

Viral Hepatitis

A plain-English guide for you and your family

WHAT IS HAPPENING

Your liver is a quiet powerhouse tucked under your right ribs. It filters every drop of blood coming from your gut, yanks out poisons, builds the proteins that stop bleeding, stores sugar for energy, and breaks down old red blood cells into a yellow waste called bilirubin that leaves in your poop. When a hepatitis virus (A, B, C, D, or E) slips into liver cells, your immune system spots the invader and attacks—not just the virus, but the infected cells too. That battle causes swelling and kills liver cells, so the liver can't do its jobs well for a while. Bilirubin piles up and stains your skin and eyes yellow (jaundice). Your pee turns dark brown because the kidneys dump extra bilirubin there. You feel exhausted, lose your appetite, and get a dull ache under your right ribs where the swollen liver sits. Hepatitis A and E usually come from contaminated food or water, hit hard and fast, then leave—your body clears them in weeks to months and you're done. Hepatitis B and C spread through blood or body fluids (shared needles, unsafe sex, childbirth); they can sneak past your immune system and hide for decades, quietly scarring the liver until cirrhosis or cancer appears. Hepatitis D only piggybacks on B, making it worse. The good news: vaccines protect against A and B, new antiviral pills cure most hepatitis C, and if caught early, the liver can heal remarkably well because its cells regrow.

What you might feel

- Feeling tired all the time, even after rest
- Yellow skin and eyes (jaundice)
- Dark urine, like cola or strong tea
- Pale or clay-colored stools
- Nausea, loss of appetite, or feeling sick to the stomach
- Pain or tenderness in the upper right belly, just below the ribs
- Mild fever and body aches, like a flu
- Confusion, sleepiness, or trouble thinking clearly
- Easy bruising or bleeding that does not stop quickly
- Swelling in the belly (ascites) or legs (edema)

Call the doctor right away if...

- Confusion, extreme sleepiness, or slurred speech (sign the liver is failing and toxins are reaching the brain)
- Vomiting blood or black, tarry stools (sign of bleeding from swollen veins in the esophagus or stomach)
- Severe belly pain with rapid swelling (could mean infection of fluid in the belly, called spontaneous bacterial peritonitis)
- Trouble breathing or very fast heart rate with yellowing of the skin and eyes (jaundice) (sign of liver failure affecting the whole body)
- New bruising, nosebleeds, or bleeding gums without injury (sign clotting factors are dangerously low)

What the care team will do

- Monitor for signs of hepatic encephalopathy every 4 to 6 hours: check orientation to person, place, and time; look for hand flapping tremor called asterixis; ask family if personality changed
- Check for bleeding every shift: inspect skin for new bruises or pinpoint bleeding spots (petechiae) (tiny red dots), test stool for blood, watch IV sites for oozing, measure any vomit or stool blood loss
- Give IV fluids at ordered rate if patient is vomiting or cannot drink, and measure urine output every hour; notify provider if urine drops below 30 milliliters per hour
- Place patient on contact and standard precautions for HAV and HEV: use gloves and gown for all care, place sign on door, use dedicated equipment, wash hands with soap for 20 seconds after touching patient or environment
- Hold all hepatotoxic medicines (drugs that harm the liver) until provider reviews: acetaminophen, statins, some antibiotics, herbal supplements; check medication reconciliation list with pharmacist
- Provide small frequent meals high in calories and protein every 2 to 3 hours; avoid fatty foods; give anti-nausea medicine 30 minutes before meals as ordered
- Teach patient and family strict hand hygiene after bathroom use and before eating; explain the virus type, how it spreads, and that close contacts may need vaccination or immunoglobulin
- Schedule and ensure completion of follow-up lab work: repeat ALT, AST, bilirubin (a yellow waste product from red blood cells), INR, and viral load (amount of virus in blood) in 1 to 2 weeks as ordered

Medicines you may be given — and why

Hepatitis A vaccine (given to close contacts)

The vaccine contains killed hepatitis A virus pieces. When injected, it trains the immune system to recognize hepatitis A so the body can block infection before it starts. This stops the spread to people who were exposed.

Entecavir

Entecavir is a fake building block that looks like the real DNA piece hepatitis B virus needs to copy itself. When the virus tries to use entecavir, the copying machine jams and the virus cannot multiply. This lowers the number of virus particles attacking the liver, so liver damage slows or stops.

Tenofovir (TDF or TAF)

Tenofovir is a fake DNA building block that hepatitis B virus accidentally uses when copying itself. Once the virus polymerase (the copying machine) grabs tenofovir, the chain stops growing and the virus cannot finish making new copies. Fewer virus particles means less liver damage.

Sofosbuvir-velpatasvir

This pill combines two drugs that attack hepatitis C virus at two different steps. Sofosbuvir jams the virus copying machine (the polymerase) so the virus cannot make new RNA. Velpatasvir blocks the NS5A protein that the virus needs to assemble new particles. Together they stop the virus from multiplying and the immune system clears it out — this cures more than 95 percent of people.

Glecaprevir-pibrentasvir

This pill combines two drugs that hit hepatitis C virus at three weak spots. Glecaprevir blocks the NS3/4A protease (a virus scissor enzyme that cuts big virus proteins into working pieces). Pibrentasvir blocks the NS5A protein (needed to package and release new virus). Together they stop the virus from making the parts it needs and from assembling new particles. The virus dies out and the infection is cured in 8-12 weeks in more than 95 percent of people.

Pegylated interferon alfa

Pegylated interferon is a lab-made copy of interferon alfa, a natural alarm signal your immune system uses to fight viruses. The 'pegylated' part means it is wrapped in a coating (polyethylene glycol) so it lasts longer in the body. When injected, it wakes up the immune system, tells infected cells to resist the virus, and helps T cells and natural killer cells destroy virus-infected liver cells. This is the main treatment for chronic hepatitis D (which comes only

with hepatitis B). It also used to be used for hepatitis B and C, but newer drugs are now easier and more effective for those.

Bulevirtide

Bulevirtide is a lab-made copy of a piece of the receptor (the door lock) that hepatitis D virus uses to enter liver cells. When injected, bulevirtide plugs the lock (called NTCP, the sodium-taurocholate co-transporting polypeptide) so the virus cannot get in. This stops new liver cells from being infected. It is used for chronic hepatitis D, often combined with pegylated interferon.

Ribavirin

Ribavirin is a fake building block that looks like the RNA pieces hepatitis E virus (and some other RNA viruses) use to copy themselves. When the virus polymerase uses ribavirin, it makes mistakes — so many mistakes that the virus falls apart. Ribavirin also shifts the immune response to help T cells fight the virus. This is used for hepatitis E only in people with weak immune systems (organ transplant, HIV, chemotherapy), because in healthy people the body clears hepatitis E on its own.

Hepatitis B vaccine (Recombivax HB, Engerix-B)

The vaccine contains a lab-made copy of the hepatitis B surface protein (the outer coat of the virus). When injected, the immune system sees this protein, recognizes it as foreign, and learns to make antibodies against it. These antibodies stay in the blood for decades. If hepatitis B virus enters the body later, the antibodies grab it and destroy it before it can infect liver cells. The vaccine is given as a series of 2-3 shots (depending on the brand) to build strong, lasting protection.

Where this information comes from

- AASLD Hepatitis B Guidance 2018
- AASLD-IDSA HCV Guidance 2023
- CDC Viral Hepatitis Surveillance and Prevention
- WHO Guidelines on Hepatitis B and C Testing and Treatment 2023

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