

HELICOBACTER PYLORI

Helicobacter pylori (which is written in an abbreviated form as *H.pylori*) are a form of bacteria, a bud or germ, that lives in the sticky fluid (mucus) which coats the lining of the human stomach and duodenum. It is usually a life long infection and may cause no problems. However, it is often associated with peptic ulcer.

What is a Peptic Ulcer

Peptic ulcers look like mouth ulcers. They are sensitive raw patches in the lining of the stomach or duodenum (the part of the gut immediately after the stomach).

Research has shown that *H.pylori* is an important cause of peptic ulcers

What are Gastric and Duodenal Ulcers?

Gastric ulcers are ulcers in the stomach and duodenal ulcers are those of the duodenum.

Where does *H.pylori* Come From?

H.pylori is a germ that can only infect human beings. Animals have similar bacteria, but they cannot infect humans. Hence, *H.pylori* must pass from person to the next.

How do we get infected with *H.pylori*?

It is still not certain how this germ moves from the stomach of one person to the next. These bacteria are rarely detected in saliva, gastric juice or stools. The latest theory is that people may be highly infectious for only a matter of days or weeks - and transmission may be via the fingers when coming into contact with infected vomit or stools. Good hygiene in the home seems to decrease transmission.

How long does *H.pylori* Infection Last?

This is a life long infection for most people. Without medical help, the infected person seems incapable of getting rid of it. Long term infection, perhaps for up to 50 years can result in loss of the stomach's layer of mucus. At that stage, the infection disappears in some people.

Where does *H.pylori* Live in the Stomach?

The normal human stomach has a very thin layer of mucus that coats the whole of its inside surface. This mucus has a protective role, acting as a barrier between the acid in the stomach and the sensitive stomach wall. The duodenum can also have this type of mucus, particularly if the stomach secretes a great deal of acid and in these people *H.pylori* can also survive in the lining of the duodenum. *H.pylori* has become adapted to live exclusively in this layer of mucus.

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How Many People Are Infective With *H.pylori*?

In Britain about half the population over middle age is infected with *H.pylori*. It seems likely that most people get infected in childhood. Probably, almost all of our grandparents were infected with these bacteria but, because of improved hygiene in the modern home, very few children are now infected in Britain. Unfortunately, most children in the developing world still get infected. This means that almost everybody in these countries has a chronic infection with *H.pylori*.

What Does *H.pylori* Do

H.pylori acts as an irritant to the lining of the stomach and this causes inflammation of the stomach (gastritis). *H.pylori* also appears to be important in the development of peptic ulceration. A combination of factors (including *H.pylori*, gastric acid, genetic background, use of aspirin or drugs for arthritis and cigarette smoking) may combine to cause ulcers of the stomach or duodenum. It is possible that small proportion of people who are infected develop a cancer of the stomach in later life. This is probably because of chronic irritation to the lining of the stomach throughout decades of long-term infection. There is no evidence at present that eradication of *H.pylori* in adults will reduce the risk of gastric cancer.

How do we know *H.pylori* is an Important Cause of Peptic Ulcers?

Without treatment, almost every ulcer sufferer experiences repeated episodes of painful ulceration. However, such relapses become extremely rare if *H.pylori* is cleared from the stomach by medical treatment. Eradicating *H.pylori* infective can give a permanent cure of most gastric and duodenal ulcers.

How Can *H.pylori* Infection be detected?

When you are infected with *H.pylori*, you will produce antibodies to fight against these bacteria. It is possible to detect these antibodies by a blood test either using a finger prick or a larger blood sample. The bacteria can also be discovered by taking a sample (biopsy) of the lining of the stomach during endoscopy. This is a procedure in which a flexible instrument is passed into the stomach so that its lining can be seen. A biopsy can be taken and sent for testing in the laboratory. There is also a rapid urease test in which the endoscopist will perform an immediate analysis in the endoscopy room. Finally, a breath test (the 13C or 14C Urea Breath Test) may be used. This test involves swallowing a harmless substance that will be broken down in the stomach, if bacteria are present. The breakdown products are detected in the breath. This Urea Breath Test probably provides the most accurate assessment as to whether or not *H.pylori* is in the stomach. It is very useful in proving whether treatment has eradicated the infection.

How Can a Person Get Rid of *H.pylori* Infection?

H.pylori is a bacterium and it should respond to antibiotics. Unfortunately, the bacteria have proved very difficult to clear from the human stomach. This is probably because it is hard to get high concentrations of an antibiotic into the mucus that lines the stomach. Most treatments involve

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swallowing several different types of tablet simultaneously for 7-28 days. These will include one or two antibiotics and also a drug, which controls acid secretion and/or contains bismuth. Almost all *H.pylori* infections can be eradicated if the course of treatment is completed. However, the treatment may cause a range of side effects - particular abnormal taste, nausea or mild diarrhoea. Many combination treatments are only for one week but if any of these symptoms become intolerable you should contact your doctor. However, the course of treatment should be completed, if at all possible.

Who Should Receive Treatment to Eradicate *H.pylori* Infection?

Patients with definite proof of peptic ulceration are the ideal people to receive treatment to eradicate *H.pylori* infection. These patients will usually have a long-term cure of their ulcer disease, if the treatment clears all traces of *H.pylori* infection from the stomach. However, if it proves impossible to clear the stomach, ulcer patients can be protected from relapse by long-term daily treatment with a drug to decrease gastric acidity.

What About People Who Are *H.pylori* Positive, but Without Any Sign of Peptic Ulceration?

This type of person is often well with no symptoms and no treatment is indicated. A person who suffers from indigestion without evidence of a peptic ulcer will often feel no better after eradication of *H.pylori* infection.

Should everyone be tested for *H.pylori*?

In the future, it may well be worthwhile to search out every person with *H.pylori* infection. However, at the moment we do not have a simple and inexpensive form of treatment to provide mass eradication of *H.pylori* infection, nor do we know that doing so would help people without an ulcer. It is possible that vaccination may prove the answer, but no vaccines are available against *H.pylori* at the moment.

What Research is needed?

H.pylori has stimulated an enormous amount of research over the last 10 years. Many questions remain unanswered - for example, the exact method by which the germ passes from one person to another, the reasons why it causes peptic ulceration and new strategies for eradicating infection using either antibiotics or vaccines.

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