



How is Hepatitis C treated?

Since acute Hepatitis C rarely causes symptoms, it often goes undiagnosed and therefore untreated. When it is diagnosed, doctors recommend rest, adequate nutrition, fluids, and antiviral medications. People with chronic Hepatitis C should be monitored regularly for signs of liver disease. Even though a person may not have symptoms or feel sick, damage to the liver can still occur. Antiviral medication can be used to treat some people with chronic Hepatitis C, although not everyone needs or can benefit from treatment. For many, treatment can be successful and results in the virus no longer being detected.

What can people with Hepatitis C do to take care of their liver?

People with chronic Hepatitis C should see a doctor regularly. They also should ask their health professional before taking any prescriptions or over-the-counter medications—including herbal supplements or vitamins—as they can potentially damage the liver. People with chronic Hepatitis C should also avoid alcohol since it can accelerate liver damage.

How common is Hepatitis C?

An estimated 3.2 million people in the United States have chronic Hepatitis C. Most are unaware of their infection. Each year, about 17,000 Americans become infected with Hepatitis C.

How serious is Hepatitis C?

Chronic Hepatitis C is a serious disease that can result in long-term health problems, including liver damage, liver failure, and liver cancer. Approximately 12,000 people die every year from Hepatitis C-related liver disease.

What are the symptoms of Hepatitis C?

Many people with Hepatitis C do not have symptoms and do not know they are infected. Even though a person has no symptoms, the virus can still be detected in the blood.

If symptoms occur with acute infection, they can appear anytime from 2 weeks to 6 months after exposure. Symptoms of chronic Hepatitis C can take up to 30 years to develop. Damage to the liver can silently occur during this time. When symptoms do appear, they often are a sign of advanced liver disease. Symptoms for both acute and chronic Hepatitis C can include fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, dark urine, grey-colored stools, joint pain, and jaundice.

How is Hepatitis C diagnosed?

Doctors can diagnose Hepatitis C using specific blood tests that are not part of blood work typically done during regular physical exams. Typically, a person first gets a screening test that looks for "antibodies" to the Hepatitis C virus. Antibodies are chemicals released into the bloodstream when a person becomes infected. The antibodies remain in the bloodstream, even if the person clears the virus. If the screening test is positive for Hepatitis C antibodies, different blood tests are needed to determine whether the infection has been cleared or has become a chronic infection.

Who should get tested for Hepatitis C?

Testing for Hepatitis C is recommended for certain groups, including people who:

- Currently inject drugs
- Injected drugs in the past, even if it was just once or occurred many years ago
- Have HIV infection
- Have abnormal liver tests or liver disease
- Received donated blood or organs before 1992
- Have been exposed to blood on the job through a needlestick or injury with a sharp object
- Are on hemodialysis

For more information

Talk to your health professional, call your health department, or visit www.cdc.gov/hepatitis.



DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Disease Control and Prevention

Division of Viral Hepatitis



www.cdc.gov/hepatitis

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HEPATITIS C

General Information



Can Hepatitis C be prevented?

Yes. To reduce the risk of becoming infected with the Hepatitis C virus:

- Do not share needles or other equipment to inject cosmetic substances, drugs, or steroids
- Do not use personal items that may have come into contact with an infected person's blood, such as razors, nail clippers, toothbrushes, or glucose monitors
- Do not get tattoos or body piercings from an unlicensed facility or in an informal setting

Is there a vaccine for Hepatitis C?

Although there is currently no vaccine to prevent Hepatitis C, research is being conducted to develop one.

What is hepatitis?

"Hepatitis" means inflammation of the liver. The liver is a vital organ that processes nutrients, filters the blood, and fights infections. When the liver is inflamed or damaged, its function can be affected.

Hepatitis is most often caused by a virus. In the United States, the most common types of viral hepatitis are Hepatitis A, Hepatitis B, and Hepatitis C. Heavy alcohol use, toxins, some medications, and certain medical conditions can also cause hepatitis.

What is Hepatitis C?

Hepatitis C is a contagious liver disease that results from infection with the Hepatitis C virus. When first infected, a person can develop an "acute" infection, which can range in severity from a very mild illness with few or no symptoms to a serious condition requiring hospitalization.

Acute Hepatitis C is a short-term illness that occurs within the first 6 months after someone is exposed to the Hepatitis C virus. For reasons that are not known, 15%–25% of people "clear" the virus without treatment. Approximately 75%–85% of people who become infected with the Hepatitis C virus develop "chronic," or lifelong, infection.

Chronic Hepatitis C is a long-term illness that occurs when the Hepatitis C virus remains in a person's body. Over time, it can lead to serious liver problems, including liver damage, cirrhosis, liver failure, or liver cancer (see chart).

How is Hepatitis C spread?

Hepatitis C is usually spread when blood from a person infected with the Hepatitis C virus enters the body of someone who is not infected. Today, most people become infected with Hepatitis C by sharing needles or other equipment to inject drugs. Before widespread screening of the blood supply began in 1992, Hepatitis C was also commonly spread through blood transfusions and organ transplants. Although uncommon, outbreaks of Hepatitis C have occurred from blood contamination in medical settings.

Can Hepatitis C be spread through sex?

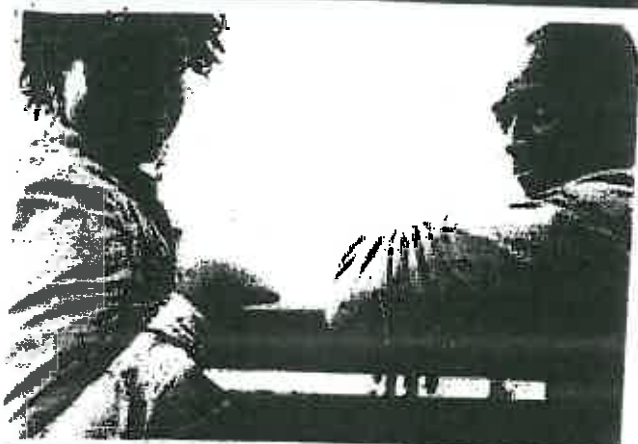
Yes, although scientists do not know how frequently this occurs. Having a sexually transmitted disease or HIV, sex with multiple partners, or rough sex appears to increase a person's risk for Hepatitis C. There also appears to be an increased risk for sexual transmission of Hepatitis C among gay men who are HIV-positive.

Can a person get Hepatitis C from a tattoo or piercing?

There is little evidence that Hepatitis C is spread by getting tattoos in licensed, commercial facilities. Whenever tattoos or body piercings are given in informal settings or with non-sterile instruments, transmission of Hepatitis C and other infectious diseases is possible.

Progression of Hepatitis C





Who should get vaccinated against Hepatitis B?

Vaccination is recommended for certain groups, including:

- Anyone having sex with an infected partner
- People with multiple sex partners
- Anyone with a sexually transmitted disease
- Men who have sexual encounters with other men
- People who inject drugs
- People who live with someone with Hepatitis B
- People with chronic liver disease, end stage renal disease, or HIV infection
- Healthcare and public safety workers exposed to blood
- Travelers to certain countries
- All infants at birth

What are the symptoms of acute Hepatitis B?

Not everyone has symptoms with acute Hepatitis B, especially young children. Most adults have symptoms that appear within 3 months of exposure. Symptoms can last from a few weeks to several months and include:

- Fever
- Vomiting
- Dark urine
- Fatigue
- Abdominal pain
- Joint pain
- Loss of appetite
- Grey-colored stools
- Jaundice
- Nausea

What are the symptoms of chronic Hepatitis B?

Many people with chronic Hepatitis B do not have symptoms and do not know they are infected. Even though a person has no symptoms, the virus can still be detected in the blood. Symptoms of chronic Hepatitis B can take up to 30 years to develop. Damage to the liver can silently occur during this time. When symptoms do appear, they are similar to acute infection and can be a sign of advanced liver disease.

How serious is Hepatitis B?

Over time, approximately 15%–25% of people with chronic Hepatitis B develop serious liver problems, including liver damage, cirrhosis, liver failure, and liver cancer. Every year, approximately 3,000 people in the United States and more than 600,000 people worldwide die from Hepatitis B-related liver disease.

How is Hepatitis B diagnosed and treated?

Hepatitis B is diagnosed with specific blood tests that are not part of blood work typically done during regular physical exams. For acute Hepatitis B, doctors usually recommend rest, adequate nutrition, fluids, and close medical monitoring. Some people may need to be hospitalized. Those living with chronic Hepatitis B should be evaluated for liver problems and monitored on a regular basis. Even though a person may not have symptoms or feel sick, damage to the liver can still occur. Several new treatments are available that can significantly improve health and delay or reverse the effects of liver disease.

Can Hepatitis B be prevented?

Yes. The best way to prevent Hepatitis B is by getting vaccinated. For adults, the Hepatitis B vaccine is given as a series of 3 shots over a period of 6 months. The entire series is needed for long-term protection. Booster doses are not currently recommended.

For more information

Talk to your health professional, call your health department, or visit www.cdc.gov/hepatitis.



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What Does a Positive Test for TB Infection Mean?

A positive test for TB infection only tells that a person has been infected with TB germs. It does not tell whether or not the person has progressed to TB disease. Other tests, such as a chest x-ray and a sample of sputum, are needed to see whether the person has TB disease.

What is Bacille Calmette-Guérin (BCG)?

BCG is a vaccine for TB disease. BCG is used in many countries, but it is not generally recommended in the United States. BCG vaccination does not completely prevent people from getting TB. It may also cause a false positive tuberculin skin test. However, persons who have been vaccinated with BCG can be given a tuberculin skin test or special TB blood test.

Why is Latent TB Infection Treated?

If you have latent TB infection but not TB disease, your doctor may want you to take a drug to kill the TB germs and prevent you from developing TB disease. The decision about taking treatment for latent infection will be based on your chances of developing TB disease. Some people are more likely than others to develop TB disease once they have TB infection. This includes people with HIV infection, people who were recently exposed to someone with TB disease, and people with certain medical conditions.

How is TB Disease Treated?

TB disease can be treated by taking several drugs for 6 to 12 months. It is very important that people who have TB disease finish the medicine, and take the drugs exactly as prescribed. If they stop taking the drugs too soon, they can become sick again; if they do not take the drugs correctly, the germs that are still alive may become resistant to those drugs. TB that is resistant to drugs is harder and more expensive to treat. In some situations, staff of the local health department meet regularly with patients who have TB to watch them take their medications. This is called directly observed therapy (DOT). DOT helps the patient complete treatment in the least amount of time.

Additional Information

CDC. Questions and Answers About TB
<http://www.cdc.gov/tb/publications/faqs/default.htm>



Elimination



Tuberculosis: General Information

What is TB?

Tuberculosis (TB) is a disease caused by germs that are spread from person to person through the air. TB usually affects the lungs, but it can also affect other parts of the body, such as the brain, the kidneys, or the spine. A person with TB can die if they do not get treatment.

What Are the Symptoms of TB?

The general symptoms of TB disease include feelings of sickness or weakness, weight loss, fever, and night sweats. The symptoms of TB disease of the lungs also include coughing, chest pain, and the coughing up of blood. Symptoms of TB disease in other parts of the body depend on the area affected.

How is TB Spread?

TB germs are put into the air when a person with TB disease of the lungs or throat coughs, sneezes, speaks, or sings. These germs can stay in the air for several hours, depending on the environment. Persons who breathe in the air containing these TB germs can become infected; this is called latent TB infection.

What is the Difference Between Latent TB Infection and TB Disease?

People with latent TB infection have TB germs in their bodies, but they are not sick because the germs are not active. These people do not have symptoms of TB disease, and they cannot spread the germs to others. However, they may develop TB disease in the future. They are often prescribed treatment to prevent them from developing TB disease.

People with TB disease are sick from TB germs that are active, meaning that they are multiplying and destroying tissue in their body. They usually have symptoms of TB disease. People with TB disease of the lungs or throat are capable of spreading germs to others. They are prescribed drugs that can treat TB disease.

What Should I Do if I Have Spent Time with Someone with Latent TB Infection?

A person with latent TB infection cannot spread germs to other people. You do not need to be tested if you have spent time with someone with latent TB infection. However, if you have spent time with someone with TB disease or someone with symptoms of TB, you should be tested.

What Should I Do if I Have Been Exposed to Someone with TB Disease?

People with TB disease are most likely to spread the germs to people they spend time with every day, such as family members or coworkers. If you have been around someone who has TB disease, you should go to your doctor or your local health department for tests.

How Do You Get Tested for TB?

There are two tests that can be used to help detect TB infection: a skin test or a special TB blood test. The Mantoux tuberculin skin test is performed by injecting a small amount of fluid (called tuberculin) into the skin in the lower part of the arm. A person given the tuberculin skin test must return within 48 to 72 hours to have a trained health care worker look for a reaction on the arm. The special TB blood test measures how the patient's immune system reacts to the germs that cause TB.

Where did HIV come from?

Scientists identified a type of chimpanzee in West Africa as the source of HIV infection in humans. They believe that the chimpanzee version of the immunodeficiency virus (called simian immunodeficiency virus or SIV) most likely was transmitted to humans and mutated into HIV when humans hunted these chimpanzees for meat and came into contact with their infected blood. Over decades, the virus slowly spread across Africa and later into other parts of the world.

HIV-2

In 1986, a second type of HIV, called HIV-2, was isolated from AIDS patients in West Africa. HIV-2 has the same modes of transmission as HIV-1 and is associated with similar opportunistic infections and AIDS. In persons infected with HIV-2, immunodeficiency seems to develop more slowly and to be milder, and those with HIV-2 are comparatively less infectious early in the course of infection. As the disease advances, HIV-2 infectiousness seems to increase; however, compared with HIV-1, the duration of this increased infectiousness is shorter.

HIV-2 infections are predominantly found in Africa. West African nations with a prevalence of HIV-2 of more than 1% in the general population are Cape Verde, Côte d'Ivoire (Ivory Coast), Gambia, Guinea-Bissau, Mali, Mauritania, Nigeria, and Sierra Leone. Other West African countries reporting HIV-2 are Benin, Burkina Faso, Ghana, Guinea, Liberia, Niger, São Tomé, Senegal, and Togo. Angola and Mozambique are other African nations where the prevalence of HIV-2 is more than 1%.

The first case of HIV-2 infection in the United States was diagnosed in 1987. Since then, the Centers for Disease Control and Prevention (CDC) has worked with state and local health departments to collect demographic, clinical, and laboratory data on persons with HIV-2 infection.

How is HIV spread?

HIV is spread primarily by:

- Not using a condom when having sex with a person who has HIV. All unprotected sex with someone who has HIV contains some risk. However:
 - Unprotected anal sex is riskier than unprotected vaginal sex.
 - Among men who have sex with other men, unprotected receptive anal sex is riskier than unprotected insertive anal sex.
- Having multiple sex partners or the presence of other sexually transmitted diseases (STDs) can increase the risk of infection during sex. Unprotected oral sex can also be a risk for HIV transmission, but it is a much lower risk than anal or vaginal sex.

HIV Fact Sheet

While there have been great strides in the prevention of HIV transmission and care of HIV infection and AIDS since AIDS was first recognized in 1981, many people still have questions about HIV and AIDS. The information below is designed to answer some of these questions based on the best available science.

What are HIV and AIDS?

HIV is the **human immunodeficiency virus**. It is the virus that can lead to **acquired immune deficiency syndrome**, or **AIDS**. CDC estimates that about 56,000 people in the United States contracted HIV in 2006.

There are two types of HIV, HIV-1 and HIV-2. In the United States, unless otherwise noted, the term "HIV" primarily refers to HIV-1.

Both types of HIV damage a person's body by destroying specific blood cells, called CD4+ T cells, which are crucial to helping the body fight diseases.

Within a few weeks of being infected with HIV, some people develop flu-like symptoms that last for a week or two, but others have no symptoms at all. People living with HIV may appear and feel healthy for several years. However, even if they feel healthy, HIV is still affecting their bodies. All people with HIV should be seen on a regular basis by a health care provider experienced with treating HIV infection. Many people with HIV, including those who feel healthy, can benefit greatly from current medications used to treat HIV infection. These medications can limit or slow down the destruction of the immune system, improve the health of people living with HIV, and may reduce their ability to transmit HIV. Untreated early HIV infection is also associated with many diseases including cardiovascular disease, kidney disease, liver disease, and cancer. Support services are also available to many people with HIV. These services can help people cope with their diagnosis, reduce risk behavior, and find needed services.

AIDS is the late stage of HIV infection, when a person's immune system is severely damaged and has difficulty fighting diseases and certain cancers. Before the development of certain medications, people with HIV could progress to AIDS in just a few years. Currently, people can live much longer - even decades - with HIV before they develop AIDS. This is because of "highly active" combinations of medications that were introduced in the mid 1990s.

No one should become complacent about HIV and AIDS. While current medications can dramatically improve the health of people living with HIV and slow progression from HIV infection to AIDS, existing treatments need to be taken daily for the rest of a person's life, need to be carefully monitored, and come with costs and potential side effects. At this time, there is no cure for HIV infection. Despite major advances in diagnosing and treating HIV infection, in 2007, 35,962 cases of AIDS were diagnosed and 14,110 deaths among people living with HIV were reported in the United States.

- Sharing needles, syringes, rinse water, or other equipment used to prepare illicit drugs for injection.
- Being born to an infected mother—HIV can be passed from mother to child during pregnancy, birth, or breast-feeding.

Less common modes of transmission include:

- Being "stuck" with an HIV-contaminated needle or other sharp object. This risk pertains mainly to healthcare workers.
- Receiving blood transfusions, blood products, or organ/tissue transplants that are contaminated with HIV. This risk is extremely remote due to the rigorous testing of the U.S. blood supply and donated organs/tissue.
- HIV may also be transmitted through unsafe or unsanitary injections or other medical or dental practices. However, the risk is also remote with current safety standards in the U.S.
- Eating food that has been pre-chewed by an HIV-infected person. The contamination occurs when infected blood from a caregiver's mouth mixes with food while chewing. This appears to be a rare occurrence and has only been documented among infants whose caregiver gave them pre-chewed food.
- Being bitten by a person with HIV. Each of the very small number of cases has included severe trauma with extensive tissue damage and the presence of blood. There is no risk of transmission if the skin is not broken.
- Contact between broken skin, wounds, or mucous membranes and HIV-infected blood or blood-contaminated body fluids. These reports have also been extremely rare.
- There is an extremely remote chance that HIV could be transmitted during "French" or deep, open-mouth kissing with an HIV-infected person if the HIV-infected person's mouth or gums are bleeding.
- Tattooing or body piercing present a potential risk of HIV transmission, but no cases of HIV transmission from these activities have been documented. Only sterile equipment should be used for tattooing or body piercing.
- There have been a few documented cases in Europe and North Africa where infants have been infected by unsafe injections and then transmitted HIV to their mothers through breastfeeding. There have been no documented cases of this mode of transmission in the U.S.

HIV cannot reproduce outside the human body. It is not spread by:

- Air or water.
- Insects, including mosquitoes. Studies conducted by CDC researchers and others have shown no evidence of HIV transmission from insects.

- ❑ Saliva, tears, or sweat. There is no documented case of HIV being transmitted by spitting.
- ❑ Casual contact like shaking hands or sharing dishes.
- ❑ Closed-mouth or "social" kissing.

All reported cases suggesting new or potentially unknown routes of transmission are thoroughly investigated by state and local health departments with assistance, guidance, and laboratory support from CDC.

How do HIV tests work?

The most commonly used HIV tests detect HIV antibodies – the substances the body creates in response to becoming infected with HIV. There are tests that look for HIV's genetic material or proteins directly; these may also be used to find out if someone has been infected with HIV.

It can take some time for the immune system to produce enough antibodies for the antibody test to detect, and this "window period" between infection with HIV and the ability to detect it with antibody tests can vary from person to person. During this time, HIV viral load and the likelihood of transmitting the virus to sex or needle-sharing partners may be very high. Most people will develop detectable antibodies that can be detected by the most commonly used tests in the United States within 2 to 8 weeks (the average is 25 days) of their infection. Ninety-seven percent (97%) of persons will develop detectable antibodies in the first 3 months. Even so, there is a small chance that some individuals will take longer to develop detectable antibodies. Therefore, a person should consider a follow-up test more than three months after their last potential exposure to HIV. In extremely rare cases, it can take up to 6 months to develop antibodies to HIV.

Conventional HIV tests are sent to a laboratory for testing, and it can take a week or two before the test results are available. There are also rapid HIV tests available that can give results in as little as 20 minutes. A positive HIV test result means that a person may have been infected with HIV. All positive HIV test results, regardless of whether they are from rapid or conventional tests, must be verified by a second "confirmatory" HIV test.

How can HIV be prevented?

Because the most common ways HIV is transmitted is through anal or vaginal sex or sharing drug injection equipment with a person infected with HIV, it is important to take steps to reduce the risks associated with these. They include:

- ❑ Know your HIV status. Everyone between the ages of 13 and 64 should be tested for HIV at least once. If you are at increased risk for HIV, you should be tested for HIV at least once a year.

- If you have HIV, you can get medical care, treatment, and supportive services to help you stay healthy and reduce your ability to transmit the virus to others.
- If you are pregnant and find that you have HIV, treatments are available to reduce the chance that your baby will have HIV.
- Abstain from sexual activity or be in a long-term mutually monogamous relationship with an uninfected partner.
- Limit your number of sex partners. The fewer partners you have, the less likely you are to encounter someone who is infected with HIV or another STD.
- Correct and consistent condom use. Latex condoms are highly effective at preventing transmission of HIV and some other sexually transmitted diseases. "Natural" or lambskin condoms do not provide sufficient protection against HIV infection.
- Get tested and treated for STDs and insist that your partners do too.
- Male circumcision has also been shown to reduce the risk of HIV transmission from women to men during vaginal sex.
- Do not inject drugs. If you inject drugs, you should get counseling and treatment to stop or reduce your drug use. If you cannot stop injecting drugs, use clean needles and works when injecting.
- Obtain medical treatment immediately if you think you were exposed to HIV. Sometimes, HIV medications can prevent infection if they are started quickly. This is called post-exposure prophylaxis.
- Participate in risk reduction programs. Programs exist to help people make healthy decisions, such as negotiating condom use or discussing HIV status. Your health department can refer you to programs in your area.

If you would like more information or have personal concerns, call **CDC-INFO** 24 Hours/Day at 1-800-CDC-INFO (232-4636), 1-888-232-6348 (TTY), in English, en Español

Many of the facts explained above come from studies published in scientific journals. Some of those studies are listed below.

1. Kilmarx P. Acquired immunodeficiency syndrome. In: Heymann DL, editor. Control of communicable diseases manual, 19th Edition. Washington, D.C.: APHA Press; 2008.
2. CDC. Late HIV Testing—34 States, 1996–2005. *MMWR* 2009;58(24):661-5.
3. RA Weis and RW Wrangham. From *Pan* to pandemic. *Nature* 1999; 397:385-6.
4. Marks, G., Crepaz, N., Senterfitt, J., Janssen, R., Meta-Analysis of High-Risk Sexual Behavior in Persons Aware and Unaware They are Infected with HIV in the United States: Implications for HIV Prevention Programs. *Journal of Acquired Immune Deficiency Syndromes*. 2005; 39(4):446-453.

5. Gaur, A.H., Dominguez, K.L., Kalish, M.L., Rivera-Hernandez, D., et al. Practice of Feeding Premasticated Food to Infants: A Potential Risk Factor for HIV Transmission. *Pediatrics*. 2009;124:658-666.
6. Vidmar, L., Poljak, M., Tomazic, J., Seme, K., Klavs, I. Transmission of HIV-1 by human bite. *Lancet*. 1996; 347:1762-1763.
7. CDC. Human immunodeficiency virus transmission in household settings—United States. *MMWR* 1994;43(19):347-356
8. Carey, Lytle, & Cyr. Implications of laboratory tests of condom integrity. *Sexually Transmitted Diseases* 1999; 26(4):216-20.
9. Lytle, Routson, Seaborn, Dixon, Bushar, & Cyr. An in vitro evaluation of condoms as barriers to a small virus. *Sexually Transmitted Diseases* 1997; 24(3):161-164.

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