



Hepatitis: Questions and Answers

WHAT IS VIRAL HEPATITIS?

Hepatitis is an inflammation of the liver caused by medications, alcohol, poisonous mushrooms, or a variety of other agents including the viruses that cause mumps, measles, herpes and infectious mononucleosis. However, when health professionals talk about viral hepatitis, they usually mean hepatitis caused by the hepatitis A, hepatitis B, or hepatitis C virus. Although these viruses have similar names, they are quite different clinically and genetically.

HOW CAN I PROTECT MYSELF FROM INFECTION?

Because the different viruses that cause hepatitis enter the body in different ways, there are several steps you can take to protect yourself from infection. Good hygiene, proper food preparation, and safe sex are good first steps. For more specific information, see the individual sections for hepatitis A, B and C.

WHAT ARE THE SYMPTOMS OF VIRAL HEPATITIS?

Early symptoms:

- Fatigue
- Loss of appetite
- Low-grade fever
- Tenderness in the upper right abdomen
- Malaise (generalized feeling of discomfort)
- Sore joints and muscles
- Nausea, vomiting and diarrhea

Later symptoms:

- Jaundice - abnormally yellow skin & eyes caused by elevated bilirubin (a byproduct of the breakdown of red blood cells in the blood)
- Darkened urine; light-colored or gray stool

However, many other conditions can cause similar symptoms, including food-borne illnesses, autoimmune disorders, viral or bacterial infections, and reactions to medications or toxins.

HOW IS IT DIAGNOSED?

Although health providers use information about a person's symptoms, health history and behaviors to help make a diagnosis, only blood tests can confirm the diagnosis and determine which type of hepatitis a person has, and whether the infection is acute or chronic.

HOW IS VIRAL HEPATITIS TREATED?

Since there's no medication that can treat the initial (acute) infection of viral hepatitis, health professionals manage symptoms as they occur and try to help the body's immune system fight the infection. If you have viral hepatitis:

- DO NOT DRINK alcohol. Ask your provider about the safety of using prescription and over-the-counter (OTC) drugs, including birth control pills, vitamins, herbals, Vitamin C and supplements.
- Drink high-calorie fluids such as fruit juices and eat a balanced diet that includes dairy products; meat, poultry or seafood; breads and cereals; and fruits and vegetables. (To control nausea, try eating several smaller meals.)
- Limit activity if your hepatitis is symptomatic; this typically means bed rest at first, progressing to normal activity as symptoms disappear.

Your health professional may recommend hospitalization if you experience severe vomiting or do not feel better after several weeks.

HEPATITIS A

The Centers for Disease Control (CDC) estimates that 25,000 people were infected with Hepatitis A in 2007. Hepatitis A rates in the US have fallen 92% since the introduction of vaccine in 1995. In the United States, most infections result from close personal contact with an infected household member or sex partner. Less often, infection results from eating or drinking something that has been contaminated with the stool (feces) of an infected person. This type of transmission is called "fecal-oral". The hepatitis A virus (HAV) can live outside the body for months. Heating the virus to 185 degrees F (85 degrees C) for one minute kills it. Chlorination kills HAV which enters the water supply.

Some facts about Hepatitis A

- The average incubation period (time from exposure to symptoms) for hepatitis A is 28 days (range 15-50 days). Symptoms usually last less than two months, rarely, up to six months.
- The virus usually causes mild illness and is often mistaken for a stomach virus, although occasionally symptoms are more serious. It is rarely fatal and does not cause permanent liver damage.
- The hepatitis A virus does not cause long-term, chronic symptoms that other hepatitis viruses can cause.

The CDC considers these groups to be at increased risk for acquiring Hepatitis A infection:

- Travelers to countries with high or intermediate endemicity of HAV infection (see the Travelers' health section of cdc.gov)
- Men who have sex with men
- Users of injection and non-injection illegal drugs
- Persons with clotting factor disorders
- Persons working with nonhuman primates susceptible to HAV infection

What behaviors could put me at risk for infection with the Hepatitis A virus?

- Eating contaminated food, such as undercooked shellfish from contaminated water or food handled by someone who has hepatitis A.
- Using utensils, cups or glasses that an infected person touched with unwashed hands.
- Changing diapers or linens that contain stool from someone with hepatitis A and neglecting to wash your hands.
- Sharing food with an infected person or drinking water contaminated with sewage.
- Oral or anal sexual contact with an infected person.
- Traveling to developing countries where the disease is common.
- Although hepatitis A has been transmitted by blood transfusion, this is very rare. Sharing needles for intravenous drug use has potential for transmission of hepatitis A.

What can be done to prevent Hepatitis A?

- Practice good personal hygiene. Always wash your hands after changing diapers, when cleaning or after using the toilet; and before preparing or eating food.
- Avoid foods that could be contaminated, such as under-cooked shellfish or food that's been prepared by someone who has the virus.
- When traveling to developing countries, drink only bottled or boiled water, don't use ice, and don't eat raw fruits or vegetables unless they've been peeled by you.
- If you inject drugs intravenously, do not share needles.
- Caregivers of persons with acute hepatitis A should observe precautions in their contacts with the infected persons for about two weeks if the person is an otherwise healthy adult, and up to six months if a child or immunocompromised adult.

What if I've been exposed?

If you think you've been directly exposed to the hepatitis A virus, visit your health care provider immediately for treatment. Some treatments can help fight the infection if administered within two weeks (hepatitis A vaccine and Immune globulin G). All people who have close household or sexual contact with an infected person also need treatment.

If I'm infected, how do I keep from infecting others?

- Always wash your hands well after using the toilet. Don't prepare or handle food for others while you are infectious.
- Avoid sexual contact with other people until you are fully recovered.

HEPATITIS B

Hepatitis B is a disease caused by the Hepatitis B Virus (HBV), which is transmitted through percutaneous (i.e. puncture through the skin) or mucosal (i.e. direct contact with mucous membranes) exposure to infectious blood or body fluids.

Although the rate of new Hepatitis B infections has fallen by an estimated 82% since 1991 (when routine vaccination of children began) it is still widespread. In 2007, an estimated 43,000 people in the United States were infected with HBV. Rates are particularly high among males aged 25-44 years. About 50% of adults with acute infection have no symptoms; most children with acute Hepatitis B are also asymptomatic. The mortality rate for acute Hepatitis B is 0.5-1.0%.

The CDC estimates that 800,000–1.4 million persons in the United States have chronic HBV infection and about 2,000-4,000 die each year from HBV-related cirrhosis or liver cancer. Worldwide, approximately 350 million people have chronic HBV: 620,000 die from HBV-related liver disease annually.

Some facts about hepatitis B

- The average incubation period is 90 days (range 60-150 days) from exposure to onset of early symptoms (see above). Jaundice develops 2-10 days later.
- If symptoms occur, they occur on the average of 12 weeks (range 9-21 weeks) after exposure to hepatitis B virus.
- Chronic infection develops in approximately 90% of infected infants, 25-50-% of infected children 1-5 years old, and about 5% of infected adults.
- Even if they have no symptoms, persons with chronic infection can transmit the virus to others (“carrier” state).

Modes of Transmission of Hepatitis B

- Sex with an infected partner
- Injection drug use that involves sharing needles, syringes, or drug-preparation equipment
- Birth from an infected mother
- Contact with blood or open sores of an infected person
- Needle sticks or sharp instrument exposures
- Sharing items such as razors or toothbrushes with an infected person

HBV is not spread through food or water, sharing eating utensils, breastfeeding, hugging, kissing, hand holding, coughing, or sneezing.

Although HBsAg (an antibody to the HBV) has been detected in multiple body fluids, only (blood) serum, semen, and saliva have been demonstrated to be infectious.

The CDC considers the following groups to be at higher risk for HBV infection:

- Infants born to infected mothers
- Sex partners of infected persons
- Sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., >1 sex partner during the previous 6 months)
- Men who have sex with men
- Injection drug users
- Household contacts of persons with chronic HBV infection
- Healthcare and public safety workers at risk for occupational exposure to blood or blood-contaminated body fluids
- Hemodialysis patients
- Residents and staff of facilities for developmentally disabled persons
- Travelers to countries with intermediate or high prevalence of HBV infection (see cdc.gov)

What can be done to prevent Hepatitis B?

If you are at risk of contracting hepatitis B, get vaccinated. The hepatitis B vaccine is an inactivated antigen (genetically engineered; not a live or killed virus). It is administered in a series of three injections over a six-month period. Approximately 95% of persons who receive the three injections develop full immunity after receiving the vaccine. (Persons who are allergic to yeast should not receive the HVB vaccine.)

Also, avoid high-risk behaviors and practice good personal hygiene when sharing food, kitchens, and bathrooms, especially if you live with someone who is infected with the hepatitis B virus. The virus can live outside the body for at least seven days. Wear gloves and use a 1:10 dilution of household bleach to clean up blood spills. Don't share razors, toothbrushes or pierced earrings with anyone.

What if I've been exposed?

If you have not been vaccinated against hepatitis B, but are exposed to the virus, your health professional can treat you with hepatitis B immune globulin (HBIG), combined with the hepatitis B vaccination. Studies have shown that HBIG, if given within one week of exposure, is about 75% effective at preventing HBV infection.

How is Chronic Hepatitis B treated?

- There are several antiviral medications available for the treatment of chronic hepatitis B, although it is not always curable.
- Adefovir dipivoxil, interferon alfa-2b, pegylated interferon alfa-2a, lamivudine, entecavir, and telbivudine are six drugs used for the treatment of persons with chronic hepatitis B.

HEPATITIS C

Some facts about Hepatitis C:

- The average time period from exposure to symptom onset is 4-12 weeks (range 2-24 weeks).
- Hepatitis C is less likely than the other hepatitis viruses to cause serious illness at first (only 20-30% of persons with acute Hepatitis C actually develop symptoms); about 75-85% of those infected develop chronic infection and 60-70% develop chronic liver disease. Hepatitis C is the most common reason for liver transplants.
- The CDC estimates there were 17,000 new HCV infections in the US in 2007.
- Approximately 3.2 million persons in the US have chronic HCV infection.
- Like hepatitis B, hepatitis C can be spread by contact with infected blood. It can be spread by sexual contact, but this happens infrequently, particularly between monogamous partners. Most infections are due to illegal injection drug use.

The CDC considers these groups to be at increased risk for Hepatitis C:

- Current or former injection drug users, including those who injected only once many years ago
- Recipients of clotting factor concentrates made before 1987, which is when more advanced methods for manufacturing those products were developed
- Recipients of blood transfusions or solid organ transplants before July 1992, when better testing of blood donors became available
- Chronic hemodialysis patients
- Persons with known exposures to HCV, such as healthcare workers after needle-sticks involving HCV-positive blood and recipients of blood or organs from a donor who tested HCV-positive
- Persons with HIV infection
- Children born to HCV-positive mothers

HCV can live outside the body for at least 16 hours, but not more than four days. Wear gloves and use a 1:10 dilution of household bleach to clean up blood spills.

Additionally:

- The average risk for perinatal (during birth) HCV transmission is 5-6% (range 0-25%)
- If co-infected with HIV, the average risk for perinatal infection is about 14% (range 5-30%).

What can be done to prevent hepatitis C?

Since hepatitis C is transmitted in the same way as hepatitis B, you can help avoid infection by using the same precautions. Follow CDC guidelines regarding sexual practices. Practice good personal hygiene; and never share needles, razors, toothbrushes or pierced earrings with anyone. Currently, there is no vaccine available.

How is chronic HCV infection treated?

- Alpha Interferon/peginterferon and ribavirin are two drugs licensed for the treatment of persons with chronic hepatitis C.
- Interferon can be taken alone or in combination with ribavirin. Combination therapy, using pegylated interferon and ribavirin, is currently the treatment of choice.
- Combination therapy can eliminate the virus in approximately 50% of persons with genotype 1 HCV and in approximately 80% of persons with genotype 2 and 3.

DELTA HEPATITIS

The delta virus (also known as hepatitis D) is an incomplete virus that may cause infection only in the presence of hepatitis B infection. The HDV may be acquired at the same time (co-infection) as HBV, or at a later time in a person with chronic HBV infection (super-infection). The symptoms and routes of transmission are similar to those of hepatitis B infection, but the risk of complications is higher. Acute liver failure is more likely with co-infection and cirrhosis is believed to be more common with chronic HBV/HDV infection (super-infection). Since Hepatitis D requires prior or concomitant infection with HBV, vaccination against Hepatitis B protects against HDV,

HEPATITIS E

Hepatitis E is a liver disease caused by the Hepatitis E virus (HEV). However, it occurs rarely in the United States. It is spread in the same way as Hepatitis A. It does not result in chronic infection. There is currently no vaccine.

Resources:

Hepatitis B Foundation web site: <http://www.hepb.org/>

Hep C Connection web site: <http://www.hepc-connection.org/>

Hepatitis Foundation International web site: <http://www.hepfi.org/>

Immunization Action Coalition's Vaccine Information for the Public and Health Professionals web page: <http://www.vaccineinformation.org/>

Vaccines Recommendations and Guidelines: <http://cdc.gov/vaccines/recs/default.htm>

References

American Liver Foundation web site: <http://www.liverfoundation.org/>

Hepatitis Foundation International web site: <http://www.hepfi.org/>

Family Doctor web site: <http://familydoctor.org/>

Bonis P & Chopra, S. *Patient information: Hepatitis C. UpToDate (18.1). January, 2010.*

The Centers for Disease Control and Prevention (CDC), U.S. Department of Health and Human Services:

1. *Hepatitis C FAQs for Health Professionals.* <http://cdc.gov/hepatitis/HCV/HCVfaq.htm>
2. *Hepatitis C FAQs for the Public.* <http://www.cdc.gov/hepatitis/C/cFAQ.htm>
3. *Hepatitis B FAQs for Health Professionals.* <http://cdc.gov/hepatitis/HBV/HBVfaq.htm>
4. *Hepatitis B, Chapter 8, Pinkbook, 11th Ed.* <http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/hepb.pdf>

If you are a registered University of Illinois student and you have questions or concerns, or need to make an appointment, please call: **Dial-A-Nurse at 333-2700**

If you are concerned about any difference in your treatment plan and the information in this handout, you are advised to contact your health care provider.

Visit the McKinley Health Center Web site at: <http://www.mckinley.illinois.edu>