A peptic ulcer is a sore or hole in the lining of the stomach or duodenum (the first part of the small intestine). People of any age can get an ulcer and women are affected just as often as men. Over 25 million Americans will suffer from an ulcer at some point during their lifetime. The good news is that most ulcers are caused by an infection with the bacterium, *Helicobacter pylori*, and can be cured in about two weeks with antibiotics.

### Ulcer Facts

- Most ulcers are caused by an infection, not spicy food, acid or stress.
- The most common ulcer symptom is burning pain in the stomach.
- Your doctor can test you for *H. pylori* infection.
- Antibiotics are the new cure for ulcers.
- Eliminating *H. pylori* infections with antibiotics means that your ulcer can be cured for good.
For more information about *H. pylori* infection and ulcers, see your health care provider or call toll-free: 1-888-MY-ULCER.

Para obtener más información sobre las infecciones causadas por *H. pylori* y las úlceras, consulte a su médico o llame gratis al 1-888-698-5237.

**Division of Bacterial and Mycotic Diseases**

*Helicobacter pylori* and Peptic Ulcer Disease

**Good News - A Cure For Ulcers!!**

Whether you think you might have an ulcer, have recently been diagnosed with one, or have been living with ulcers for many years, this brochure brings good news. Recently, scientists have found that most ulcers are caused by an infection. With appropriate antibiotic treatment, your ulcer - and the pain it causes - can be gone forever!

**What is an ulcer?**

Twenty-five million Americans suffer from ulcers. An ulcer is a
sore or hole in the lining of the stomach or duodenum (the first part of the small intestine). People of any age can get an ulcer and women are affected just as often as men.

What causes ulcers?

*Helicobacter pylori* (*H. pylori*) is a bacterium that lives on the lining of the stomach. Although we used to think that spicy food, acid, and stress were the major causes of ulcers, we now know that nine out of ten ulcers are caused by *H. pylori*. Medicines that reduce stomach acid may make you feel better, but your ulcer may come back.

Here's the good news: Since most ulcers are caused by this bacterial infection, they can be cured with the right antibiotics.

What are the symptoms of an ulcer?

The most common ulcer symptom is gnawing or burning pain in the abdomen between the breastbone and the belly button. The pain often occurs when the stomach is empty, between meals and in the early morning hours, but it can occur at any other time. It may last from minutes to hours and may be relieved by eating food or taking antacids. Less common symptoms include nausea, vomiting, or loss of appetite. Sometimes ulcers bleed. If bleeding continues for a long time, it may lead to anemia with weakness and fatigue. If bleeding is heavy, blood may appear in vomit or bowel movements, which may appear dark red or black.

How can your health care provider tell if you have *H. pylori*?

Your health care provider may choose to use any of the following tests to determine if your ulcer is caused by *H. pylori*.

- Blood tests: A blood test can confirm if you have *H. pylori*. To perform this test, your health care provider sends your blood sample to a lab.
- Breath tests: A breath test can determine if you are infected with *H. pylori*. In this test, you drink a harmless liquid and in less than 1 hour, a sample of your breath is tested for *H. pylori*.
- Endoscopy: Your health care provider may decide to perform an endoscopy. This is a test in which a small tube with a camera inside is inserted through the mouth and into the stomach to look for ulcers. During the endoscopy, small samples of the stomach lining can be obtained and tested for *H. pylori*.
What is the treatment for *H. pylori* infection?

If you have an ulcer, you should be tested for *H. pylori*, and if found to be infected, you should be treated with antibiotics. Antibiotics are the new cure for ulcers; therapy is 1-2 weeks of one or two antibiotics and a medicine that will reduce the acid in the stomach. This treatment is a dramatic medical advance because eliminating *H. pylori* with antibiotics means that there is a greater than 90% chance that the ulcer can be cured for good. Remember, it is very important to continue taking all of this medicine until it is gone, even when you begin to feel better. If you are having side effects that make it hard to take your medicine, talk to your health care provider.

**Ulcer Facts**

- Most ulcers are caused by an infection, not spicy food, acid or stress.
- The most common ulcer symptom is burning pain in the stomach.
- Your doctor can test you for *H. pylori* infection.
- Antibiotics are the new cure for ulcers.
- Eliminating *H. pylori* infections with antibiotics means that your ulcer can be cured for good.

For more information about *H. pylori* infection and ulcers, see your health care provider or call toll-free: 1-888-MY-ULCER.

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This page last reviewed February 2, 2001

[Centers for Disease Control and Prevention]
[National Center for Infectious Diseases]
[Division of Bacterial and Mycotic Diseases]
What is *H. pylori*?

*Helicobacter pylori* (*H. pylori*) is a spiral-shaped bacterium that is found in the gastric mucous layer or adherent to the epithelial lining of the stomach. *H. pylori* causes more than 90% of duodenal ulcers and up to 80% of gastric ulcers. Before 1982, when this bacterium was discovered, spicy food, acid, stress, and lifestyle were considered the major causes of ulcers. The majority of patients were given long-term medications, such as H2 blockers, and more recently, proton pump inhibitors, without a chance for permanent cure. These medications relieve ulcer-related symptoms, heal gastric mucosal inflammation, and may heal the ulcer, but they do NOT treat the infection. When acid suppression is removed, the majority of ulcers, particularly those caused by *H. pylori*, recur. Since we now know that most ulcers are caused by *H. pylori*, appropriate antibiotic regimens can successfully eradicate the infection in most patients, with complete resolution of mucosal inflammation and a minimal chance for recurrence of ulcers.

How common is *H. pylori* infection?

Approximately two-thirds of the world's population is infected with *H. pylori*. In the United States, *H. pylori* is more prevalent among older adults, African Americans, Hispanics, and lower socioeconomic groups.

What illnesses does *H. pylori* cause?

Most persons who are infected with *H. pylori* never suffer any...
symptoms related to the infection; however, *H. pylori* causes chronic active, chronic persistent, and atrophic gastritis in adults and children. Infection with *H. pylori* also causes duodenal and gastric ulcers. Infected persons have a 2- to 6-fold increased risk of developing gastric cancer and mucosal-associated-lymphoid-type (MALT) lymphoma compared with their uninfected counterparts. The role of *H. pylori* in non-ulcer dyspepsia remains unclear.

**What are the symptoms of ulcers?**

Approximately 25 million Americans suffer from peptic ulcer disease at some point in their lifetime. Each year there are 500,000 to 850,000 new cases of peptic ulcer disease and more than one million ulcer-related hospitalizations. The most common ulcer symptom is gnawing or burning pain in the epigastrium. This pain typically occurs when the stomach is empty, between meals and in the early morning hours, but it can also occur at other times. It may last from minutes to hours and may be relieved by eating or by taking antacids. Less common ulcer symptoms include nausea, vomiting, and loss of appetite. Bleeding can also occur; prolonged bleeding may cause anemia leading to weakness and fatigue. If bleeding is heavy, hematemesis, hematochezia, or melena may occur.

**Who should be tested and treated for *H. pylori***?

Persons with active gastric or duodenal ulcers or documented history of ulcers should be tested for *H. pylori*, and if found to be infected, they should be treated. To date, there has been no conclusive evidence that treatment of *H. pylori* infection in patients with non-ulcer dyspepsia is warranted. Testing for and treatment of *H. pylori* infection are recommended following resection of early gastric cancer and for low-grade gastric MALT lymphoma. Retesting after treatment may be prudent for patients with bleeding or otherwise complicated peptic ulcer disease. Treatment recommendations for children have not been formulated. Pediatric patients who require extensive diagnostic work-ups for abdominal symptoms should be evaluated by a specialist.

**How is *H. pylori* infection diagnosed?**

Several methods may be used to diagnose *H. pylori* infection. Serological tests that measure specific *H. pylori* IgG antibodies can determine if a person has been infected. The sensitivity and specificity of these assays range from 80% to 95% depending upon the assay used. Another diagnostic method is the breath test. In this test, the patient is given either 13C- or 14C-labeled urea to drink. *H. pylori* metabolizes the urea rapidly, and the labeled carbon is absorbed. This labeled carbon can then be measured as CO2 in the patient's expired breath to determine whether *H. pylori* is present. The sensitivity and specificity of the breath test ranges from 94% to 98%. Upper esophagogastroduodenal endoscopy is considered the reference method of diagnosis. During endoscopy, biopsy specimens of the stomach and duodenum are obtained and the diagnosis of *H. pylori* can be made by several methods: The biopsy urease test - a colorimetric test based on the ability of *H. pylori* to produce urease;
it provides rapid testing at the time of biopsy. Histologic identification of organisms - considered the gold standard of diagnostic tests. Culture of biopsy specimens for *H. pylori*, which requires an experienced laboratory and is necessary when antimicrobial susceptibility testing is desired.

**What are the treatment regimens used for *H. pylori* eradication?**

Therapy for *H. pylori* infection consists of 10 days to 2 weeks of one or two effective antibiotics, such as amoxicillin, tetracycline (not to be used for children <12 yrs.), metronidazole, or clarithromycin, plus either ranitidine bismuth citrate, bismuth subsalicylate, or a proton pump inhibitor. Acid suppression by the H2 blocker or proton pump inhibitor in conjunction with the antibiotics helps alleviate ulcer-related symptoms (i.e., abdominal pain, nausea), helps heal gastric mucosal inflammation, and may enhance efficacy of the antibiotics against *H. pylori* at the gastric mucosal surface. Currently, eight *H. pylori* treatment regimens are approved by the Food and Drug Administration (FDA) (Table 1); however, several other combinations have been used successfully. Antibiotic resistance and patient noncompliance are the two major reasons for treatment failure. Eradication rates of the eight FDA-approved regimens range from 61% to 94% depending on the regimen used. Overall, triple therapy regimens have shown better eradication rates than dual therapy. Longer length of treatment (14 days versus 10 days) results in better eradication rates.

**FDA-Approved Treatment Options**

<table>
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<th>FDA-approved treatment options</th>
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| Omeprazole 40 mg QD + clarithromycin 500 mg TID x 2 wks, then omeprazole 20 mg QD x 2 wks |

-OR-

| Ranitidine bismuth citrate (RBC) 400 mg BID + clarithromycin 500 mg TID x 2 wks, then RBC 400 mg BID x 2 wks |

-OR-

<p>| Bismuth subsalicylate (Pepto Bismol®) 525 mg QID + metronidazole 250 mg QID + tetracycline 500 mg QID* x 2 wks + H2 receptor antagonist therapy as directed x 4 wks |</p>
<table>
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<tr>
<th>Treatment Options</th>
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<tr>
<td>Lansoprazole 30 mg TID + amoxicillin 1 g TID x 2 wks**</td>
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<tr>
<td><strong>-OR-</strong></td>
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<tr>
<td>Rantidine bismuth citrate 400 mg BID + clarithromycin 500 mg BID x 2 wks, then RBC 400 mg BID x 2 wks</td>
</tr>
<tr>
<td><strong>-OR-</strong></td>
</tr>
<tr>
<td>Omeprazole 20 mg BID + clarithromycin 500 mg BID + amoxicillin 1 g BID x 10 days</td>
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<tr>
<td><strong>-OR-</strong></td>
</tr>
<tr>
<td>Lansoprazole 30 mg BID + clarithromycin 500 mg BID + amoxicillin 1 g BID x 10 days</td>
</tr>
</tbody>
</table>

*Although not FDA approved, amoxicillin has been substituted for tetracycline for patients for whom tetracycline is not recommended.

**This dual therapy regimen has restrictive labeling. It is indicated for patients who are either allergic or intolerant to clarithromycin or for infections with known or suspected resistance to clarithromycin.

**Are there any long-term consequences of *H. pylori* infection?**
Recent studies have shown an association between long-term infection with *H. pylori* and the development of gastric cancer. Gastric cancer is the second most common cancer worldwide; it is most common in countries such as Colombia and China, where *H. pylori* infects over half the population in early childhood. In the United States, where *H. pylori* is less common in young people, gastric cancer rates have decreased since the 1930s.

**How do people get infected with *H. pylori***?
It is not known how *H. pylori* is transmitted or why some patients become symptomatic while others do not. The bacteria are most likely spread from person to person through fecal-oral or oral-oral routes. Possible environmental reservoirs include contaminated water sources. Iatrogenic spread through contaminated endoscopes has been documented but can be prevented by proper cleaning of equipment.

**What can people do to prevent *H. pylori* infection?**
Since the source of *H. pylori* is not yet known, recommendations for avoiding infection have not been made. In general, it is always wise for persons to wash hands thoroughly, to eat food that has been properly prepared, and to drink water from a safe, clean source.

**What is the Centers for Disease Control and Prevention (CDC) doing to prevent *H. pylori* infection?**
CDC, with partners in other government agencies, academic institutions, and industry, is conducting a national education
A campaign to inform health care providers and consumers of the link between *H. pylori* and stomach and duodenal ulcers. CDC is also working with partners to study routes of transmission and possible prevention measures, and to establish an antimicrobial resistance surveillance system to monitor the changes in resistance among *H. pylori* strains in the United States.

**How can I get more information about *H. pylori***?

4. The American Gastroenterological Association, American Digestive Health Foundation, 7910 Woodmont Avenue, 7th floor, Bethesda, MD 20814, (301) 654-2055 telephone, (301) 654-5920 fax.

**For further information, contact:**

Health Communications Activity  
Division of Bacterial and Mycotic Diseases  
National Center for Infectious Diseases  
Centers for Disease Control and Prevention  
1600 Clifton Road, MS-A49  
Atlanta, GA 30333  
1-888-MY-ULCER (1-888-698-5237)
Peptic ulcer disease has a large impact on the U.S. health care system.

One out of ten Americans suffers from peptic ulcer disease during their lifetime. Ulcers cause an estimated 1 million hospitalizations and 6500 deaths per year. In the United States, annual health care costs of peptic ulcer disease have been estimated at nearly $6 billion: $3 billion in hospitalization costs, $2 billion in physician office visits, and $1 billion in decreased productivity and days lost from work.1

Curing an ulcer with antibiotic therapy is cost-effective.

We now know that nine out of ten peptic ulcers are caused by an infection with the bacterium, *Helicobacter pylori* and not by stress or spicy foods as previously thought. Curing the infection with antibiotics shortens ulcer healing time and significantly reduces the ulcer recurrence rate compared with traditional ulcer therapies such as acid-reducing medications. *H. pylori* infection can usually be cured with a two-week regimen of antibiotics. In more than 80 percent of patients, the ulcer is cured and does not recur.2

Antibiotic therapy has a much greater effect on lowering the overall cost of peptic ulcer disease.

Studies indicate that curing an ulcer with antibiotics takes less time and costs less than one-tenth the amount of treating ulcer symptoms over a lifetime. Maintenance therapy with acid-reducing medications costs approximately $11,000 and requires 187 days of treatment over 15 years. Vagotomy, a more extreme treatment, is also quite costly at $17,000 and requires 307 days of treatment over a 15-year period. Conversely, antibiotic therapy takes 17 days and costs less than $1,000 over the same period of time. 3

Antibiotic therapy is cost effective in a managed care setting.

Recent cost analyses, economic decision models and a randomized
controlled trial have all shown that eradicating *H. pylori* from patients with peptic ulcer disease results in decreased health care costs. In a study at a large health maintenance organization, *H. pylori* eradication in peptic ulcer disease patients resulted in a decreased use of outpatient services and, thus, a decreased cost of follow-up care. 4

The Centers for Disease Control and Prevention (CDC) is working to reduce the economic burden of peptic ulcer disease.

CDC, in partnership with other government agencies, academic institutions, and industry, is conducting a national education campaign to inform health care providers and consumers of the association between *H. pylori* and peptic ulcer disease. Awareness of this association will result in improved diagnosis and treatment of persons with peptic ulcer disease, which will ultimately result in decreased health care use and cost.

References


For further information, contact:

Health Communications Activity
Division of Bacterial and Mycotic Diseases
National Center for Infectious Diseases
Centers for Disease Control and Prevention
1600 Clifton Road, MS C09
Atlanta, GA 30333
1-888-MY-ULCER (1-888-698-5237)
The road to a cure for ulcers has been a long and bumpy one. Recent news that ulcers are caused by a bacterium and can be cured with antibiotics has changed traditional thinking. Physicians and consumers have not been informed of the good news.

**Early 20th Century**
Ulcers are believed to be caused by stress and dietary factors. Treatment focuses on hospitalization, bed rest, and prescription of special bland foods. Later, gastric acid is blamed for ulcer disease. Antacids and medications that block acid production

1982
Australian physicians Robin Warren and Barry Marshall first identify the link between *Helicobacter pylori* (*H. pylori*) and ulcers, concluding that the bacterium, not stress or diet, causes ulcers. The medical community is slow to accept their findings.

1994
A National Institutes of Health Consensus Development Conference concludes that there is a strong association between *H. pylori* and ulcer disease, and recommends that ulcer patients with *H. pylori* infection be treated with antibiotics.
1994
A National Institutes of Health Consensus Development Conference concludes that there is a strong association between *H. pylori* and ulcer disease, and recommends that ulcer patients with *H. pylori* infection be treated with antibiotics.

1995
Data show that about 75 percent of ulcer patients are still treated primarily with antisecretory medications, and only 5 percent receive antibiotic therapy. Consumer research by the American Digestive Health Foundation finds that nearly 90 percent of ulcer sufferers are unaware that *H. pylori* causes ulcers. In fact, nearly 90 percent of those with ulcers blame their ulcers on stress or worry, and 60 percent point to diet.

1996
The Food and Drug Administration approves the first antibiotic for treatment of ulcer disease.

1997
The Centers for Disease Control and Prevention (CDC), with other government agencies, academic institutions, and industry, launches a national education campaign to inform health care providers and consumers about the link between *H. pylori* and ulcers. This campaign reinforces the news that ulcers are a curable infection, and the fact that health can be greatly improved and money saved by disseminating information about *H. pylori*. Medical researchers sequence the *H. pylori* genome. This discovery can help scientists better understand the bacterium and design more effective drugs to fight it.

References:


For more information about *H. pylori* infection and ulcers, see your health care provider or call toll-free: 1-888-MY-ULCER.
**Introduction**

At a time when physicians are criticized for overly prescribing antibiotics and using them unnecessarily, national surveys indicate there is at least one malady, peptic ulcer disease, for which antibiotics are underused. Peptic ulcer disease, both gastric and duodenal, is a significant health care problem that causes pain and suffering for millions of people. Furthermore, it accounts for a tremendous burden upon the health care system. Approximately 25 million Americans will have an ulcer at some point in their lifetime. In the past, spicy food, acid and stress were thought to be major causes of peptic ulcers. We now know that up to nine out of ten ulcers are caused by a bacterial infection with *Helicobacter pylori* (*H. pylori*) that can be cured with appropriate antibiotic treatment. However, many health care providers do not treat ulcer patients with antibiotics, and many health care consumers are still unaware that ulcers are caused by a curable infection.

**History of *H. pylori* Infection**

*H. pylori* is a spiral-shaped bacterium that lives attached to or just above the gastric mucosa. Once a person is infected, the organism can live in the stomach indefinitely and may not cause clinical illness until many years later. Many of those infected never develop symptoms at all. The role of *H. pylori* as a major cause of peptic ulcer disease and gastritis in humans was first discovered by Drs. Barry Marshall and J. Robin Warren in Australia in 1983. Studies have also shown an association between long-term infection with *H. pylori* and the development of gastric cancer. Gastric cancer is the
second most common cancer worldwide; it is most common in countries such as Colombia and China, where *H. pylori* infects the majority of the population in early childhood. *H. pylori* infection is extremely common; over 50% of the world's population is infected with this bacterium. In the United States *H. pylori* infection is more common in older adults, African Americans, Hispanics and persons living under low socioeconomic circumstances. It is still not clear how *H. pylori* is transmitted or why some people infected with *H. pylori* become sick and others do not. Researchers believe that the bacteria are most likely spread from person to person through the fecal-oral route or the oral-oral route, and that humans are the primary reservoir for this infection.

**Testing for *H. pylori* Infection**

Several tests, both invasive and noninvasive, are available to detect *H. pylori* in patients who have been diagnosed with an ulcer or who have ulcer symptoms. Invasive tests involve endoscopy, during which biopsy specimens are obtained to determine if the patient is infected with *H. pylori* and if he or she has an ulcer. Noninvasive tests do not determine if a patient has an ulcer but whether a patient has been infected with *H. pylori*. Non-invasive tests include both serologic tests and breath tests. Serologic testing can determine if a person had a past or current infection by measuring specific *H. pylori* IgG antibodies. For breath testing, the patient must drink an oral preparation containing 13C or 14C-labeled urea. The *H. pylori* bacteria in the stomach metabolize this urea, and the carbon is absorbed into the blood stream, travels to the lungs, and is then exhaled. Measurements of 13C or 14C in exhaled breath determine presence or absence of *H. pylori* infection. The breath test is the only available FDA-approved method to test for cure after treatment.

**Treating *H. pylori* Infection**

If a patient is infected with *H. pylori* and has an active gastric or duodenal ulcer, or a history of an ulcer, the infection should be treated. Therapy for *H. pylori* infection consists of 1-2 weeks of one or two effective antibiotics, such as amoxicillin, tetracycline (not to be used for children <12 yrs.), metronidazole, or clarithromycin, plus either ranitidine bismuth citrate, bismuth subsalicylate, or a proton pump inhibitor. The many clinical treatment trials involving patients with *H. pylori* infection and gastric or duodenal ulcers show that curing the infection is associated with a marked reduction in ulcer recurrence rates. Duodenal and gastric ulcers recur in up to 80% of persons treated with medications that reduce gastric acid but are not treated with antibiotics for *H. pylori* infection. By comparison, only 6% of patients have recurrent ulcers when their *H. pylori* infection is cured.
In 1994, the National Institutes of Health (NIH) convened a Consensus Development Conference consisting of an expert panel in the area of gastrointestinal and infectious diseases and microbiology to discuss the role of *H. pylori* infection in peptic ulcer disease. The panel unanimously agreed that there was a causal association between *H. pylori* infection and ulcer disease. The consultants recommend that all patients with ulcers who are infected with *H. pylori* should undergo antibiotic treatment for the infection.

**Awareness High, Treatment Low**

After the NIH recommendations were published, national surveys of primary care physicians and gastroenterologists indicated that approximately 90% of these physicians correctly identified *H. pylori* infection as the primary cause of ulcers. However, primary care physicians still reported treating more than 50% of their first time ulcer patients with acid-reducing medications and not antibiotic-based regimens. Even gastroenterologists reported treating over 30% of their patients with first time ulcer symptoms with acid-reducing medications alone.

Health care consumers are far less aware of the association between *H. pylori* and peptic ulcer disease than their health care providers are. CDC's Morbidity and Mortality Weekly Report, on October 24, 1997, reported the findings of the Healthstyles Supplemental Survey administered to health care consumers in 1997. Questionnaires were mailed to a representative sample of 3,064 U.S. adults aged 18 years and older; of these, 82% completed the questionnaire. Approximately 60% of the respondents believed that ulcers were caused by too much stress; 17% thought that spicy foods were the cause of ulcers, and only 27% believed that a bacterial infection might be the cause of ulcers. These findings suggest that both health care providers and consumers need further education about the link between *H. pylori* and peptic ulcer disease.

**The Economics of *H. pylori***

The under use of antibiotic therapy for *H. pylori* infection and peptic ulcer disease results not only in unnecessary loss of productivity and decreased quality of life, but also in enormous strain on the economy and resources of the health care delivery system. A recent survey of adults living in the United States showed that 10% to 15% of all persons with a recent ulcer reported themselves to be in poor health, incapable of major activity, or unable to work for some part of the previous year. In the early 1990s, 6,058 Americans over the age of 35 years died from peptic ulcer disease, and health care costs attributed to management of acute or chronic ulcer disease totaled over $13.9 billion per year.

Economic analysis demonstrates that curing an ulcer takes less time
and costs substantially less than the cost of treating ulcer symptoms over a person's lifetime. The most extreme treatment, vagotomy or ulcer surgery, costs approximately $17,000 and requires an average of 307 days of treatment over a 15-year period. Maintenance therapy with antisecretory agents costs approximately $11,000 and requires 187 days of treatment over 15 years. In comparison, antibiotic therapy for *H. pylori* takes 17 days and costs less than $1,000 over the same 15 year period. Therefore, treating persons with peptic ulcer disease and *H. pylori* with an appropriate course of relatively inexpensive antibiotics is the recommended approach for most health care providers.

**The CDC *H. pylori* Education Initiative**

To increase awareness that peptic ulcer disease is caused by a curable infection, CDC, along with partners from academia, other federal agencies, and industry, has launched an education campaign targeting health care consumers and providers. The campaign includes radio and television public service announcements, a web site and toll-free information number (1-888-MY-ULCER), along with consumer and physician fact sheet mailouts. The overall education campaign goals are to dispel the belief that most ulcers are caused by spicy foods, acid or stress and increase awareness of a curable, infectious cause of peptic ulcer disease.

**For further information, contact:**

Health Communications Activity
Division of Bacterial and Mycotic Diseases
National Center for Infectious Diseases
Centers for Disease Control and Prevention
1600 Clifton Road, MS C09
Atlanta, GA 30333
1-888-MY-ULCER (1-888-698-5237)

Para obtener más información sobre las infecciones causadas por *H. pylori* y las úlceras, consulte a su médico o llame gratis al 1-888-698-5237.
Helicobacter pylori and Peptic Ulcer Disease

Have a Stressful Job?
You Must Have an Ulcer...Right?

Which of the following people are most likely to have an ulcer?
The answer, below, may surprise you.

### Top 10 Most Stressful Jobs

<table>
<thead>
<tr>
<th>1. Inner City HS Teacher</th>
<th>6. Stockbroker</th>
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<tbody>
<tr>
<td>2. Police Officer</td>
<td>7. Journalist</td>
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<tr>
<td>4. Air Traffic Controller</td>
<td>9. Secretary</td>
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<td>5. Medical Intern</td>
<td>10. Waiter</td>
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### Top 10 Least Stressful Jobs

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<th>1. Forester</th>
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<td>2. Bookbinder</td>
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<td>3. Telephone Line Worker</td>
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<td>4. Toolmaker</td>
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<td>5. Millwright</td>
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<td>6. Repairperson</td>
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<td>7. Civil Engineer</td>
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<td>8. Therapist</td>
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<tr>
<td>9. Natural Scientist</td>
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<td>10. Sales Representative</td>
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According to Health Magazine

Did you guess that the inner city high school teacher's stomach would be riddled with ulcers not only from the stress of dealing with troubled teens, but also from the tacos in the lunchroom? And that the forester's calm environment would make his or her stomach acid-free and healthy? Surprise! All the workers on this list are just as likely as any others you can imagine to get an ulcer.
While stress and diet can irritate an ulcer, they do not cause it. Ulcers are caused by the bacterium *H. pylori*, and can be cured with a one- or two-week course of antibiotics, even for people who have had ulcers for years.

For more information about *H. pylori* infection and ulcers, see your health care provider or call toll-free: 1-888-MY-ULCER.
<table>
<thead>
<tr>
<th>Organization</th>
<th>Contacts</th>
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<tr>
<td><strong>American Gastroenterological Association</strong></td>
<td>Dianne Bach (Media Contact)</td>
</tr>
<tr>
<td>Bethesda, Maryland</td>
<td>Vice President</td>
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<td></td>
<td>Communications and Marketing</td>
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<td></td>
<td>(301) 941-2623</td>
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<td></td>
<td>Michael Stolar PhD</td>
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<td></td>
<td>Senior Vice President</td>
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<tr>
<td>National Institute of Diabetes and Digestive</td>
<td>Frank Hamilton, MD, MPH</td>
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<td>and Kidney Diseases</td>
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<td>(301) 594-8877</td>
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<td>Bethesda, Maryland</td>
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<td>Digestive Health Initiative Program</td>
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<td>James W Freston, MD, PhD</td>
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<td>Professor and Chair, Dept of Medicine</td>
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<td>Linda Utrup, PhD</td>
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<td>Kerry Bush</td>
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<td>Ed Burghard</td>
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<td>Astra Merck</td>
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<td>Ed Long, PhD</td>
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<td>Gary Neil, MD</td>
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<td>Abbott Laboratories</td>
<td>Bob Rochelle</td>
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For more information about *H. pylori* infection and ulcers, see your health care provider or call toll-free: 1-888-MY-ULCER.
Educational Materials Order Form

Thank you for your interest in our health education materials. The Centers for Disease Control and Prevention (CDC) is pleased to be working with you toward healthy communities. We have asked the Public Health Foundation (PHF) to help us with the monumental task of ordering and distributing the ever-increasing demand for our products. As of January 2001, the PHF began handling all bulk order requests for *H. pylori* education materials. The Public Health Foundation is a national, non-profit organization dedicated to achieving healthy communities through research, training, and technical assistance. To order materials in bulk from the Public Health Foundation you can click on the link associated with the material you are interested in purchasing or you can call 1-877-252-1200 between 9 am and 5 pm Eastern Standard Time.

**H. pylori** Physican Package (English & Spanish)
http://bookstore.phf.org/prod151.htm
The package includes patient brochures (250 copies each in English and Spanish), waiting room posters, fact sheets and an article on "The Key to the Cure." [Price $59]

**H. pylori** Physician Package (English)
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**H. pylori** Physician Package (Spanish)
http://bookstore.phf.org/prod153.htm
The package includes patient brochures (250 copies), waiting room posters, fact sheets and an article on "The Key to the Cure." [Price $30]

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http://bookstore.phf.org/prod150.htm
The package includes a four-page fact sheet on peptic ulcer disease and *H. pylori* infection, a two-page fact sheet that discusses the cost-effectiveness of curing peptic ulcer disease with antibiotic therapy, and "The Key to the Cure" article written by Dr. Benjamin Gold. (50 copies of each item are included in the package). [Price $15]

**H. pylori** Economic Fact Sheet
http://bookstore.phf.org/prod149.htm
The *H. pylori* Economic Fact Sheet is a two-page fact sheet that discusses the cost-effectiveness of curing peptic ulcer disease with antibiotic therapy. Available in packages of 100 copies. [Price $10]

**H. pylori** Fact Sheet for Providers
**H. pylori Fact Sheet for Providers** is a four-page fact sheet on peptic ulcer disease and *H. pylori* infection. It provides information about the incidence of *H. pylori* infection, ulcer symptoms, as well as testing and treating options for peptic ulcer disease and *H. pylori* infection. The fact sheet includes a table of the most current FDA-approved treatment options for *H. pylori* infection. Available in packages of 100 sheets. [Price $10]

**H. pylori Key to Cure Article**

This three-page article written by Dr. Benjamin Gold discusses the history of *H. pylori* infection and peptic ulcer disease, testing and treatment of *H. pylori* infection, and the economics associated with *H. pylori* infection. The article also provides an overview of the *H. pylori* education initiative developed by Centers for Disease Control and Prevention (CDC). Available in packages of 100 copies. [Price $15]

For more information about *H. pylori* infection and ulcers, see your health care provider or call toll-free: 1-888-MY-ULCER. Para obtener más información sobre las infecciones causadas por *H. pylori* y las úlceras, consulte a su médico o llame gratis al 1-888-698-5237.