

Hepatitis B is a viral infection that attacks the liver. An infection can be short term or lead to a lifelong chronic infection resulting in scarring of the liver (cirrhosis) or liver cancer. More than half of those infected with hepatitis B do not exhibit symptoms, mostly children. The result is that many people never know they are infected with hepatitis B, and they unwittingly transmit the virus to others. For these reasons, the Centers for Disease Control and Prevention (CDC) recommends that all children receive three doses of the hepatitis B vaccine, beginning with a dose no more than 12 hours after birth.

Q. What is hepatitis B?

A. Hepatitis B is an infection of the liver caused by hepatitis B virus. Hepatitis B infections can occur as an infection with no or mild symptoms that last several weeks or a lifelong, chronic illness resulting in scarring of the liver (cirrhosis) or liver cancer. The likelihood of developing a chronic hepatitis B infection increases when children are infected early in life. Ironically, this is the same group that is most likely to experience asymptomatic infection, so they often don't know they were infected. For example, about 90 of 100 infants less than 1 year of age and about 30 to 50 of 100 children infected between ages 1 and 5 years develop a chronic infection. However, only about five of 100 adult infections result in a chronic form of the disease.

Q. How is hepatitis B spread?

A. Hepatitis B is most commonly spread by blood from infected people. Of interest, because of the large quantities of hepatitis B virus in the blood during infection, it is actually more contagious than HIV. In fact, a teaspoon of blood from a person infected with hepatitis B virus can contain as many as 5 billion infectious virus particles. This means that exposure to even minuscule amounts of blood — not visible to the naked eye — can be sufficient to infect a susceptible individual. Exposure to bodily fluids that contain small quantities of blood, such as saliva, semen and vaginal fluids, can also spread the infection to others. In addition to its infectious nature, hepatitis B virus is also hardy. It can remain viable for up to seven days on objects that might contain these bodily fluids, such as washcloths, toothbrushes or razors. Hepatitis B virus is not spread by air, food or water. The virus is most commonly transmitted by infected mothers to their babies during birth, sex with an infected partner, sharing injection drug equipment, and contact with blood or sores of an infected person. The latter route of exposure is a particular concern to healthcare workers and frontline responders. Yet, the reality is that every year some people are infected without ever knowing where or by whom they were exposed to this virus.

Q. What is my child's risk of getting hepatitis B infection?

A. About 1 million to 2 million people in the United States are chronically infected with hepatitis B virus. Because many of these people do not realize they are infected and because infected children often do not experience symptoms during infection, it is impossible to prevent exposure simply through vigilance. Further, as children get older and become more socially active, actions like sharing personal use items or experimenting with other high-risk activities may increase the likelihood of infection. Therefore, vaccinating infants immediately after birth protects them during all of these periods of risk.

Q. Is there a hepatitis B vaccine?

A. Yes. The hepatitis B vaccine is made by isolating the gene that makes the surface protein of the virus and inserting it into yeast cells. As the yeast cells replicate in the lab, they also produce the hepatitis B viral surface protein. The newly produced surface proteins are purified away from the other parts of the yeast cells to make the vaccine.

Q. Is the hepatitis B vaccine safe?

A. Yes. About three to nine of every 100 children will develop pain or soreness at the injection site or a mild fever. About 20 of every 100 children will experience headache, fatigue or irritability. In extremely rare cases — specifically, in about one of every 600,000 recipients — a severe allergic reaction called anaphylaxis may occur. While anaphylaxis can be treated, it is quite frightening. For this reason, people should remain in the doctor's office for about 15 minutes after getting this or any vaccine.



Hepatitis B: What you should know

Q. Who should get the hepatitis B vaccine?

A. The hepatitis B vaccine is recommended as a series of three doses for all children. The first dose is recommended to be given within 12 hours of birth, with the second dose at 1 to 2 months of age and the third dose between 6 and 18 months of age. Infants of mothers who were found to be infected with hepatitis B virus prior to or during pregnancy or whose previous exposure to hepatitis B virus is unknown are recommended to receive the third dose at 6 months of age. If older children did not receive the vaccine in infancy, they should receive the three-dose series as soon as is feasible.

Babies born to hepatitis B-positive moms should also receive hepatitis B immune globulin (HBIG) shortly after birth.

High-risk adults not previously immunized and those who wish to be protected from hepatitis B virus should also get three doses of the vaccine. High-risk individuals include people having sex with someone who is infected with hepatitis B virus; sexually active persons not in a long-term, mutually monogamous relationship; people at risk of or being treated for HIV or other sexually transmitted diseases; men who have sex with men; people living with someone infected with hepatitis B; healthcare and public safety workers at risk of exposure to blood or blood-contaminated body fluids; persons with end-stage kidney disease or type-1 diabetes; and international travelers to regions with increased risk for exposure to hepatitis B.

Q. What if I get the hepatitis B vaccine, but am still not protected?

A. Most people who get the hepatitis B vaccine will be protected. About 90 to 95 of every 100 children and adults less than 40 years of age will be protected after three doses. However, some will not. In these instances, those who are not protected after getting three doses of the vaccine are recommended to get an additional three doses. Following six doses (two complete three-dose series), about five of 100 people still will not have a measurable response. These people should be tested for chronic hepatitis B disease. If they are found not to be chronically infected with hepatitis B, they are still susceptible to hepatitis B and should talk to their doctor about precautions, particularly following possible exposure to hepatitis B.

This information is provided by the Vaccine Education Center at Children's Hospital of Philadelphia. The Center is an educational resource for parents and healthcare professionals and is composed of scientists, physicians, mothers and fathers who are devoted to the study and prevention of infectious diseases. The Vaccine Education Center is funded by endowed chairs from Children's Hospital of Philadelphia. The Center does not receive support from pharmaceutical companies.

Q. Why are newborns recommended to get a hepatitis B vaccine?

A. Before a hepatitis B vaccine was available, each year about 18,000 children were infected with hepatitis B during the first 10 years of life. About half of these children were infected with hepatitis B virus that was present in the mother's blood present in the birth canal during delivery. The other half were infected by another household or family member or the source of their infection was never determined. Public health officials originally implemented recommendations to check the hepatitis B status of all women during pregnancy. Unfortunately, infants were still being infected by their mothers during birth when tests were not completed, results were wrong, or exposure to the virus occurred after the test but before delivery. In addition, this recommendation did not help the other 9,000 children every year who were infected by someone other than their mothers during birth. Therefore, since the vaccine was safe, some babies were infected at birth, and others were unwittingly exposed to the disease early in life in other ways, it was determined that the best way to protect all children was to implement a universal newborn vaccination recommendation.

Some parents are hesitant to give consent for their new baby to get a vaccine so soon after birth; but the reality is that babies can be infected with the virus soon after birth, either because of exposure to the mother's contaminated blood during delivery or to someone else who is infected. Since most infected children do not show symptoms of infection, treatment is not typically an option. Sadly, every year adults are diagnosed with liver cancer or disease caused by chronic hepatitis B infections that they were not aware they had.



Q. Do I need to get hepatitis B vaccine if it has been a long time since I was immunized?

No. Studies have shown protection following hepatitis B vaccination is long lasting.

Pregnant women are recommended to be tested for hepatitis B during pregnancy even if they were previously vaccinated to ensure proper planning and care of the baby if mom tests positive for hepatitis B.

 The Children's Hospital
of Philadelphia®

 VACCINE EDUCATION CENTER

vaccine.chop.edu

Children's Hospital of Philadelphia, the nation's first pediatric hospital, is a world leader in patient care, pioneering research, education and advocacy.

©2017 Children's Hospital of Philadelphia, All Rights Reserved. 17VEC0137/NP/03-17