva of some infected people, which means infection could be spread through direct contact with saliva. There is no evidence that pets or farm animals are sources of infection.

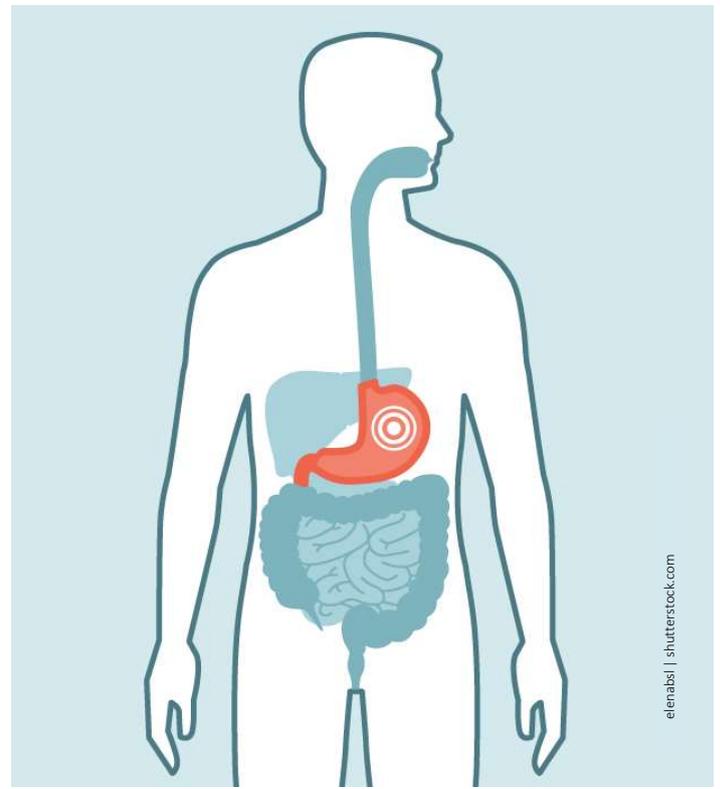
Can *H. pylori* infection be prevented?

An improvement in standards of home hygiene last century led to a noticeable drop in *H. pylori* in Western countries. As no one knows exactly how *H. pylori* spreads, it is hard to prevent it in any individual person. Researchers are trying to develop a vaccine to prevent, and cure, *H. pylori* infection. To help prevent infection, doctors advise people to follow good hygiene practices:

- Wash 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.

How common is *H. pylori* infection?

H. pylori is the most widespread infection in the world, affecting half the world's population. Infection rates are higher in some countries than others, with up to 80% of middle-aged adults in developing countries in Asia, South America, Eastern Europe, and the Middle East having the infection.



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In Australia, the infection is now much less common than in the past, particularly in younger people. About 40% of Australians older than 60 years have *H. pylori*. The infection is more common in Indigenous communities than in non-Indigenous Australians. *H. pylori* is also more common in some migrant communities, particularly in people from Middle Eastern, Asian and Eastern European countries. There is no difference in the rate of infection between men and women.

What diseases does *H. pylori* cause?

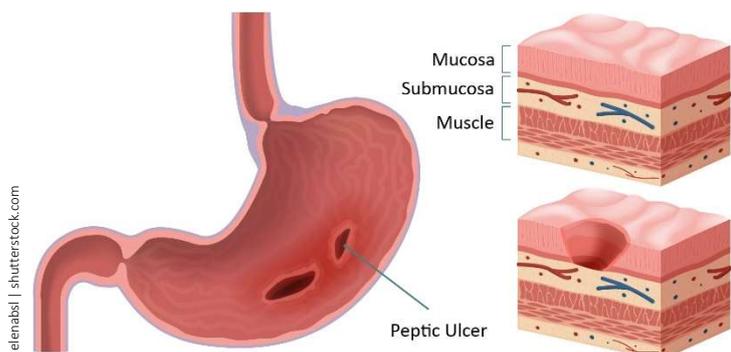
Most people infected with *H. pylori* never have any symptoms or disease. However, *H. pylori* can cause severe disease, with the most important being peptic ulcers and stomach cancer. We don't know why the bacterium causes ulcers or cancer in some people and not in others. Other conditions caused by *H. pylori* include gastritis and dyspepsia.

Peptic ulcers

A peptic ulcer is a break or sore in the inner lining of the stomach (a 'gastric ulcer') or the duodenum, which is the first part of the small bowel (a 'duodenal ulcer'). *H. pylori* is the most common cause of peptic ulcers worldwide,

causing about 70% of stomach ulcers and 90% of duodenal ulcers. Most other ulcers are likely caused by medications, particularly non-steroidal anti-inflammatory drugs (NSAIDs), like ibuprofen, or low-dose aspirin. If someone has *H. pylori* infection, the chance they will develop an ulcer during their lifetime is about 10 to 20%.

Modern anti-ulcer drugs heal nearly all duodenal and stomach ulcers, but if the *H. pylori* is not removed, there is a very high chance that the ulcer will come back. If *H. pylori* infection is cured, the risk of the ulcer returning is very low, unless the person continues to take aspirin or NSAIDs.



Paracetamol does not cause ulcers and is a safe alternative medicine for patients who have had an ulcer.

Cancer of the stomach

H. pylori infection increases the risk of cancers of the stomach, including adenocarcinoma and a rarer type of cancer called MALT lymphoma. Only a very few people with *H. pylori* infection (about 1%) will develop stomach cancer. Stomach cancer is rare in people younger than 60 years. The risk of stomach cancer is higher in people with a family history of gastric cancer.

Gastritis

H. pylori often causes inflammation of the stomach, or 'gastritis'. This doesn't usually cause symptoms. While the inflammation will go away when the infection is treated, a few people have changes that linger after treatment, such as 'intestinal metaplasia' (a change to the cells in the stomach lining), that may need long-term follow-up with a doctor.

Non-ulcer dyspepsia

'Dyspepsia', also known as indigestion, refers to pain or discomfort in the upper abdomen (belly). Most people with dyspepsia don't have an ulcer; instead, they have 'non-ulcer' dyspepsia. This is a very common problem with many possible causes. Some of these people have *H. pylori* infection, but treatment to get rid of the *H. pylori* doesn't always help to get rid of the symptoms.

How is *H. pylori* diagnosed?

There are accurate and simple tests to detect *H. pylori* infection:

1. Breath test

An *H. pylori* breath test, also called a urea breath test, shows if you are infected by analysing a sample of your breath. A breath test is accurate, safe, simple and quick to do. It is a particularly useful test to see if you have active infection or to check whether an infection has been successfully treated. The result of a breath test will usually be negative by a month after successful treatment. The test's accuracy is lower if you have been taking some medications, including antibiotics, in the previous month, or some ulcer-healing drugs in the past 1 to 2 weeks.

2. Blood test

A blood test can detect current or previous infection. Although it is useful to see if you have *H. pylori*, it is not useful for checking whether an infection has been successfully treated because the antibody to *H. pylori* (which shows the body's response to infection) remains in your blood for many months or years.

3. Endoscopy

H. pylori infection can be found during a test called an endoscopy (also known as a gastroscopy). During an endoscopy, your doctor passes a flexible tube into your stomach, which allows small biopsy samples to be taken. *H. pylori* can be found in one of several ways – including using a chemical reaction ('rapid urease test') done at the same time as the endoscopy, looking at biopsy samples under a microscope or, occasionally, by growing the bacterium in the laboratory. You may get a false negative result if the sample that is taken misses the *H. pylori* or if you have recently used antibiotics or drugs that treat ulcers.

4. Stool antigen test

It is also possible to check for *H. pylori* using a stool sample from a bowel motion. This method is used to check infection in children.

Who should be tested for *H. pylori*?

1. People with a peptic ulcer

Everyone with a stomach or duodenal ulcer should be tested for *H. pylori* and treated if they are infected. This includes people with active ulcers and those who have had an ulcer in the past, as well as people who were taking aspirin or anti-arthritis drugs when the ulcer developed.

2. People with non-ulcer dyspepsia

Treatment may or may not cure the dyspepsia, but it may be used to lower your chance of getting ulcers or stomach cancer in the future.

The side effects and cost of treatment need to be weighed against the possible benefits. For instance, the possible side effects might outweigh the possible benefits in an elderly, fit person with no symptoms.

3. People with a family history of stomach cancer

4. People who have had treatment for *H. pylori*

How should *H. pylori* be treated?

It is generally recommended that *H. pylori* should be removed if you have gastritis caused by *H. pylori* or other complications from the infection. Successful treatment will speed up healing of an ulcer and stop ulcers from coming back. It also lowers your risk of gastric cancer.

Treatment with a single drug is highly likely not to work, so a combination of at least three drugs is used. This involves a combination of acid-lowering medication and antibiotics. The most effective drug combinations work in 80 to 90% of people. The success rate is much lower if the drugs are not taken exactly as directed.

The treatment that is recommended to be tried first in Australia is a triple-drug combination of esomeprazole plus two antibiotics – amoxicillin and clarithromycin. The first course of treatment is usually for 7 days. For patients who can't take penicillins, an alternative treatment will be used.

Standard treatment for *H. pylori* may not work in up to 10% of people. If the initial treatment does not work, your doctor may refer you to a specialist gastroenterologist, who can guide your treatment and access particular medications.

Side effects, like nausea, changes to your sense of taste, diarrhoea, or skin rashes, can happen with each of these medications, or from interactions with other medications.

Some people taking metronidazole or tinidazole have an unpleasant reaction to alcohol while they are taking these antibiotics, so people are advised not to drink alcohol while taking these medications. Very rarely, there may be more serious side effects, such as bacterial infection of the large bowel ('pseudomembranous enterocolitis') or an allergic reaction with a sudden drop in blood pressure (anaphylaxis). Before you start treatment, it is important to tell your doctor if you have ever had any side effects to antibiotics.

How do I know if the treatment has worked?

If you take the treatment exactly as directed, the chance of successful treatment is high, but not 100%. You will generally have a test, usually a breath test, at least 4 weeks after finishing treatment to check whether *H. pylori* has been removed. If you have not had a serious complication of ulcer disease, it is usually important to not use any anti-ulcer treatment for at least 2 weeks before having this test. If you need to have another endoscopy, it is very simple to look for *H. pylori* using one of the other tests described above.

If the treatment has not worked, your doctor may try a different combination of drugs.

Am I likely to become infected again?

No. Once you have successfully removed *H. pylori*, the risk of being infected again is very low (only about 0.5 to 1.0% per year). This is because most infections are picked up in childhood.

Do my family members need to be tested if I am infected?

This isn't usually recommended. Occasionally there are special circumstances, and this can be discussed with your doctor.

Further questions

If you have further questions, talk to your doctor.

Acknowledgements

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