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# Hepatitis B: Questions and Answers

## *Information about the disease and vaccines*

### **What causes hepatitis B?**

Hepatitis B is a liver disease caused by the hepatitis B virus (HBV).

### **How does HBV spread?**

HBV is found in the blood or certain body fluids. The virus is spread when blood or body fluid from an infected person enters the body of a person who is not infected. This can occur in a variety of ways including:

- Unprotected sexual contact
- Sharing drugs, needles, or “works” when using drugs
- Tattooing and body piercing
- Poor infection control practices in medical settings
- Needle sticks or sharps exposures on the job
- From mother to baby during birth
- Contact with wounds or skin sores
- When an infected person bites another person
- Pre-chewing food for babies
- Sharing personal-care items, such as razors or toothbrushes

HBV particles can be found on objects, even in the absence of visible blood. The virus can remain infectious and capable of spreading infection for at least seven days outside the human body.

HBV is not spread through food or water, sharing eating utensils, hugging, kissing, coughing, and sneezing or by casual contact, such as in an office or factory setting.

### **What are the symptoms of hepatitis B?**

About 7 out of 10 adults who become infected with HBV develop symptoms. Children under age 5 years rarely have symptoms. When people have symptoms, they usually appear between 45 and 160 days after onset of infection. People who have symptoms generally feel quite ill and might need to be hospitalized.

Symptoms of hepatitis B might include the following:

- Yellowing of skin and whites of eyes
- Dark-colored urine
- Loss of appetite or nausea
- Bloating and tender belly
- Extreme tiredness
- Fever
- Pain in joints

### **Do people fully recover?**

Most people who get infected as adults will fully recover. However, about 4 of 100 people will remain infectious and carry HBV in their bodies for life. This is called chronic infection. People with chronic HBV infection should not be excluded from work, school, play, childcare, or other settings.

The majority of people with chronic HBV infection feel healthy and do not develop serious problems related to the infection; however, about 25% will develop cirrhosis (scarring of the liver), liver failure, and liver cancer later in life.

### **How serious is infection with HBV?**

Hepatitis B can be very serious. Infection with HBV can cause life-long (chronic) infection that can lead to cirrhosis and liver cancer. Many people in the United States die every year from hepatitis B-related liver disease. Fortunately, there is a vaccine to prevent this disease.

### **How common is hepatitis B in the United States?**

In 2007, 4,519 cases of acute hepatitis B were reported to the Centers for Disease Control and Prevention (CDC); however, the actual number of new infections is estimated by the agency to be about tenfold higher. According to CDC, an estimated 0.8 to 1.4 million people have chronic HBV infection in the United States.

Since the introduction of routine vaccination against HBV, there has been a significant decline in U.S. cases among children and adolescents, the group with the largest increase in hepatitis B vaccination coverage.

However, chronic HBV infection remains a major problem. Many of the 1 million people chronically infected with HBV do not know they are infected. Most cases of chronic HBV infection in the United States are found in immigrants or refugees from Asia, Africa, the Pacific Islands, and Eastern Europe. People from these areas of the world should be tested to find out if they are chronically infected. Worldwide, approximately 350 million people are chronically infected with HBV and approximately 1 million of these people die each year from cirrhosis leading to liver failure or liver cancer.

### **How does a person know if s/he has HBV infection?**

Only blood tests can tell whether or not a person

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is currently infected and whether or not a person has been infected in the past. If the tests indicate a person has been infected in the past, testing will also determine whether the person has developed protective antibodies to the virus or whether they still have virus in their blood.

#### **Is there a medication to treat hepatitis B?**

There are several FDA-approved medications that might help a person who has chronic HBV infection. These medications don't usually get rid of the virus, but they might decrease the chance of the infected person developing severe liver disease. Not every infected person is a candidate for these medications. Researchers continue to seek additional treatments for hepatitis B. There is no treatment (other than supportive care) for people with acute hepatitis B.

#### **What should you do if you have been exposed to HBV?**

If you think you've been exposed to HBV, contact your doctor or clinic without delay. If you have not been vaccinated, it is recommended that you receive treatment with hepatitis B immune globulin (HBIG), a blood product containing protective HBV antibodies. You should also get the first dose of hepatitis B vaccine as soon as possible, preferably at the same time as the HBIG is given. Following this, you will need to complete the full hepatitis B vaccine series.

#### **Can you get hepatitis B more than once?**

No.

#### **When did hepatitis B vaccine become available?**

The first hepatitis B vaccine became commercially available in the United States in 1982. In 1986, a hepatitis B vaccine produced by recombinant DNA technology was licensed, and a second recombinant-type hepatitis B vaccine was licensed in 1989. The two recombinant DNA vaccines (Recombivax HB® and Engerix-B®) are the only hepatitis B vaccine preparations currently used in the United States. (There are additional products licensed in the U.S. that contain these vaccines in combination with other vaccines.)

#### **Who should get this vaccine?**

Hepatitis B vaccine, usually a three-dose series, is recommended for all children 0-18 years of age. It is recommended for infants beginning at birth in the hospital. All older children who did not get all the recommended doses of hepatitis B vaccine as an infant should complete their vaccine series as soon as possible. Most states require hepatitis B vaccine for school entry. Adolescents who are just starting

their series will need two or three doses, depending on their age and the brand of vaccine used. Adults at increased risk of acquiring HBV infection should also be vaccinated. In addition, the vaccine can be given to any person who desires protection from hepatitis B.

#### **Who is at increased risk of HBV infection?**

- Healthcare workers and public safety workers with reasonably anticipated risk for exposure to blood or blood-contaminated body fluids
  - Men who have sex with men
  - Sexually active people who are not in long-term, mutually monogamous relationships
  - People seeking evaluation or treatment for a sexually transmitted disease
  - Current or recent injection drug users
  - Inmates of long-term correctional facilities
  - People with end-stage kidney disease, including predialysis, hemodialysis, peritoneal dialysis, and home dialysis patients
  - Staff and residents of institutions or group homes for the developmentally challenged
  - Household members and sex partners of people with chronic HBV infection
  - Susceptible (non-infected and non-vaccinated) people from United States populations known to previously or currently have high rates of childhood HBV infection, including Alaska Natives, Pacific Islanders, and immigrants or refugees from countries with intermediate or high rates of chronic HBV infection. To see a list of these countries, go to [wwwnc.cdc.gov/travel/yellowbook/2010/chapter-2/hepatitis-b.aspx](http://wwwnc.cdc.gov/travel/yellowbook/2010/chapter-2/hepatitis-b.aspx)
  - International travelers to regions with high or intermediate rates of HBV infection. To see a list of these countries, go to [wwwnc.cdc.gov/travel/yellowbook/2010/chapter-2/hepatitis-b.aspx](http://wwwnc.cdc.gov/travel/yellowbook/2010/chapter-2/hepatitis-b.aspx)
- In addition, any adult who wishes to be protected from HBV infection should be vaccinated (without having to acknowledge a specific risk factor).

#### **Who recommends this vaccine?**

The Centers for Disease Control and Prevention (CDC), the American Academy of Pediatrics (AAP), the American Academy of Family Physicians (AAFP), the American College of Physicians (ACP), and American College of Obstetricians and Gynecologists (ACOG) recommend this vaccine.

#### **Is hepatitis B vaccine safe?**

Yes. Hepatitis B vaccines have been demonstrated to be safe when administered to infants, children, ado-

lescents, and adults. Since 1982, more than an estimated 70 million adolescents and adults and more than 50 million infants and children have received at least one dose of hepatitis B vaccine in the United States. The majority of children who receive this vaccine have no side effects. Serious reactions are rare.

**What side effects have been reported with this vaccine?**

Of those children experiencing a side effect, most will have only a very mild reaction, such as soreness at the injection site (fewer than one out of three children) or low-grade fever. Adults are slightly more likely to experience such mild symptoms. Serious allergic reactions following hepatitis B vaccination are rare.

**How effective is this vaccine?**

After three properly administered doses of vaccine, at least 9 out of 10 healthy young adults and more than 9 out of 10 infants, children, and adolescents develop protective antibodies and subsequent immunity to HBV infection.

**Why is this vaccine recommended for all babies when most of them won't be exposed to HBV for many years, if then?**

There are four reasons for recommending that all infants receive hepatitis B vaccine, starting at birth. First, people have a very high risk for developing chronic HBV infection if they become infected at birth or during childhood, with an increased risk of dying prematurely from liver cancer or cirrhosis. In addition, HBV infection in infants and young children usually produces no symptoms, so these individuals can spread the infection to others without knowing it.

Third, most early childhood spread of HBV occurs in households where a person has chronic HBV infection, but the spread of HBV has also been recognized in daycare centers and schools.

Fourth, long-term protection following infant vaccination is expected to last for decades and will ultimately protect against acquiring infection at any age.

**Should I be tested before I get the vaccine to see if I'm already infected or immune?**

Blood testing before vaccination is not recommended for the routine vaccination of infants, children, and adolescents. However, children born in countries where HBV is moderate or highly endemic should be tested to be sure they are not already infected.

Testing can be done at the same visit when the first dose of hepatitis B vaccine is given. Vaccinating a person already immune to or infected with HBV will not help or harm the person. The main reason for testing people at increased risk for HBV is to determine if they are infected in order to refer them for medical care.

**Should I get my blood tested after getting the vaccine series to make sure it worked?**

Testing after vaccination is not recommended routinely. Testing after vaccination is recommended only for people whose medical care depends on knowledge of their response to the vaccine. This includes infants born to HBV-infected mothers; healthcare and public safety workers at risk of continued exposure to blood on the job; immune-compromised people (e.g., people with AIDS or on hemodialysis); and sex and needle-sharing partners of people with chronic HBV infection.

**Who should NOT receive hepatitis B vaccine?**

People who had a serious allergic reaction to one dose of hepatitis B vaccine should not have another dose of hepatitis B vaccine. People with a history of hypersensitivity to yeast should not receive this vaccine. People with a moderate or severe acute illness should postpone receiving the vaccine until their condition is improved.

**Can I get this vaccine when I am pregnant?**

Yes.

**I'm an adult who wants hepatitis B vaccination. How can I pay for the shots?**

If you have insurance, the cost of hepatitis B vaccination might be covered. If not, these shots are often available at low cost through special programs or from health departments. Call your local health department for details.

**Will hepatitis B vaccination protect me from hepatitis A or hepatitis C?**

No. Hepatitis A and hepatitis C are different diseases caused by different viruses. There is a vaccine for hepatitis A, but there is no vaccine for hepatitis C at this time.