

# 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.

### How does hepatitis B virus spread?

The virus is found in the blood or certain body fluids and 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
- Poor infection control practices in medical settings
- Sharing of blood sugar (diabetes) testing equipment
- 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

Hepatitis B virus 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.

Hepatitis B 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 hepatitis B develop symptoms. Children under age 5 years rarely have symptoms. When people have symptoms, they usually appear between 60 and 150 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 (jaundice)
- Dark-colored urine
- Clay-colored stool
- Loss of appetite, nausea, and/or vomiting
- 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 5 of every 100 adults, 25–50 of every 100 children age 1–5 years, and up to 90 of 100 infants will remain infectious and carry hepatitis B virus in their bodies for life. This is called chronic (life-long) infection. People with chronic hepatitis B virus infection should not be excluded from work, school, play, childcare, or other settings.

The majority of people with chronic hepatitis B infection feel healthy and do not develop serious problems related to the infection; however, about 25% of people infected as children and 15% infected as adults will die prematurely due to cirrhosis (scarring of the liver), liver failure, and liver cancer later in life.

### How serious is infection with hepatitis B?

Hepatitis B can be very serious. Infection with this virus can cause 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 acute (recently acquired) hepatitis B.

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

CDC estimates that about 21,600 cases of acute hepatitis B occurred in the U.S. in 2018.

Since the introduction of routine vaccination against hepatitis B virus infection, there has been a significant

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decline in U.S. cases among children and adolescents, the group with the largest increase in hepatitis B vaccination coverage.

However, chronic hepatitis B virus infection remains a major problem. An estimated 880,000 to 1.94 million people are chronically infected with hepatitis B in the United States. Many people chronically infected with hepatitis B virus do not know they are infected. Most cases of chronic hepatitis B virus infection in the United States are found in immigrants or refugees from Asia, Africa, the Pacific Islands, and Eastern Europe. Worldwide, the World Health Organization estimates that more than 296 million people were chronically infected with hepatitis B virus, about 1.5 million new infections occurred, and about 820,000 persons died from hepatitis B-related liver failure or liver cancer in 2019.

#### **How do people know if they have hepatitis B infection?**

Only blood tests can tell whether or not a person is currently infected and whether or not a person has been infected in the past. If the blood 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 and could have chronic hepatitis B virus infection. For more details about the interpretation of hepatitis B testing, see [www.immunize.org/catg.d/p2110.pdf](http://www.immunize.org/catg.d/p2110.pdf).

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

There are several FDA-approved medications that might help a person who has chronic hepatitis B virus 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. However, effective treatments are available for hepatitis C.

#### **What should you do if you have been exposed to hepatitis B virus?**

If you think you've been exposed to the virus, 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, often called HBIG, a blood product containing protective hepatitis B virus 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. Hepatitis B vaccines produced by recombinant DNA technology have been available since 1986. Four hepatitis B vaccines are currently available in the United States: Recombivax HB (Merck, licensed in 1986), Engerix-B (GSK, licensed in 1989), Heplisav-B (Dynavax, licensed in 2017), and PreHevbrio (VBI, licensed in 2021). There are additional products licensed in the United States that contain these vaccines in combination with other vaccines.

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

The hepatitis B vaccination series is recommended for all children, beginning at birth. Most states require documentation of hepatitis B vaccination for school entry. Adolescents and adults through age 59 years should be vaccinated if not previously vaccinated. Adults 60 years and older at increased risk for hepatitis should be vaccinated; all other adults 60 and older also may be vaccinated.

#### **Who is at increased risk of hepatitis B infection?**

Anyone who is unvaccinated can get hepatitis B. Certain behaviors increase the risk of exposure to the hepatitis B virus or increase the risk of serious infection. People at increased risk of infection include:

- Healthcare workers and public safety workers with reasonably anticipated risk for exposure to blood or blood-contaminated body fluids
- People with diabetes
- Men who have sex with men
- People with HIV infection
- 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

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- People with end-stage kidney disease, including pre-dialysis, hemodialysis, peritoneal dialysis, and home dialysis patients
- People with chronic liver disease
- Staff and residents of institutions or group homes for the developmentally challenged
- Household members and sex partners of people with chronic hepatitis B virus infection
- Susceptible (non-infected and non-vaccinated) people from United States populations known to previously or currently have high rates of childhood hepatitis B infection, including Alaska Natives, Pacific Islanders, and immigrants or refugees from countries with intermediate or high rates of chronic hepatitis B virus infection; see a map of these countries at [wwwnc.cdc.gov/travel/yellowbook/2020/travel-related-infectious-diseases/hepatitis-b#map404](http://wwwnc.cdc.gov/travel/yellowbook/2020/travel-related-infectious-diseases/hepatitis-b#map404).
- Travelers to regions with high or intermediate rates of hepatitis B virus infection; (see a map of these countries at [wwwnc.cdc.gov/travel/yellowbook/2020/travel-related-infectious-diseases/hepatitis-b](http://wwwnc.cdc.gov/travel/yellowbook/2020/travel-related-infectious-diseases/hepatitis-b))

#### Who recommends this vaccine?

The Centers for Disease Control and Prevention (CDC), American Academy of Pediatrics (AAP), American Academy of Family Physicians (AAFP), American College of Physicians (ACP), American College of Obstetricians and Gynecologists (ACOG), American College of Nurse-Midwives, American Pharmacists Association, and Society for Healthcare Epidemiology of American all recommend this vaccine.

#### Is hepatitis B vaccine safe?

Yes. Hepatitis B vaccines have been demonstrated to be safe when administered to infants, children, adolescents, 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 a properly administered 2 or 3 dose series (depending on brand of vaccine), at least 9 of 10 healthy young adults and more than 9 of 10 infants, children, and adolescents develop protective antibodies and subsequent immunity to hepatitis B virus infection.

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

There are four reasons for recommending that all infants receive hepatitis B vaccine, starting within 24 hours of birth. First, people have a very high risk for developing chronic hepatitis B virus infection if they become infected at birth or during childhood, with an increased risk of dying prematurely from liver cancer or cirrhosis.

Second, hepatitis B 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 hepatitis B occurs in households where a person has chronic hepatitis B virus infection, but the spread of the virus 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.

#### Do I have to be tested to see if I'm already infected or immune before I get the vaccine?

It is not necessary to have the results of blood tests for hepatitis B infection or immunity before vaccinating. Vaccination will not help or harm a person who is already immune or infected with hepatitis B. When testing is recommended, blood may be drawn for testing and the first dose of vaccine given at the same visit, so you do not delay the process of being protected from hepatitis B. If test results later show that you are already infected or immune, no additional doses of vaccine will be given.

If you are recommended to be tested and vaccinated, but only vaccination is available, you should not delay vaccination. Testing may be done later, as long as you wait at least one month after your most recent dose of hepatitis B vaccine. Even if delayed, getting tested

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is important, if recommended for you. Testing can determine if you are already infected so you can be referred 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 hepatitis B-infected mothers; healthcare and public safety workers at reasonable risk of exposure to blood on the job; immunocompromised people (e.g., people with AIDS or on hemodialysis); and sex and needle-sharing partners of people with chronic hepatitis B virus 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 a serious allergy to yeast may only receive the PreHevbrio brand of hepatitis B vaccine (made by VBI) that contains no yeast protein. 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?**

Most insurance policies cover hepatitis B vaccination without a deductible or copay. If you are uninsured or your insurance does not cover hepatitis B vaccine, 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 to prevent hepatitis A, but there is no vaccine for hepatitis C.