

Hepatitis B

A plain-English guide for you and your family

WHAT IS HAPPENING

Hepatitis B is a virus that gets into your liver cells and starts making copies of itself. Most healthy adults fight it off in a few months and never see it again. But in about 5 out of every 100 adults — and most babies who catch it at birth — the immune system cannot fully kick the virus out, so it stays quiet in the liver for years or even decades. During that time you might feel fine, but the virus keeps damaging liver cells bit by bit. Over twenty or thirty years, that constant damage can turn healthy liver tissue into scar tissue (cirrhosis), and scarred liver that keeps trying to heal itself under viral attack can grow into liver cancer (hepatocellular carcinoma). The good news: a vaccine can stop infection before it starts, and antiviral pills can hold the virus down so low that your liver stays healthy. Testing is key, because many people walk around with chronic hepatitis B and do not know it until serious damage is already done.

What you might feel

- No symptoms at all (most common in chronic infection)
- Fatigue and feeling worn out
- Loss of appetite and nausea
- Yellow skin and eyes (jaundice)
- Dark urine that looks like tea or cola
- Pale or clay-colored stools
- Pain or fullness in the upper right belly
- Joint pain and muscle aches
- Confusion or sleepiness that gets worse over hours or days

Call the doctor right away if...

- Yellow skin or eyes (jaundice) — means the liver is struggling to clean the blood
- Confusion, extreme sleepiness, or changes in personality — toxins may be building up in the brain

- Easy bruising, bleeding gums, or vomiting blood — the liver isn't making clotting proteins, so bleeding won't stop
- Swollen belly with fluid (ascites) or swollen legs — the liver isn't making enough albumin to hold fluid in the blood vessels
- Severe fatigue with yellowing of the skin and eyes (jaundice) in someone who was recently exposed to the virus — may be acute hepatitis B, which can turn severe quickly

What the care team will do

- Assess mental status every 4 hours using Glasgow Coma Scale and check for asterixis (hand-flapping tremor when arms extended)
- Monitor coagulation labs (PT/INR and platelet count) and inspect skin, gums, and all puncture sites for bleeding every shift
- Maintain IV hydration with dextrose-containing fluids and monitor blood glucose every 6 hours
- Encourage small frequent meals with adequate protein (unless encephalopathy present) and avoid hepatotoxic substances including alcohol and acetaminophen
- Use strict contact precautions with blood and body fluids: gloves for all contact, eye protection during procedures, and safe needle disposal
- Educate patient to avoid sharing razors, toothbrushes, or nail clippers and to cover open wounds with bandages
- Coordinate hepatology referral for patients with chronic HBV to assess need for antiviral therapy (tenofovir or entecavir) based on HBV DNA level, ALT (liver enzyme), and fibrosis stage
- Teach sexual partners and household contacts to get tested for HBV and receive the three-dose vaccine series if non-immune

Medicines you may be given — and why

Tenofovir (TDF or TAF)

Tenofovir blocks the virus's copy machine. Hepatitis B hijacks liver cells and uses an enzyme called reverse transcriptase (a molecular photocopier) to make new copies of itself. Tenofovir slips into that copier and jams it, so the virus can't multiply. Over time, this lowers the viral load (the number of virus particles in the blood) and lets the liver start to heal.

Entecavir

Entecavir is another jammer for the virus's copy machine. Like tenofovir, it sneaks into the hepatitis B virus's DNA-building process and stops reverse transcriptase (the enzyme the virus

uses to multiply). By blocking viral replication, entecavir lowers the amount of virus in the blood and reduces liver inflammation, giving the liver a chance to heal.

Pegylated interferon alfa (PEG-IFN- α)

Pegylated interferon is a lab-made version of interferon, a natural alarm protein the immune system uses to fight viruses. It works two ways: it directly slows down the hepatitis B virus inside liver cells, and it wakes up and trains immune cells (T cells and natural killer cells) to recognize and destroy infected liver cells. The 'pegylated' part means a protective coating is added so the drug lasts longer in the body and only needs to be injected once a week.

Hepatitis B immune globulin (HBIG)

HBIG is a concentrated dose of antibodies against hepatitis B, taken from the blood of people who have high levels of protective antibodies. When injected, these ready-made antibodies immediately circulate in the bloodstream and bind to hepatitis B virus particles, tagging them for destruction and preventing them from entering liver cells. HBIG provides instant, short-term protection—like borrowing someone else's immune defense—while the body's own immune system (boosted by the hepatitis B vaccine) learns to make its own antibodies.

Where this information comes from

- AASLD Hepatitis B Guidance 2018
- CDC Hepatitis B Information
- WHO Guidelines for the Prevention, Care and Treatment of Persons with Chronic Hepatitis B Infection 2015
- ACOG Practice Bulletin on Viral Hepatitis in Pregnancy

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