

# Viral Hepatitis: A through E and Beyond

*National Digestive Diseases Information Clearinghouse*

**NIDDK**  
NATIONAL INSTITUTE OF  
DIABETES AND DIGESTIVE  
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U.S. Department  
of Health and  
Human Services

## What is viral hepatitis?

Viral hepatitis is inflammation of the liver caused by a virus. Several different viruses, named the hepatitis A, B, C, D, and E viruses, cause viral hepatitis.

All of these viruses cause acute, or short-term, viral hepatitis. The hepatitis B, C, and D viruses can also cause chronic hepatitis, in which the infection is prolonged, sometimes lifelong. Chronic hepatitis can lead to cirrhosis, liver failure, and liver cancer.

Researchers are looking for other viruses that may cause hepatitis, but none have been identified with certainty. Other viruses that less often affect the liver include cytomegalovirus; Epstein-Barr virus, also called infectious mononucleosis; herpesvirus; parvovirus; and adenovirus.

## What are the symptoms of viral hepatitis?

Symptoms include

- jaundice, which causes a yellowing of the skin and eyes
- fatigue
- abdominal pain
- loss of appetite
- nausea
- vomiting

- diarrhea
- low grade fever
- headache

However, some people do not have symptoms.

## Hepatitis A

### How is hepatitis A spread?

Hepatitis A is spread primarily through food or water contaminated by feces from an infected person. Rarely, it spreads through contact with infected blood.

### Who is at risk for hepatitis A?

People most likely to get hepatitis A are

- international travelers, particularly those traveling to developing countries
- people who live with or have sex with an infected person
- people living in areas where children are not routinely vaccinated against hepatitis A, where outbreaks are more likely
- day care children and employees, during outbreaks
- men who have sex with men
- users of illicit drugs

## How can hepatitis A be prevented?

The hepatitis A vaccine offers immunity to adults and children older than age 1. The Centers for Disease Control and Prevention recommends routine hepatitis A vaccination for children aged 12 to 23 months and for adults who are at high risk for infection. Treatment with immune globulin can provide short-term immunity to hepatitis A when given before exposure or within 2 weeks of exposure to the virus. Avoiding tap water when traveling internationally and practicing good hygiene and sanitation also help prevent hepatitis A.

## What is the treatment for hepatitis A?

Hepatitis A usually resolves on its own over several weeks.

## Hepatitis B

### How is hepatitis B spread?

Hepatitis B is spread through contact with infected blood, through sex with an infected person, and from mother to child during childbirth, whether the delivery is vaginal or via cesarean section.

### Who is at risk for hepatitis B?

People most likely to get hepatitis B are

- people who live with or have sexual contact with an infected person
- men who have sex with men
- people who have multiple sex partners
- injection drug users

- immigrants and children of immigrants from areas with high rates of hepatitis B
- infants born to infected mothers
- health care workers
- hemodialysis patients
- people who received a transfusion of blood or blood products before 1987, when better tests to screen blood donors were developed
- international travelers

## How can hepatitis B be prevented?

The hepatitis B vaccine offers the best protection. All infants and unvaccinated children, adolescents, and at-risk adults should be vaccinated. For people who have not been vaccinated, reducing exposure to the virus can help prevent hepatitis B. Reducing exposure means using latex condoms, which may lower the risk of transmission; not sharing drug needles; and not sharing personal items such as toothbrushes, razors, and nail clippers with an infected person.

## What is the treatment for hepatitis B?

Drugs approved for the treatment of chronic hepatitis B include alpha interferon and peginterferon, which slow the replication of the virus in the body and also boost the immune system, and the antiviral drugs lamivudine, adefovir dipivoxil, entecavir, and telbivudine. Other drugs are also being evaluated. Infants born to infected mothers should receive hepatitis B immune globulin and the hepatitis B vaccine within 12 hours of birth to help prevent infection.

People who develop acute hepatitis B are generally not treated with antiviral drugs because, depending on their age at infection, the disease often resolves on its own. Infected newborns are most likely to progress to chronic hepatitis B, but by young adulthood, most people with acute infection recover spontaneously. Severe acute hepatitis B can be treated with an antiviral drug such as lamivudine.

## Hepatitis C

### How is hepatitis C spread?

Hepatitis C is spread primarily through contact with infected blood. Less commonly, it can spread through sexual contact and childbirth.

### Who is at risk for hepatitis C?

People most likely to be exposed to the hepatitis C virus are

- injection drug users
- people who have sex with an infected person
- people who have multiple sex partners
- health care workers
- infants born to infected women
- hemodialysis patients
- people who received a transfusion of blood or blood products before July 1992, when sensitive tests to screen blood donors for hepatitis C were introduced
- people who received clotting factors made before 1987, when methods to manufacture these products were improved

### How can hepatitis C be prevented?

There is no vaccine for hepatitis C. The only way to prevent the disease is to reduce the risk of exposure to the virus. Reducing exposure means avoiding behaviors like sharing drug needles or personal items such as toothbrushes, razors, and nail clippers with an infected person.

### What is the treatment for hepatitis C?

Chronic hepatitis C is treated with peginterferon together with the antiviral drug ribavirin.

If acute hepatitis C does not resolve on its own within 2 to 3 months, drug treatment is recommended.

## Hepatitis D

### How is hepatitis D spread?

Hepatitis D is spread through contact with infected blood. This disease only occurs at the same time as infection with hepatitis B or in people who are already infected with hepatitis B.

### Who is at risk for hepatitis D?

Anyone infected with hepatitis B is at risk for hepatitis D. Injection drug users have the highest risk. Others at risk include

- people who live with or have sex with a person infected with hepatitis D
- people who received a transfusion of blood or blood products before 1987

## How can hepatitis D be prevented?

People not already infected with hepatitis B should receive the hepatitis B vaccine. Other preventive measures include avoiding exposure to infected blood, contaminated needles, and an infected person's personal items such as toothbrushes, razors, and nail clippers.

## What is the treatment for hepatitis D?

Chronic hepatitis D is usually treated with pegylated interferon, although other potential treatments are under study.

## Hepatitis E

### How is hepatitis E spread?

Hepatitis E is spread through food or water contaminated by feces from an infected person. This disease is uncommon in the United States.

## Who is at risk for hepatitis E?

People most likely to be exposed to the hepatitis E virus are

- international travelers, particularly those traveling to developing countries
- people living in areas where hepatitis E outbreaks are common
- people who live with or have sex with an infected person

## How can hepatitis E be prevented?

There is no U.S. Food and Drug Administration (FDA)-approved vaccine for hepatitis E. The only way to prevent the disease is to reduce the risk of exposure to the virus. Reducing risk of exposure means avoiding tap water when traveling internationally and practicing good hygiene and sanitation.

## What is the treatment for hepatitis E?

Hepatitis E usually resolves on its own over several weeks to months.

## Points to Remember

- Viral hepatitis is inflammation of the liver caused by the hepatitis A, B, C, D, or E viruses.
- Depending on the type of virus, viral hepatitis is spread through contaminated food or water, contact with infected blood, sexual contact with an infected person, or from mother to child during childbirth.
- Vaccines offer protection from hepatitis A and hepatitis B.
- No vaccines are available for hepatitis C, D, and E. Reducing exposure to the viruses offers the best protection.
- Hepatitis A and E usually resolve on their own. Hepatitis B, C, and D can be chronic and serious. Drugs are available to treat chronic hepatitis.

## What else causes viral hepatitis?

Some cases of viral hepatitis cannot be attributed to the hepatitis A, B, C, D, or E viruses, or even the less common viruses that can infect the liver, such as cytomegalovirus, Epstein-Barr virus, herpesvirus, parvovirus, and adenovirus. These cases are called non-A–E hepatitis. Scientists continue to study the causes of non-A–E hepatitis.

## Hope through Research

The National Institute of Diabetes and Digestive and Kidney Diseases, through its Division of Digestive Diseases and Nutrition, supports basic and clinical research into the nature and transmission of the hepatitis viruses, and the activation and mechanisms of the immune system. Results from these basic and clinical studies are used in developing new treatments and methods of prevention.

## For More Information

### **American Liver Foundation**

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### **Centers for Disease Control and Prevention Division of Viral Hepatitis**

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### **Hepatitis Foundation International**

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