

Hepatitis B

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Module 1: [STD Question Bank](#)

Lesson 11: [Hepatitis B](#)

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Table 1.

Global Prevalence of Chronic HBV Infection, by Country

Prevalence Category	Country
High ($\geq 8\%$)	Angola, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Congo, Côte d'Ivoire, Djibouti, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Haiti, Kiribati, Kyrgyzstan, Laos, Liberia, Malawi, Mali, Mauritania, Mongolia, Mozambique, Namibia, Nauru, Niger, Nigeria, Niue, Papua New Guinea, Senegal, Sierra Leone, Solomon Islands, Somalia, South Sudan, Sudan, Swaziland, Togo, Tonga, Uganda, Vanuatu, Vietnam, Yemen, and Zimbabwe.
Intermediate (5.0-7.9%)	Albania, Bhutan, Cape Verde, China, Democratic Republic of the Congo, Ethiopia, Kazakhstan, Kenya, Marshall Islands, Moldova, Oman, Romania, Rwanda, Samoa, South Africa, Tajikistan, Tanzania, Thailand, Tunisia, Tuvalu, Uzbekistan, and Zambia.
Low Intermediate (2.0-4.9%)	Algeria, Azerbaijan, Bangladesh, Belarus, Belize, Brunei Darussalam, Bulgaria, Cambodia, Colombia, Cyprus, Dominican Republic, Ecuador, Eritrea, Federated States of Micronesia, Fiji, Georgia, Italy, Jamaica, Kosovo, Libya, Madagascar, Myanmar, New Zealand, Pakistan, Palau, Philippines, Peru, Russia, Saudi Arabia, Singapore, South Korea, Sri Lanka, Suriname, Syria, Tahiti, and Turkey.
Low ($\leq 1.9\%$)	Afghanistan, Argentina, Australia, Austria, Bahrain, Barbados, Belgium, Bolivia,

Prevalence Category Country

Bosnia and Herzegovina,
Brazil, Canada, Chile, Costa
Rica, Croatia, Cuba, Czech
Republic, Denmark, Egypt,
France, Germany, Greece,
Guatemala, Hungary,
Iceland, India, Indonesia,
Iran, Iraq, Ireland, Israel,
Japan, Jordan, Kuwait,
Lebanon, Lithuania,
Malaysia, Mexico, Morocco,
Nepal, Netherlands,
Nicaragua, Norway,
Palestine, Panama, Poland,
Portugal, Qatar, Serbia,
Seychelles, Slovakia,
Slovenia, Spain, Sweden,
Switzerland, Ukraine,
United Kingdom, United
Arab Emirates, United
States of America, and
Venezuela.

No data

Andorra, Antigua and
Barbuda, Armenia, The
Bahamas, Botswana, Chad,
Comoros, Cook Islands,
Dominica, El Salvador,
Finland, Grenada, Guinea-
Bissau, Guyana, Honduras,
Latvia, Lesotho, Lithuania,
Luxembourg, Macedonia,
Maldives, Malta, Mauritius,
Monaco, Montenegro,
North Korea, Paraguay,
Saint Kitts and Nevis, Saint
Lucia, Saint Vincent and
the Grenadines, San
Marino, Sao Tome and
Principe, Timor-Leste,
Trinidad and Tobago,
Turkmenistan, and
Uruguay.

NOTE: This table is based on data from the Travelers' Health Branch of the Centers for Disease Control and Prevention (CDC) Division of Global Migration and Quarantine. the Centers for Disease Control and Prevention (CDC)

Source:

- Schillie S, Vellozzi C, Reingold A, et al. Prevention of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices. MMWR Recomm Rep. 2018;67:1-31. [[PubMed Abstract](#)]

Table 2.

Baseline HBV Serologic Results

HBsAg	anti-HBs	anti-HBc	Interpretation	Recommended Action
(+)	(-)	(+)	Chronic HBV infection	Link to care for HBV treatment
(+)	(-)	IgM (+)	Acute HBV infection	Link to care for management and follow-up
(-)	(+)	(+)	Resolved HBV infection	Reassurance
(-)	(+)	(-)	Immune to HBV	Reassurance
(-)	(-)	(-)	Susceptible to HBV (non immune)	Vaccinate
(-)	(-)	(+)	"Isolated anti-HBc" may represent (1) prior HBV infection, (2) a false-positive test, (3) occult HBV infection, or (4) window phase of acute HBV infection	Expert consultation advised to determine optional further evaluation and management.

Abbreviations: HBV= hepatitis B Virus; HbsAg = hepatitis B surface antigen; anti-HBs = hepatitis B surface antibody; anti-HBc = hepatitis B core antibody

Table 3.

Indications for Hepatitis B Vaccination

Groups with Indication for Hepatitis B Vaccination

All infants

Unvaccinated Children Younger than 19 Years of Age

Persons at Risk for HBV Infection by Sexual Exposure

- Sex partners of HBsAg-positive persons
- Sexually active persons who are not in a long-term, mutually monogamous relationship (e.g. persons with more than one sex partner during the previous 6 months)
- Persons seeking evaluation or treatment for a sexually transmitted infection
- Men who have sex with men

Persons at Risk for Infection by Percutaneous Exposure

- Persons who currently or recently injected drugs
- Household contacts of HBsAg-positive persons
- Residents and staff of facilities for developmentally disabled persons
- Health care and public safety personnel with reasonably anticipated risk for exposure to blood or blood-contaminated body fluids
- Hemodialysis, predialysis, peritoneal dialysis, and home dialysis patients
- Persons with diabetes aged 19-59 years of age
- Persons with diabetes 60 years of age and older at the discretion of the treating clinician

Others at Increased Risk of Acquiring HBV Infection

- International travelers to countries with high or intermediate levels of endemic HBV infection (HBsAg prevalence of 2% or greater)
- Persons with hepatitis C virus infection
- Persons with chronic liver disease (including, but not limited to, persons with cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, and an ALT or AST level greater than twice the upper limit of normal)
- Persons with HIV infection
- Incarcerated persons

Persons Desiring Protection Against HBV

Abbreviations: ACIP = Advisory Committee on Immunization Practices; HBsAg: hepatitis B surface antigen; HBV = hepatitis B virus; ALT = alanine aminotransferase; AST = aspartate aminotransferase

Source:

- Schillie S, Vellozzi C, Reingold A, et al. Prevention of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices. MMWR Recomm Rep. 2018;67:1-31. [[PubMed Abstract](#)]

Table 4.

Interpretation of Test Results for Hepatitis B Virus Infection

HBsAg	Total anti-HBc	IgM anti-HBc	Anti-HBs	HBV DNA	Interpretation
-	-	-	-	-	Never infected; susceptible
+	-	-	-	+ or -	Early acute infection, <i>or</i> Transient (up to 18 days) after vaccination
+	+	+	-	+	Acute infection
-	+	+	+ or -	+ or -	Acute resolving infection
-	+	-	+	-	Recovered from past infection and immune
+	+	-	-	+	Chronic infection
-	+	-	-	+ or -	Isolated core antibody False-positive (susceptible), <i>or</i> Past infection (resolved), <i>or</i> “low-level” chronic infection (unlikely) Passive transfer of anti-HBc to infant
-	-	-	+	-	Immune if anti-HBs concentration is ≥ 10 IU/mL completing vaccine series, <i>or</i> Passive transfer after hepatitis B immunization (3 to 6 months)

Abbreviations: anti-HBc = antibody to hepatitis B core antigen; anti-HBs = antibody to hepatitis B surface antigen; HBV DNA = hepatitis B virus deoxyribonucleic acid; IgM = immunoglobulin class M.

Source:

- Schillie S, Vellozzi C, Reingold A, et al. Prevention of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices. MMWR Recomm Rep. 2018;67:1-31. [[PubMed Abstract](#)]

Table 5.

Interpretation of Test Results for Hepatitis B Virus Infection

HBsAg	Anti-HBc	Anti-HBs	Interpretation
Negative	Negative	Negative	Never infected; susceptible
Positive	Negative	Negative	Early acute infection, <i>or</i> Transient (up to 18 days) after vaccination
Negative	Positive	Positive	Recovered from past infection and immune
Positive	Positive	Negative	Chronic infection
Negative	Positive	Negative	Isolated core antibody <ul style="list-style-type: none"> • Past infection (resolved), <i>or</i> • False-positive (susceptible), <i>or</i> • “Low-level” chronic infection (unlikely to be infectious), <i>or</i> • Passive transfer of anti-HBc to infant born to HBsAg-positive mother
Negative	Negative	Positive	Immune if anti-HBs concentration is 10 mIU/mL or greater after completing the vaccine series, <i>or</i> Passive transfer after hepatitis B immune globulin administration (for 3 to 6 months)

Abbreviations: anti-HBc = antibody to hepatitis B core antigen; anti-HBs = antibody to hepatitis B surface antigen; HBsAg = hepatitis B surface antigen.

Source:

- Schillie S, Vellozzi C, Reingold A, et al. Prevention of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices. MMWR Recomm Rep. 2018;67:1-31. [[PubMed Abstract](#)]

Table 6.

Postexposure Management of Health Care Personnel after Occupational Exposure to HBV

HCP Status	Postexposure Testing		Postexposure Management	
	Source Patient (HBsAg)	HCP testing (anti-HBs)	HBIG	Vaccination
Documented responder after completing series (≥ 3 doses)	No action needed			
Documented nonresponder after two complete series	Positive/unknown	Not indicated	HBIG x 2 separated by 1 month	—
	Negative	No action needed		
Response unknown after complete series	Positive/unknown	<10 mIU/mL	HBIG x 1	Initiate revaccination
	Negative	<10 mIU/mL	None	Initiate revaccination
	Any result	≥ 10 mIU/mL	No action needed	
Unvaccinated/incompletely vaccinated or persons who refuse HBV vaccine	Positive/unknown	Not indicated	HBIG x 1	Complete vaccination
	Negative	Not indicated	None	Complete vaccination

Abbreviations: HCP = health care personnel; HBsAg = hepatitis B surface antigen; anti-HBs = antibody to hepatitis B; HBIG = hepatitis B immune globulin; N/A = not applicable.

Source:

- Schillie S, Vellozzi C, Reingold A, et al. Prevention of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices. MMWR Recomm Rep. 2018;67:1-31. [[PubMed Abstract](#)]

