# The ABCs of Hepatitis

<table>
<thead>
<tr>
<th><strong>HEPATITIS A</strong> is caused by the Hepatitis A virus (HAV)</th>
<th><strong>HEPATITIS B</strong> is caused by the Hepatitis B virus (HBV)</th>
<th><strong>HEPATITIS C</strong> is caused by the Hepatitis C virus (HCV)</th>
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<tr>
<td><strong>U.S. Statistics</strong>&lt;br&gt;• Estimated 2,500 new infections in 2014</td>
<td>• Estimated 19,200 new infections in 2014&lt;br&gt;• Estimated 850,000–2.2 million people with chronic HBV infection</td>
<td>• Estimated 30,500 new infections in 2014&lt;br&gt;• Estimated 2.7–3.9 million people with chronic HCV infection</td>
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<td><strong>Routes of Transmission</strong>&lt;br&gt;Ingestion of fecal matter, even in microscopic amounts, from:&lt;br&gt;• Close person-to-person contact with an infected person&lt;br&gt;• Sexual contact with an infected person&lt;br&gt;• Ingestion of contaminated food or drinks</td>
<td>Contact with infectious blood, semen, and other body fluids primarily through:&lt;br&gt;• Birth to an infected mother&lt;br&gt;• Sexual contact with an infected person&lt;br&gt;• Sharing of contaminated needles, syringes, or other injection drug equipment&lt;br&gt;• Needlesticks or other sharp instrument injuries</td>
<td>Contact with blood of an infected person primarily through:&lt;br&gt;• Sharing of contaminated needles, syringes, or other injection drug equipment&lt;br&gt;Less commonly through:&lt;br&gt;• Sexual contact with an infected person&lt;br&gt;• Birth to an infected mother&lt;br&gt;• Needlestick or other sharp instrument injuries</td>
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<td><strong>Persons at Risk</strong>&lt;br&gt;• Travelers to regions with intermediate or high rates of Hepatitis A&lt;br&gt;• Sex contacts of infected persons&lt;br&gt;• Household members or caregivers of infected persons&lt;br&gt;• Men who have sex with men&lt;br&gt;• Users of certain illegal drugs (injection and non-injection)&lt;br&gt;• Persons with clotting-factor disorders</td>
<td>• Infants born to infected mothers&lt;br&gt;• Sex partners of infected persons&lt;br&gt;• Persons with multiple sex partners&lt;br&gt;• Persons with a sexually transmitted disease (STD)&lt;br&gt;• Men who have sex with men&lt;br&gt;• Injection drug users&lt;br&gt;• Household contacts of infected persons&lt;br&gt;• Healthcare and public safety workers exposed to blood on the job&lt;br&gt;• Hemodialysis patients&lt;br&gt;• Residents and staff of facilities for developmentally disabled persons&lt;br&gt;• Travelers to regions with intermediate or high rates of Hepatitis B (HbsAg prevalence of ≥2%)</td>
<td>• Current or former injection drug users&lt;br&gt;• Recipients of clotting factor concentrates before 1987&lt;br&gt;• Recipients of blood transfusions or donated organs before July 1992&lt;br&gt;• Long-term hemodialysis patients&lt;br&gt;• Persons with known exposures to HCV (e.g., healthcare workers after needlesticks, recipients of blood or organs from a donor who later tested positive for HCV)&lt;br&gt;• HIV-infected persons&lt;br&gt;• Infants born to infected mothers</td>
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<td><strong>Incubation Period</strong>&lt;br&gt;15 to 50 days (average: 28 days)</td>
<td>45 to 160 days (average: 120 days)&lt;br&gt;14 to 180 days (average: 45 days)</td>
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<td><strong>Symptoms of Acute Infection</strong>&lt;br&gt;Symptoms of all types of viral hepatitis are similar and can include one or more of the following:&lt;br&gt;• Loss of appetite&lt;br&gt;• Nausea&lt;br&gt;• Vomiting&lt;br&gt;• Abdominal pain&lt;br&gt;• Gray-colored bowel movements&lt;br&gt;• Joint pain&lt;br&gt;• Jaundice</td>
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<td><strong>Likelihood of Symptomatic Acute infection</strong>&lt;br&gt;• &lt; 10% of children &lt; 6 years have jaundice&lt;br&gt;• 40%–50% of children age 6–14 years have jaundice&lt;br&gt;• 70%–80% of persons &gt; 14 years have jaundice</td>
<td>• &lt; 1% of infants &lt; 1 year develop symptoms&lt;br&gt;• 5%–15% of children age 1–5 years develop symptoms&lt;br&gt;• 30%–50% of persons &gt; 5 years develop symptoms&lt;br&gt;Note: Symptoms appear in 5%–15% of newly infected adults who are immunosuppressed</td>
<td>• 20%–30% of newly infected persons develop symptoms of acute disease</td>
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<td><strong>Potential for Chronic Infection</strong>&lt;br&gt;None</td>
<td>• Among unimmunized persons, chronic infection occurs in &gt;90% of infants, 25%–50% of children aged 1–5 years, and 6%–10% of older children and adults</td>
<td>• 75%–85% of newly infected persons develop chronic infection&lt;br&gt;• 15%–25% of newly infected persons clear the virus</td>
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<td><strong>Severity</strong>&lt;br&gt;Most persons with acute disease recover with no lasting liver damage; rarely fatal</td>
<td>• Most persons with acute disease recover with no lasting liver damage; acute illness is rarely fatal&lt;br&gt;• 15%–25% of chronically infected persons develop chronic liver disease, including cirrhosis, liver failure, or liver cancer&lt;br&gt;• 1,800 persons in the United States died with HBV-related liver disease as documented from death certificates</td>
<td>• Acute illness is uncommon. Those who do develop acute illness recover with no lasting liver damage.&lt;br&gt;• 60%–70% of chronically infected persons develop chronic liver disease&lt;br&gt;• 5%–20% develop cirrhosis over a period of 20–30 years&lt;br&gt;• 1%–5% will die from cirrhosis or liver cancer&lt;br&gt;• 19,600 deaths in 2014</td>
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| **Serologic Tests for Acute Infection** | • IgM anti-HAV | • HBsAg in acute and chronic infection  
• IgM anti-HBc is positive in acute infection only | • No serologic marker for acute infection |
| **Serologic Tests for Chronic Infection** | • Not applicable—no chronic infection | • HBsAg (and additional markers as needed) | • Screening assay (EIA or CIA) for anti-HCV  
• Verification by an additional, more specific assay (e.g., nucleic acid testing (NAT) for HCV RNA) |
| **Screening Recommendations for Chronic Infection** | • Not applicable—no chronic infection  
Note: Screening for past acute infection is generally not recommended | Testing is recommended for:  
• All pregnant women  
• Persons born in regions with intermediate or high rates of Hepatitis B (HBsAg prevalence of ≥2%)  
• U.S.-born persons not vaccinated as infants whose parents were born in regions with high rates of Hepatitis B (HBsAg prevalence of ≥8%)  
• Infants born to HBsAg-positive mothers  
• Household, needle-sharing, or sex contacts of HBsAg-positive persons  
• Men who have sex with men  
• Injection drug users  
• Patients with elevated liver enzymes (ALT/AST) of unknown etiology  
• Hemodialysis patients  
• Persons needing immunosuppressive or cytotoxic therapy  
• HIV-infected persons  
• Donors of blood, plasma, organs, tissues, or semen | Testing is recommended for:  
• Persons born from 1945–1965  
• Persons who currently inject drugs or who have injected drugs in the past, even if once or many years ago  
• Recipients of clotting factor concentrates before 1987  
• Recipients of blood transfusions or donated organs before July 1992  
• Long-term hemodialysis patients  
• Persons with known exposures to HCV (e.g., healthcare workers after needlesticks, recipients of blood or organs from a donor who later tested positive for HCV)  
• HIV-infected persons  
• Children born to infected mothers (do not test before age 18 mos.)  
• Patients with signs or symptoms of liver disease (e.g., abnormal liver enzyme tests)  
• Donors of blood, plasma, organs, tissues, or semen |
| **Treatment** | • No medication available  
• Best addressed through supportive treatment | • Acute: No medication available; best addressed through supportive treatment  
• Chronic: Regular monitoring for signs of liver disease progression; some patients are treated with antiviral drugs | • Acute: Antivirals and supportive treatment  
• Chronic: Regular monitoring for signs of liver disease progression; new direct acting antiviral medications offer shorter durations of treatment and increased effectiveness, including over 90% of patients who complete treatment are cured |
| **Vaccination Recommendations** | Hepatitis A vaccine is recommended for:  
• All children at age 1 year  
• Travelers to regions with intermediate or high rates of Hepatitis A  
• Men who have sex with men  
• Users of certain illegal drugs (injection and non-injection)  
• Persons with clotting-factor disorders  
• Persons who work with HAV-infected primates or with HAV in a research laboratory  
• Persons with chronic liver disease, including HBV- and HCV-infected persons with chronic liver disease  
• Family and care givers of recent adoptees from countries where Hepatitis A is common  
• Anyone else seeking long-term protection | Hepatitis B vaccine is recommended for:  
• All infants at birth  
• Older children who have not previously been vaccinated  
• Susceptible sex partners of infected persons  
• Persons with multiple sex partners  
• Persons seeking evaluation or treatment for an STD  
• Men who have sex with men  
• Injection drug users  
• Susceptible household contacts of infected persons  
• Healthcare and public safety workers exposed to blood on the job  
• Persons with chronic liver disease, including HCV-infected persons with chronic liver disease  
• Persons with HIV infection  
• Persons with end-stage renal disease, including predialysis, hemodialysis, peritoneal dialysis, and home dialysis patients  
• Residents and staff of facilities for developmentally disabled persons  
• Travelers to regions with intermediate or high rates of Hepatitis B (HBsAg prevalence of ≥2%)  
• Unvaccinated adults with diabetes mellitus 19–59 (for those aged ≥60 years, at the discretion of clinician)  
• Anyone else seeking long-term protection | There is no Hepatitis C vaccine |
| **Vaccination Schedule** | 2 doses given 6 months apart | Infants and children: 3 to 4 doses given over a 6- to 18-month period depending on vaccine type and schedule  
Adults: 3 doses given over a 6-month period (most common schedule) | No vaccine available |

[www.cdc.gov/hepatitis](www.cdc.gov/hepatitis)