

Hepatitis B

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Hepatitis B is a serious liver disease that can affect babies and children, not just adults who engage in risky behaviors or health and safety workers who are exposed to human blood. It's important to protect infants and young children from Hepatitis B because they are more likely than adults to develop serious chronic (long-term) infection that can result in liver damage and liver cancer.

Understanding Hepatitis B

Hepatitis means inflammation of the liver. Hepatitis B is a contagious liver disease that results from infection with the hepatitis B virus. When first infected, a person can develop an illness which can be mild, with few or no symptoms, or an illness that is serious, requiring hospitalization and sometimes leading to liver failure. Acute hepatitis B refers to the period when a person first becomes infected with the virus. This is the time a person is most likely to have symptoms. Some people develop antibodies (proteins found in the blood or body fluids that help fight infection) and these people recover, which leads to protection from future infection. Other people, especially infants and young children, do not recover. Instead, the infection remains and becomes a "chronic" or lifelong infection.

Chronic hepatitis B refers to infection when the hepatitis B virus continues to be active in the person's body for more than 6 months. Over time, chronic infection damages the liver and causes scarring, liver failure, and sometimes liver cancer. While there is no cure for hepatitis B infection, treatment can slow the damage to the liver. Hepatitis B is a leading cause of liver transplants in the United States; about 2,000 to 4,000 people die each year from hepatitis B-related liver failure or liver cancer. Hepatitis B is especially serious for infants and young children. Infected children have up to a 90% chance of developing chronic infection.

Symptoms of Hepatitis B

Symptoms of acute hepatitis B include fever, fatigue, loss of appetite, nausea, vomiting, pain in joints and stomach, dark urine, grey-colored stools, and jaundice (when skin and eyes turn yellow). Symptoms usually appear within 6 weeks to 6 months after exposure and can last for 2 weeks to 12 weeks. However, many people with hepatitis B infection do not have symptoms and do not know they are infected until they have signs or symptoms of advanced liver damage.

"Most children who are infected with Hepatitis B don't know they have it because they never feel sick," says Dr. Meg Fisher of the American Academy of Pediatrics. "They could be symptom-free until the first sign of a serious health problem."

How Hepatitis B Spreads to Infants and Children

Hepatitis B virus is spread through exposure to blood. A baby whose mother has hepatitis B is at highest risk for becoming infected with hepatitis B during delivery. Preventing hepatitis B infection at birth can be very successful when the mother is known to have hepatitis B infection. Pregnant mothers can protect their babies from hepatitis B infection at birth by getting tested ideally at their first prenatal visit and possibly again at delivery. All babies should get vaccinated starting in the first few hours of life (or before discharge from the hospital if the mother's test result is negative).

Hepatitis B virus can be spread by contact with an infected person's blood from cuts or sores, bites, or sharing personal items, such as toothbrushes. Breastfeeding does not increase the risk of spreading hepatitis B to babies. It is not always certain how the infection is spread when infants and children become infected. Since the virus can remain contagious for 1 week or longer in tiny amounts of dried body fluids, breaks in the skin or mucus membranes can allow entry of the virus without obvious exposure to blood.

According to Dr. Trudy Murphy, a pediatrician at the Centers for Disease Control and Prevention, "we estimate that there were about 35,000 people who became infected with hepatitis B in 2010." As many as 1.4 million people in the United States are living with chronic hepatitis B infection. More than half of chronically infected people don't know they are infected with the hepatitis B virus because they do not have symptoms, but according to Dr. Murphy, "they can still spread the virus to infants and children through normal household activities—that's one of the reasons it is important for children to receive the hepatitis B vaccine when they are very young."

Hepatitis B is Preventable with Safe and Effective Vaccines

Hepatitis B (Hep B) vaccine is considered the first anti-cancer vaccine because since it was first licensed in 1981, it has led to remarkable decreases in liver cancer

caused by Hepatitis B. This vaccine has been safely given to more than 100 million infants, children, and adults in the United States. For best protection from hepatitis B infection, a baby receives 3 or 4 shots (depending on the age of the baby and the brand of vaccine) over a 6-month or longer period. The first shot is given within hours after birth. Side effects are mild and don't last long. For example, 1 out of 4 children will have soreness where the shot was given and 1 out of 15 infants will have a fever of 99.9 degrees Fahrenheit or higher. Very rarely, the vaccine can cause an allergic reaction.

The hepatitis B vaccine is very effective. Since vaccination was recommended for all infants, hepatitis B infections have declined by at least 94% in children. Studies show that the protection provided by the hepatitis B vaccine lasts for more than 22 years.

Why is a Birth Dose of the Hep B Vaccine Important?

About 25,000 pregnant women with chronic hepatitis B give birth each year in the United States. Unfortunately, some of these women are not tested and do not know they are infected with hepatitis B—and that they can pass the infection on to their infants during birth or after the baby is born. Other infants return to homes with family members who have chronic hepatitis B infection.

It's very easy to pass hepatitis B virus to an infant. Infants who are infected at birth or during childhood and who are not protected by vaccination have up to a 90% chance of developing life-long chronic infection, which can lead to serious liver disease—or death—even as young as adolescence or as young adults. Giving the Hep B vaccine at birth is the best way to start immediate protection against hepatitis B infection during the ages when chronic infection is most likely to happen. When a mom has hepatitis B, the vaccine and hepatitis B immune globulin (HBIG) is given to the baby to protect against hepatitis B. But the shots work best when given within the first 12 hours of life. HBIG is a medicine that gives a baby's body a "boost" or extra help to fight the virus as soon as he or she is born. The HBIG shot is generally only given to babies of mothers who have Hepatitis B.

According to Dr. Fisher, "The hepatitis B vaccine has the best chance of preventing hepatitis B infection in an infant exposed during birth or soon after if given within the first 12 hours of life." Getting the first dose of vaccine at birth and completing the vaccine series is the best and safest defense against hepatitis B and the start of lifelong protection against the hepatitis B virus. Dr. Fisher acknowledges, "Since many people don't have any symptoms, they may not even know they have hepatitis B. Starting Hep B vaccination at birth will also provide protection from a hepatitis B infection that can happen after the infant comes home, later in childhood or in adulthood."

Benefits of the Hep B vaccine

- Reduces illness, including liver damage, liver cancer and death.
- Reduces hospitalizations.

Risks of the Hep B vaccine

- Mild side effects such as soreness at the site of injection or fever.
- Severe allergic reactions are extremely rare; they are believed to occur about once in 1.1 million doses.

Selected References

Centers for Disease Control and Prevention (CDC). Hepatitis B. In: Atkinson W, Hamborsky J, McIntyre L, Wolfe S, eds. Epidemiology and Prevention of Vaccine-Preventable Diseases (The Pink Book). 11th ed. Washington, DC: Public Health Foundation, 2009. p. 99-122. <http://www.cdc.gov/vaccines/pubs/pinkbook/default.htm>

CDC. A comprehensive immunization strategy to eliminate transmission of hepatitis B virus infection in the United States. Recommendations of the Advisory Committee on Immunization Practices (ACIP). Part 1: Immunization of infants, children and adolescents. MMWR 2005;54(RR-16):1-33. <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5416a1.htm>

The Centers for Disease Control and Prevention, the American Academy of Family Physicians, and the American Academy of Pediatrics strongly recommend vaccines.

800-CDC-INFO (800-232-4636)
<http://www.cdc.gov/vaccines>