



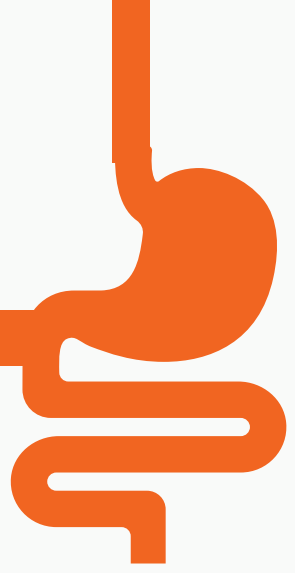
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Endoscopy

Gastrointestinal Medicine

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The Centre for GI Health

HELICOBACTER PYLORI

In 1982, two Australians – Robin Warren and Barry Marshall – presented their first observations of strange bacteria living in the human stomach.

They went on to propose that these bacteria subsequently called *Helicobacter pylori* caused a common condition called gastritis, which is essentially inflammation of the stomach.



WHAT IS IT?

Helicobacter pylori (*H. pylori*) is a bacterium that lives in the lining of the stomach.

HISTORY

This radical suggestion was not well received by doctors at the time but is now universally accepted and earned the two pioneering Australians the Nobel prize in medicine in 2005.

These bacteria, which became known as *Helicobacter pylori* (*Hpylori*), look like curved rods with a bank of structures called flagella at one end. These flagella beat like arms to propel the bacteria around the stomach. Around half the world's population is infected with *Helicobacter pylori*, although this varies between countries and age groups, with the highest rate among the elderly and about 15% of Australians are infected.

Helicobacter pylori normally infect the stomachs of children where untreated they stay forever. In developed countries such as Australia, *Helicobacter* appears likely to be spread from mouth to mouth and mother to child

TRANSMISSION

It's not fully understood how people get infected with *H. pylori*. Most people become infected as children, but you can also be infected as an adult. *H. pylori* is mostly transmitted from person to person within families, or sometimes in day care.

It may be spread if infected people don't wash their hands after a bowel movement, or through kissing and other close contact. With improvements in basic hygiene there has been a decrease in *H. pylori* in the developed world.

Once *Helicobacter pylori* is living in the stomach lining, it will be there for life, unless it is treated with specific antibiotics.

SYMPTOMS & CONDITIONS

Nearly everyone who is infected with *H. pylori* develops gastritis (inflammation of the lining of the stomach) but not all patients show symptoms. When there are symptoms, it is known as *H. pylori*-associated dyspepsia and may include:

- indigestion
- burping
- nausea and/or vomiting
- bloating
- loss of appetite
- feeling full

If you are infected with *H. pylori*, you are more likely than other people to develop ulcers in the stomach or duodenum (the first part of the small intestine).

Chronic inflammation from *H. pylori* may also increase the risk of cancer of the stomach (gastric) cancer.

Gastric adenocarcinoma is the fifth most common cause of death due to cancer in the world and claims around 1200 Australian lives each year. At least 90% of these cancers are thought to be caused by *Helicobacter pylori* in association with genetic abnormalities that develop in stomach cells as a result of constant and severe gastritis caused by this microbe.

Fortunately, treating and removing *H. pylori* infection heals most cases of gastritis as well as peptic ulcers and reduces the risk of stomach cancer.

H. pylori infection also causes most cases of an uncommon disease called gastric mucosa-associated lymphoid tissue (MALT) lymphoma – a slow-growing lymphoma that starts in the stomach.

If the *H. pylori* infection is treated successfully when the lymphoma is low grade, there is often regression of the lymphoma, meaning that it gets smaller, and may even be cured.

DIAGNOSIS

There are several ways H. pylori can be detected. Your doctor will request the right tests for you, which might include:

1. A special breath analysing test
2. A blood test looking for antibody formation
3. A stool (poo) sample looking for H pylori antigen
4. An upper gastrointestinal endoscopy with tissue biopsy of the stomach lining to check for the germs presence under a high powered microscope

1. BREATH TEST

A breath test involves drinking water and swallowing a capsule containing a small amount of safe medically approved radioactive urea. H. pylori breaks down urea in the stomach to produce carbon dioxide. After about 10 minutes you will be asked to blow into a balloon that catches your breath for analysis by the laboratory.

The amount of radioactivity in the capsule is very small – less than the background radiation you would be exposed to during a normal day.

3. STOOL SAMPLE

A stool sample detects proteins from H. pylori in your stool indicating an infection.

Your doctor can advise whether you would benefit from testing and treatment, based on your medical history and background.

2. BLOOD TEST

A blood test looks for antibodies to H. pylori but is not the first choice of test as a person may still have antibodies after an infection has been treated and the bacteria eradicated.

4. ENDOSCOPY

An endoscopy (where a thin tube is inserted down your oesophagus) to examine your stomach and do a biopsy would only be suggested in certain circumstances, such as when a person has a strong family history of gastric cancer or has symptoms.

TREATMENT

If you are diagnosed with H. Pylori after having a test, you will be offered eradication therapy – a combination of medicines designed to kill the H. pylori bacteria.

Eradication therapy is a mix of antibiotics and acid-suppressing medicine, known as triple therapy. The antibiotics eradicate the H. pylori bacteria, and the acid-suppressing medicine reduces stomach acid, so any ulcers that may be present can heal.

After you have taken the eradication therapy for the prescribed time (usually a week), you will likely be offered a breath test to make sure the treatment has worked. This test should only be conducted a month after completing treatment.

If you were diagnosed with a stomach ulcer caused by H. pylori, then eradicating H. pylori will allow your existing ulcers to heal and help prevent more ulcers from developing. Once H. Pylori has been successfully eradicated, your risk of being reinfected again is very low.

It's important to take the eradication therapy medicines as directed by your doctor and to finish the full course to ensure the best opportunity of successfully clearing the infection.

In a small number of people, the first attempt at eradication therapy may fail due to antibiotic resistance. In this case, a “rescue” eradication regime may be required and organised by your treating doctor, this treatment is generally not available as a PBS item and will need to be compounded. Please let your doctor know of any allergies.

PREVENTION

Most people who have H. pylori are infected in early childhood, but there is still limited evidence about what strategies would help prevent transmission of H. pylori. Within a population, high density living, lack of sanitation and low hygiene are reported to increase the risk of being infected with H. pylori.