# Hepatitis B

## Traveler Summary

### Key Points

- Hepatitis B is a potentially serious viral infection of the liver that occurs worldwide and is acquired through contact with infected blood, blood products, or other bodily fluids.
- Risk is increased for travelers going to developing countries who are likely to have a new sex partner; engage in tattooing, body piercing, or acupuncture; require medical or dental care in local facilities; or who are health care workers (HCWs).
- Symptoms vary by age and when present include fever, fatigue, loss of appetite, nausea, vomiting, stomach pain, dark urine, clay-colored stools, joint pain, and jaundice (yellow eyes and skin).
- Consequences of infection include possible progression to a chronic carrier state (virus remains in the body) as well as liver damage or liver cancer.
- Prevention includes avoiding risk behaviors.
- Hepatitis B (HepB) vaccination is universally recommended for all persons aged 19-59 years and persons 60 years and older with risk factors for hepatitis B infection. HepB vaccine is routinely given as 3 doses: 1 each at 0, 1-2, and 6-18 months. Accelerated schedules and a 2-dose adult vaccine are also available.
- Vaccine side effects are most commonly injection-site reactions, headache, and nausea.
- Duration of vaccine protection following a completed series is at least 30 years.
- Postexposure prevention with immune globulin (IG), HepB vaccine, or both may be recommended as soon as possible after exposure (preferably within 24 hours).

### Introduction

Hepatitis B, a serious, potentially chronic liver infection occurring worldwide, is caused by the hepatitis B virus (HBV) and is transmitted mainly through contact with contaminated blood, blood products, and other bodily fluids. More than 2 billion people worldwide have been infected with HBV and more than 240 million people have chronic, lifelong infections. Travelers going to countries with high or intermediate prevalence of chronic HBV infection are at increased risk. HBV infection is a major cause of acute and chronic liver disease and is the cause of up to 80% of liver cancers.

### Risk Areas

HBV infection prevalence is low in the general population in Central America, Mexico, North America, northern and western Europe, and northern South America; intermediate in Asia, eastern and southern Europe, Japan, the Middle East (including Israel), northern, central, and southern Africa, and Russia; and high in all socioeconomic groups in West Africa.

### Transmission

HBV is mainly transmitted via blood (through a transfusion or minor breaks in the skin and mucous membranes), bodily fluids (e.g., semen, vaginal secretions, or saliva [through bites]), or from other bodily secretions contaminated with infected blood during close contact. Transmission may also occur from mother to child before or after birth, via exposure to contaminated objects and unsterile medical supplies (such as needles or sharp instruments used during dental, surgical, tattoo, or acupuncture procedures), interpersonal contact (e.g., sharing contaminated toothbrushes, razors), and contaminated surfaces (because HBV can survive outside the human body for a prolonged period) even in the absence of visible blood.

### Risk Factors

Risk is highest for travelers going to countries with intermediate or high prevalence of HBV infection who are likely to engage in risk behaviors (such as unprotected sex with a new partner, injection-drug use, tattooing, body piercing, or acupuncture) or who require a blood transfusion or medical/dental care in local facilities.

### Symptoms

Symptoms most commonly appear about 90 days (range: 45-160 days) following exposure and their presence varies by age; at least 50% of infections are symptom free. Children younger than 5 years and newly infected immunocompromised adults may not have symptoms (compared to persons 5 years and older). When present, symptoms include fever, fatigue, loss of appetite, nausea, vomiting, stomach pain, dark urine, clay-colored stools, joint pain, and jaundice (yellow eyes and skin).

## Consequences of Infection

Complications of HBV infection can be acute (short-term) or chronic. Acute disease, which may last up to 3 months, is more severe among adults older than 60 years, but nearly all recover completely, with a death rate of less than 1.5%.

The chronic phase, following the acute phase, may result in some persons (infants, children 5 years and younger, and immunocompromised persons are at highest risk) becoming "chronic carriers," with HBV remaining in the liver and blood. Persons with chronic infection may not have symptoms or evidence of liver disease until onset of liver damage or cancer, leading to premature death in 25% of chronic carriers infected in childhood and 15% to 25% of chronic carriers infected after childhood. The risk of acute liver failure is increased in pregnant women, with consequences to the fetus, including premature delivery, suffocation, and death. HBV-infected persons are susceptible to coinfection with hepatitis D virus, resulting in increased risk of liver disease and failure.

## Need for Medical Assistance

Travelers who develop symptoms of or who have been exposed to HBV should seek immediate medical attention for evaluation of the need for postexposure treatment.

## Prevention

### Nonvaccine

Avoid the risk behaviors described above.

Immune globulin, a human blood-derived product that can be used for all ages, may be used (with or without HepB vaccination) for postexposure prophylaxis.

### Vaccine

HepB vaccine is given as a routine childhood vaccination and is universally recommended for all adults aged 19-59 years and adults aged 60 years and older with risk factors for hepatitis B infection. Persons aged 60 years and older without known risk factors for hepatitis B infection may also be vaccinated. Following receipt of a complete vaccination series, most persons will be protected for at least 30 years. A combined hepatitis A-hepatitis B (HepA-HepB) vaccine is also available for persons 18 years and older in the US and for all ages elsewhere.

HepB vaccination is specifically recommended for any unvaccinated travelers going to:

- Areas with high risk of HBV infection:
    - Travelers with prolonged stays
    - Travelers with frequent, short stays in the same or other high-risk areas
    - Travelers likely to have a new sexual partner during the stay
    - Travelers likely to require medical or dental care in local facilities, including
        - Those with underlying medical illness
        - Those traveling for medical or dental care or consultation
        - Adventure travelers
        - Those who anticipate extensive use of local or public transportation
    - Travelers likely to engage in tattooing, body piercing, or acupuncture
    - HCWs
    - Any short-stay traveler wishing to be protected against HBV infection, in case medical care from local facilities might be required
- Areas with lower risk of HBV infection:

- Those with any likelihood of a new sexual partner during the stay
- HCWs
- Risk-averse travelers desiring maximum pretravel protection

## Side Effects

The most common vaccine side effects are injection-site reactions (pain, redness, itching) and fever. Headache, fatigue, and nausea also occur.

Persons with underlying medical conditions or who have concerns about the vaccine should speak to their health care provider before vaccine administration.

## Timing

HepB vaccine (Engerix-B or Recombivax HB) is given as follows:

- Routine, regardless of travel: 3 doses, 1 each at 0, 1-2 months, and 6-18 months. Infants should receive the first dose at birth. Ideally the series should be completed before travel, but even 1 or 2 doses confer some protection; however, the series should be completed upon return.
- If earlier protection is needed for travel, several accelerated schedules are available:
  - 3 doses total: 1 each at 0, 1-2 months, and 4 months
  - 4 doses total: 1 each at 0, 1, and 2 months, plus a booster at 12 months
  - 4 doses total: 1 each at 0, 7, and 21-30 days, plus a booster at 12 months

HepB vaccine (Heplisav-B), approved for use in persons 18 years and older, is given as 2 doses 28 days apart.

HepB vaccine (PreHevbrio), approved for you use in persons 18 years and older, is given as 3 doses, 1 each at 0, 1, and 6 months.

HepA-HepB vaccine (Twinrix) is given as follows:

- Persons 18 years and older: 3 doses, 1 each at 0, 1, and 6 months.
- If earlier protection is needed for travel, an accelerated schedule may be given:
  - 4 doses total: 1 each at 0, 7, and 21 to 30 days, plus a booster at 12 months.
  - This regimen should be considered for departures occurring in less than 6 months (if hepatitis A virus protection is also needed) and should not be used unless at least 2 doses can be given prior to departure.

Postexposure prevention with either IG, HepB vaccine, or both may be indicated as soon as possible after exposure (preferably within 24 hours), depending on the exposure setting and the person's vaccination status.

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