

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)
U.S. Statistics	<ul style="list-style-type: none"> Estimated 3,500 new infections in 2013 	<ul style="list-style-type: none"> Estimated 19,800 new infections in 2013 Estimated 1.2 million people with chronic HBV infection 	<ul style="list-style-type: none"> Estimated 29,700 new infections in 2013 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 Gray-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%–25% of newly infected persons clear the virus
Severity	<p>Most persons with acute disease recover with no lasting liver damage; rarely fatal</p>	<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 1,800 persons in the United States die with HBV-related liver disease as documented from death certificates 	<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 17,000 persons in the United States die with HCV-related liver disease as documented from death certificates



	HEPATITIS A	HEPATITIS B	HEPATITIS C
Serologic Tests for Acute Infection	<ul style="list-style-type: none"> IgM anti-HAV 	<ul style="list-style-type: none"> HBsAg in acute and chronic infection IgM anti-HBc is positive in acute infection only 	<ul style="list-style-type: none"> No serologic marker for acute infection
Serologic Tests for Chronic Infection	<ul style="list-style-type: none"> Not applicable—no chronic infection 	<ul style="list-style-type: none"> HBsAg (and additional markers as needed) 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Not applicable—no chronic infection <p>Note: Screening for past acute infection is generally not recommended</p>	<p>Testing is recommended for:</p> <ul style="list-style-type: none"> All 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 Donors of blood, plasma, organs, tissues, or semen 	<p>Testing is recommended for:</p> <ul style="list-style-type: none"> 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	<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; new direct acting antiviral medications offer shorter durations of treatment and increased effectiveness, including higher rates of sustained virologic response (SVR) which is a marker for cure
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 Family and care givers of recent adoptees from countries where Hepatitis A is common Anyone else seeking long-term protection 	<p>Hepatitis B vaccine is recommended for:</p> <ul style="list-style-type: none"> 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 $\geq 2\%$) Unvaccinated adults with diabetes mellitus 19–59 (for those aged ≥ 60 years, at the discretion of clinician) 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 (most common schedule) 	<p>No vaccine available</p>