

From the American Academy of Pediatrics *Managing Infectious Disease in Child Care and Schools*, Second Edition. For the complete book, visit www.aap.org/bookstore. For additional infectious disease resources, visit www.aapredbook.org/resources.

Hepatitis B

What is hepatitis B?

- A viral infection causing liver inflammation.
- Hepatitis B can lead to serious illness, lifelong infection, liver failure, and liver cancer.
- Hepatitis B is a blood-borne infection. Hepatitis A is spread by fecal-oral route. (See Chapter 2, “How Infection Spreads,” on page 15 for more details.)

What are the signs or symptoms?

- Flu-like (eg, muscle aches, nausea, vomiting).
- Jaundice (ie, yellowing of skin or whites of eyes, dark urine).
- Loss of appetite.
- Joint pains.
- Tiredness.
- Young children may show few or no signs or symptoms.
- Most people recover fully, but some carry the virus in their blood for a lifetime. Age at the time of infection is a major factor in progression to chronic infection.

What are the incubation and contagious periods?

- Incubation period: 45 to 160 days, with an average of 90 days
- Contagious period: As long as the virus is present in the blood of the infected person (can be for the lifetime of the infected individual, who then becomes a chronic carrier)

How is it spread?

- Most commonly through
 - ~ Blood or blood products
 - ~ Sexual contact
- Children born to infected mothers may be infected during birth.
- Uncommonly through
 - ~ Saliva
 - ~ Contact with open sores or the fluid that comes from open sores (wound exudate)
 - ~ Direct exposure to blood after injury, bites, or scratches that caused a skin break introducing blood or body fluids from a carrier to another person
- Hepatitis B virus can remain contagious on surfaces for 7 days or more.

How do you control it?

- Hepatitis B is a vaccine-preventable disease. Infants should receive vaccine at or soon after birth, with additional doses of the vaccine according to the routine immunization schedule.
- Adults who are expected as a condition of their employment to come in contact with blood are required to be offered vaccine by their employers under Occupational Safety and Health Administration (OSHA) regulations.
- Cover open wounds or sores.
- Do not permit sharing of toothbrushes or pacifiers.
- Standard precautions should be followed when blood or blood-containing body fluids are handled. For blood and blood-containing substances, these are the same precautions described by OSHA as universal precautions.
 - ~ Wear disposable gloves or, if using utility gloves, be sure the utility gloves are sanitized after use.
 - ~ Absorb as much of the spill as possible with disposable materials; put the contaminated materials in a plastic bag with a secure tie.
 - ~ Clean contaminated surfaces with detergent and water.
 - ~ Rinse with water.
 - ~ Sanitize the clean surface by wetting the entire surface with a solution of freshly diluted bleach in a 1:10 concentration. Health authorities recommend using a stronger solution of freshly diluted bleach (1:10) to disinfect surfaces that have been contaminated by blood than when blood is not involved because if hepatitis B is present, this virus is known to be more resistant to being killed by bleach than many other types of infectious agents.
 - ~ Dispose of all soiled items in plastic bags with secure ties.

What are the roles of the caregiver/teacher and the family?

- Report the infection to the health department. If the health professional who makes the diagnosis does not inform the health department that the child who has the infection is a participant in a child care program or school, this could lead to a delay in controlling the spread.
- Routinely check that children complete hepatitis B vaccine series according to the most recent recommendations.

➤ *continued*

Hepatitis B, continued

- Practice standard precautions for handling blood and other body fluids at all times, as carriers of this infection may not be identified to staff. Check and follow the facility's plan for handling exposure to blood-borne pathogens as required by OSHA.
- Contact the infected child's health professional for a treatment plan.

Exclude from group setting?

Yes, if a child with known hepatitis B exhibits any of the following:

- Weeping sores that cannot be covered.
- A bleeding problem.
- Biting or scratching behavior that would lead to bleeding by the child with hepatitis B.
- Generalized dermatitis that may produce wounds or weepy tissue fluids.
- The child meets other exclusion criteria, such as fever with behavior change (see "Conditions Requiring Temporary Exclusion" on page 41).

Readmit to group setting?

- When skin lesions are dry or covered
- When the child is able to participate and staff determine that they can care for the child without compromising their ability to care for the health and safety of the other children in the group

Comments

- Risk of hepatitis B transmission in child care and schools is very small.
- With immunization of newborns and children, the risk is even lower.
- Most children with hepatitis B infection should be admitted to child care or school without restrictions. Admission of children with dermatitis, bleeding problems, or aggressive behavior, including biting, should be handled on an individualized basis.
- Hepatitis C also is transmitted through blood and causes a disease similar to hepatitis B. It should be managed the same as hepatitis B.
- Hepatitis D also is transmitted through the blood, but only occurs in those previously infected with hepatitis B. Hepatitis D can be a more severe disease. It also is managed just like hepatitis B.
- Currently, there are no hepatitis C or hepatitis D vaccines available.

