

The ABCs of Hepatitis

	HEPATITIS A is caused by the hepatitis A virus (HAV)	HEPATITIS B is caused by the hepatitis B virus (HBV)	HEPATITIS C is caused by the hepatitis C virus (HCV)
Statistics	<ul style="list-style-type: none"> Estimated 32,000 new infections in 2006 	<ul style="list-style-type: none"> Estimated 46,000 new infections in 2006 Estimated 800,000–1.4 million people with chronic HBV infection 	<ul style="list-style-type: none"> Estimated 19,000 new infections in 2006 Estimated 3.2 million people with chronic HCV infection
Routes of Transmission	<p>Ingestion of fecal matter, even in microscopic amounts, from:</p> <ul style="list-style-type: none"> Close person-to-person contact with an infected person Sexual contact with an infected person Ingestion of contaminated food or drinks 	<p>Contact with infectious blood, semen, and other body fluids, primarily through:</p> <ul style="list-style-type: none"> Birth to an infected mother Sexual contact with an infected person Sharing of contaminated needles, syringes or other injection drug equipment Needlesticks or other sharp instrument injuries 	<p>Contact with blood of an infected person, primarily through:</p> <ul style="list-style-type: none"> Sharing of contaminated needles, syringes, or other injection drug equipment <p>Less commonly through:</p> <ul style="list-style-type: none"> Sexual contact with an infected person Birth to an infected mother Needlestick or other sharp instrument injuries
Persons at Risk	<ul style="list-style-type: none"> Travelers to regions with intermediate or high rates of hepatitis A Sex contacts of infected persons Household members or caregivers of infected persons Men who have sex with men Users of certain illegal drugs (injection and non-injection) Persons with clotting-factor disorders 	<ul style="list-style-type: none"> Infants born to infected mothers Sex partners of infected persons Persons with multiple sex partners Persons with a sexually transmitted disease (STD) Men who have sex with men Injection drug users Household contacts of infected persons Healthcare and public safety workers exposed to blood on the job Hemodialysis patients Residents and staff of facilities for developmentally disabled persons Travelers to regions with intermediate or high rates of hepatitis B (HBsAg prevalence of $\geq 2\%$) 	<ul style="list-style-type: none"> Current or former injection drug users 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 Infants born to infected mothers
Incubation Period	15 to 50 days (average: 28 days)	45 to 160 days (average: 120 days)	14 to 180 days (average: 45 days)
Symptoms of Acute Infection	<p>Symptoms of all types of viral hepatitis are similar and can include one or more of the following:</p> <ul style="list-style-type: none"> Fever Fatigue Loss of appetite Nausea Vomiting Abdominal pain Clay-colored bowel movements Joint pain Jaundice 		
Likelihood of Symptomatic Acute infection	<ul style="list-style-type: none"> < 10% of children < 6 years have jaundice 40%–50% of children age 6–14 years have jaundice 70%–80% of persons > 14 years have jaundice 	<ul style="list-style-type: none"> < 1% of infants < 1 year develop symptoms 5%–15% of children age 1–5 years develop symptoms 30%–50% of persons > 5 years develop symptoms <p>Note: Symptoms appear in 5%–15% of newly infected adults who are immunosuppressed</p>	<ul style="list-style-type: none"> 20%–30% of newly infected persons develop symptoms of acute disease
Potential for Chronic Infection	None	<ul style="list-style-type: none"> Among unimmunized persons, chronic infection occurs in >90% of infants, 25%–50% of children aged 1–5 years, and 6%–10% of older children and adults 	<ul style="list-style-type: none"> 75%–85% of newly infected persons develop chronic infection 15%–20% of newly infected persons clear the virus
Severity	Most persons with acute disease recover with no lasting liver damage; rarely fatal	<ul style="list-style-type: none"> Most persons with acute disease recover with no lasting liver damage; acute illness is rarely fatal 15%–25% of chronically infected persons develop chronic liver disease, including cirrhosis, liver failure, or liver cancer Estimated 2,000–4,000 persons in the United States die from HBV-related illness per year 	<ul style="list-style-type: none"> Acute illness is uncommon. Those who do develop acute illness recover with no lasting liver damage. 60%–70% of chronically infected persons develop chronic liver disease 5%–20% develop cirrhosis over a period of 20–30 years 1%–5% will die from cirrhosis or liver cancer Estimated 8,000–10,000 persons in the United States die from HCV-related illness per year
Serologic Tests	<ul style="list-style-type: none"> IgM anti-HAV is recommended for diagnosing acute disease Screening for past infection is generally not recommended 	<ul style="list-style-type: none"> HBsAg is recommended for screening most populations See guidelines for appropriate follow-up testing as indicated in screening recommendations See guidelines for identifying and testing high-risk populations 	<ul style="list-style-type: none"> Screening assay (EIA or CIA) for anti-HCV Verification by an additional more specific assay (e.g., RIBA for anti-HCV) or nucleic acid testing for HCV RNA

	HEPATITIS A	HEPATITIS B	HEPATITIS C
Treatment	<ul style="list-style-type: none"> • No medication available • Best addressed through supportive treatment 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Acute: Antivirals and supportive treatment • Chronic: Regular monitoring for signs of liver disease progression; some patients are treated with antiviral drugs
Vaccination Recommendations	<p>Hepatitis A vaccine is recommended for:</p> <ul style="list-style-type: none"> • 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 • Anyone else seeking long-term protection 	<p>Hepatitis B vaccine is recommended for:</p> <ul style="list-style-type: none"> • All infants within 12 hours of birth • Older children who have not previously been vaccinated • 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 • 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 $\geq 2\%$) • Anyone else seeking long-term protection 	<p>There is no hepatitis C vaccine.</p>
Vaccination Schedule	<p>2 doses given 6 months apart</p>	<ul style="list-style-type: none"> • 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 	<p>No vaccine available</p>
Testing Recommendations	<p>Pre-vaccination testing (anti-HAV) can be considered for populations that have expected high rates of prior HAV infection, such as:</p> <ul style="list-style-type: none"> • Adults born in, or who lived for extensive periods in, regions with intermediate or high rates of hepatitis A • Older adolescents and adults of certain races/ethnicities (American Indians, Alaska Natives, Hispanics) • Injection drug users <p>Postvaccination testing is not recommended because of the high rate of vaccine response.</p>	<p>Testing for HBsAg (and additional markers as needed) is recommended for:</p> <ul style="list-style-type: none"> • Pregnant women • Persons born in regions with intermediate or high rates of hepatitis B (HBsAg prevalence of $\geq 2\%$) • U.S.–born persons not vaccinated as infants whose parents were born in regions with high rates of hepatitis B (HBsAg prevalence of $\geq 8\%$) • 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 • Sources of blood or body fluids involved in potential HBV exposures (e.g., needles) sticks) • Donors of blood, plasma, organs, tissues, or semen 	<p>Testing is recommended for:</p> <ul style="list-style-type: none"> • Current or former injection drug users • 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 needles) sticks, 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



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