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Key Inforbits

- What is Hepatitis and the different types
- Epidemiology
- Prevention, vaccination, diagnosis, and treatment
- New and upcoming treatments
- Resources and support



Image from: <https://www.cdc.gov/hepatitis-awareness/about/world-hepatitis-day.html>

What is Hepatitis?

- Hepatitis is a series of infectious viruses that cause inflammation in the liver. Other sources of liver inflammation include injury, infections, alcohol, or drugs.

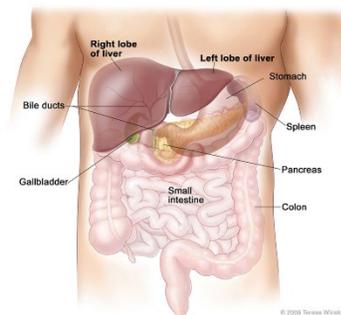


Image from: <https://www.cdc.gov/liver-cancer/about/index.html>

Epidemiology¹

In the United States, the 2023 CDC Hepatitis Surveillance Report recorded 1,648 newly reported infections of hepatitis A, with an additional 3,300 estimated unreported infections. There were 85 recorded deaths from hepatitis A in 2023 in the United States. Hepatitis B is more prominent in the United States than hepatitis A, with newly reported cases for acute hepatitis B at 2,214 and chronic hepatitis B reported at 17,650 in 2023. The estimated unreported new cases of hepatitis B in 2023 was 14,400, with 1,769 deaths. Hepatitis C is the most common type of hepatitis in the United States, with newly reported acute cases recorded at 4,966 and chronic cases recorded at 101,525. Estimated unreported new cases is 69,000 with 11,194 deaths in 2023.

Table 1: Trends in Hepatitis Infections

Hepatitis Type	Trends in Hepatitis Infections ¹
Hepatitis A	<ul style="list-style-type: none"> The number of hepatitis A cases decreased 28% during 2022–2023. The rate of hepatitis A among Hispanic persons was 2.0 times with the rate among non-Hispanic White persons.
Hepatitis B	<ul style="list-style-type: none"> The rate of acute hepatitis B was 0.7 reported cases per 100,000 population, remaining relatively stable since 2020. The rate of acute hepatitis B was highest among persons aged 40–49 and 50–59 years; these two age groups combined accounted for 48% of all reported acute hepatitis B cases. The rate of acute hepatitis B among non-Hispanic Black persons was 1.9 times as high as the rate among non-Hispanic White persons. States with the highest rates were primarily located in the eastern and southeastern United States, particularly in or near the Appalachian region. The rate of newly reported chronic hepatitis B cases was highest among persons aged 30–39 and 40–49; these two age groups combined accounted for 46% of all newly reported chronic hepatitis B cases.
Hepatitis C	<ul style="list-style-type: none"> The rate of acute hepatitis C was 1.5 reported cases per 100,000 population, remaining relatively stable since 2021. The number of acute hepatitis C cases in 2023 was 1.7 times as high as in 2016. Persons aged 30–39 years had the highest rates of acute hepatitis C. The rate of acute hepatitis C is higher among non-Hispanic American Indian/Alaska Native persons than any other group and is 2.3 times as high as the rate among non-Hispanic White persons (the largest demographic in the United States). The rate of newly reported chronic hepatitis C cases was highest among persons aged 30–39 and 40–49; these two age groups combined accounted for 48% of all newly reported chronic hepatitis C cases. 66% of newly reported chronic hepatitis C cases occurred among men.

Table 2: How to Contract Hepatitis

Hepatitis Type	Method of Transmission
Hepatitis A	<ul style="list-style-type: none"> Primarily transmitted through the fecal-oral route, where an uninfected person ingests food or water that has been contaminated by the feces of an infected person. Another less common method of transmission is through close physical contact such as various sex acts. Casual physical contact would not transmit the virus.²
Hepatitis B	<ul style="list-style-type: none"> Transmitted through contact with the blood or bodily fluid on an infected person. This can happen from mother to child at birth, between sexual partners, or often through piercing of the skin. Contaminated needles are often seen in persons who inject drugs, tattoo/piercing needles, and in the healthcare community.³
Hepatitis C	<ul style="list-style-type: none"> Most commonly transmitted through blood-blood contact. Typically through reused/improperly sterilized needles or the transfusion of unscreened blood. It is less commonly passed from an infected mother to child or sexual practices that may lead to blood exposure.⁴
Hepatitis D	<ul style="list-style-type: none"> Hepatitis D infection only occurs in those who are infected with hepatitis B, as this virus requires hepatitis B to replicate. Its transmission is the same as hepatitis B: contact with infected blood or bodily fluids, sexual intercourse, and rarely from mother to child.⁵
Hepatitis E	<ul style="list-style-type: none"> Hepatitis E has 4 distinct genotypes. Genotypes 1 and 2 are transmitted via the fecal-oral route, primarily through contaminated drinking water. Genotypes 3 and 4 mainly affect non-human mammals, so transmission is through the consumption of raw/undercooked meat of infected animals.⁶

Symptoms of Hepatitis

Despite the various types of hepatitis, they often present in a similar manner. The most well-known symptom of liver injury is jaundice, or a yellowing of the skin and eyes. This happens when the liver is unable to process and remove bilirubin efficiently and is common with all types of hepatitis. Other symptoms that are commonly associated with all types of hepatitis include nausea, vomiting, abdominal pain, fever, malaise, dark-colored urine, loss of appetite, and joint pain. Some types of hepatitis may go beyond these typical common symptoms. Other symptoms that are unique or notable include:

- Hepatitis A - These patients are more likely to experience diarrhea.²
- Hepatitis B, C – Many patients experience little to no symptoms until significant damage has been done to the liver.^{3,4}
- Hepatitis C – Some patients report some experience with headaches, mood swings, depression, and visual changes.⁷
- Hepatitis E – Little to no symptoms for many patients.⁶

Prevention

Hepatitis prevention includes maintaining good hygiene, practicing safe sex, avoiding the use of illicit drugs, and avoiding shared needles. Limiting alcohol intake and staying up to date on Hepatitis A and B vaccinations can also aid in prevention.

Table 3: Vaccinations⁸

Vaccine	Dosing
Hepatitis B vaccine, recombinant (Recombivax HB) Manufacturer: Merck Sharp & Dohme Corporation	Should be given at 0,1,6 months (minimum intervals: dose 1 to dose 2 = 4 weeks; dose 2 to dose 3 = 8 weeks; dose 1 to dose 3 = 16 weeks)
Hepatitis B vaccine, adjuvanted (Heplisav –B) Manufacturer: Dynavax Technologies Corporation	2 dose series 4 weeks apart
Hepatitis B vaccine, recombinant (Engerix – B) Manufacturer: GlaxoSmithKline Biologicals	3 dose series
Diphtheria and tetanus toxoids and acellular pertussis adsorbed, Hepatitis B (recombinant) and inactivated poliovirus vaccine (Pediarix) Manufacturer: GlaxoSmithKline Biologicals	3 dose series at 2, 4, 6 months of ages
Hepatitis A & Hepatitis B recombinant vaccine (Twinrix) Manufacturer: GlaxoSmithKline Biologicals	3 dose series at 0,1,6 months (minimum intervals: dose 1 to dose 2 = 4 weeks; dose 2 to dose 3 = 5 months)
	*no current vaccines available for Hepatitis C

Screening Recommendations

- Hepatitis A:¹
 - No routine screening recommended.
- Hepatitis B:⁹
 - All adults aged ≥18 years at least once during a lifetime (new recommendation).
 - All pregnant persons during each pregnancy, preferably in the first trimester, regardless of vaccination status or history of testing.
 - Anyone with risk factors listed in the risk factor table should receive periodic HBV testing with the frequency decided upon with shared decision making between the provider and patient.

- Hepatitis C:¹⁰
 - One time screenings:
 - ♣ All individuals aged 18 years or older
 - ♣ All persons less than 18 years old with risk activities/exposures/conditions
 - Periodic repeat HCV testing should be offered to all persons with risk activities/exposures/conditions
 - Prenatal HCV testing as part of routine prenatal care with each pregnancy
 - Annual HCV testing for all persons who inject drugs, HIV infected men who have unprotected sex with men, and men who have sex with men taking pre-exposure prophylaxis (PrEP)

Treatment for the Types of Hepatitis

- Hepatitis A Virus: Self-limiting virus. Treatment includes rest, adequate nutrition, and fluids.¹
- Hepatitis B Virus: Treatments (see Table 4) are available to reduce morbidity and mortality, however no cure for hepatitis B exists.¹¹
- Hepatitis C Virus: There are medications (see Table 5) to treat and cure Hepatitis C. There are simplified treatment regimens and other regimens for patients that do not qualify for simplified treatment.

Table 4: Hepatitis B Treatments¹¹

Antiviral Medications	Interferon	Liver Transplant
<p>These help the body fight the Hepatitis B virus and reduce its ability to damage the liver. Examples:</p> <ul style="list-style-type: none"> • Viread (TDF) or Vemlidy (TAF) are brand names of Tenofovir, which are manufactured by Gilead Sciences Inc. • Epivir-HBV is the brand name of Lamivudine, which is manufactured by ViiV Healthcare. • Hepsera is the brand name of Adefovir, which is manufactured by Gilead Sciences Inc. 	<p>This is a synthetic version of what a person’s body produces to fight infection. Example: Pegasys is the brand name of peginterferon alfa-2a which is manufactured by pharma& GmbH.</p>	<p>If the virus has been allowed to progress, the liver may be damaged enough to require a liver transplant.</p>

Table 5: Simplified Pan genotypic Hepatitis C Treatments¹⁰

Patients without Cirrhosis	
<p>For all genotypes: glecaprevir (300 mg) / pibrentasvir (120 mg) to be taken with food for a duration of 8 weeks Trade name: Maryvet Manufacturer: Entana Pharmaceuticals’ Partner AbbVie</p>	<p>For all genotypes: sofosbuvir (400 mg) / velpatasvir (100 mg) for a duration of 12 weeks Trade name: Epclusa Manufacturer: Gilead Sciences Inc.</p>

Patients with Compensated Cirrhosis	
For all genotypes: glecaprevir (300 mg) / pibrentasvir (120 mg) to be taken with food for a duration of 8 weeks Trade name: Mavyret Manufacturer: Entana Pharmaceuticals' Partner AbbVie	Genotype 1, 2, 4, 5, or 6: sofosbuvir (400 mg) / velpatasvir (100 mg) for a duration of 12 weeks Trade name: Epclusa Manufacturer: Gilead Sciences Inc.

New Treatments for Hepatitis

The most recent developments in Hepatitis treatment involves updated treatment durations and inclusion requirements.

- In March 2024, the FDA approved the expansion of the age range that could use Vemlidy (tenofovir alafenamide) for hepatitis B to as young as 6 years old.¹²
- On June 11, 2025, the FDA approved an 8-week oral course of Mavyret (glecaprevir/pibrentasvir) for the treatment of acute hepatitis C in patients aged 3 and up.¹³

Upcoming treatments for Hepatitis

There is a multitude of upcoming potential treatments for hepatitis. Most of the trials in development are directed towards hepatitis B and hepatitis C and have a focus on trying to achieve a functional cure. Perhaps the most promising is GSK’s bepirovirsen. It is a triple action antisense oligonucleotide that targets and destroys hepatitis B virus RNA, inhibiting its replication. It is also able to suppress hepatitis B surface antigen in the blood and stimulates the immune system to promote a sustained response. Bepirovirsen has received the FDA fast track designation and is expected to finish phase III trials soon.¹⁴

Other ongoing or upcoming trials involving hepatitis treatment includes:

- TherVacB: A therapeutic vaccine that aims to boost the immune system’s ability to fight against chronic hepatitis B. The first in-human trials began in January 2025.¹⁵
- B-United: A phase 2b trial that aims to explore the drugs daplusiran/tomligisiran followed by bepirovirsen as a potential new chronic hepatitis B treatment.¹⁶

Table 6: Resources/Support

<u>Resources/Support</u> ¹⁷
<ul style="list-style-type: none"> ➤ American Liver Foundation <ul style="list-style-type: none"> ☐ http://www.liverfoundation.org/ ➤ Hepatitis Foundation International <ul style="list-style-type: none"> ☐ http://www.hepatitisfoundation.org/ ➤ The Hepatitis C Mentor And Support Group, Inc <ul style="list-style-type: none"> ☐ http://www.hepatitiscmsg.org/ ➤ Liver Health Connection <ul style="list-style-type: none"> ☐ http://www.liverhealthconnection.org/



The last “dose” ...

Hepatitis: Let's Break It Down 2025 slogan for World Hepatitis Day

This is a call for urgent action to dismantle the financial, social and systemic barriers – including stigma – that stand in the way of hepatitis elimination and liver cancer prevention.

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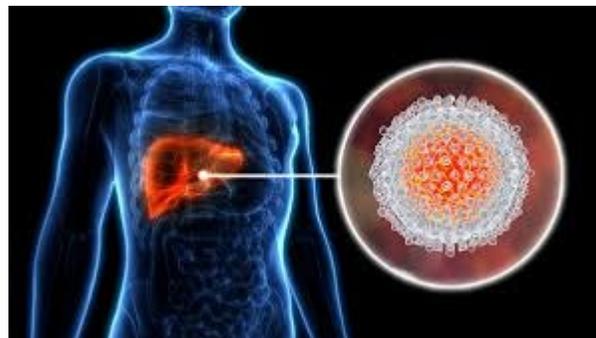
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