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# Understanding Hepatic Encephalopathy (HE)

Hepatic encephalopathy (HE) is a brain disease that occurs when toxins that are normally cleared by the liver build up in the brain. It happens more in people with the liver disease cirrhosis. It can cause mild symptoms that are hard to notice. But over time, it may cause symptoms such as memory changes and confusion. But symptoms can go away if HE is treated early.

## How to say it

heh-PA-tihk

ehn-sehf-uh-LAH-puh-thee

## What causes hepatic encephalopathy?

Researchers don't know all the reasons HE happens. But they know HE is caused by toxins that stay in the body too long. These are normally cleared out of the body by the liver. But when the liver doesn't work normally, these harmful substances stay in the blood and travel to the brain. This leads to damage in the brain. It can also cause swelling and pressure in the brain.

You're more at risk for HE if you have any of these:

- Damaged and scarred liver (cirrhosis)
- Sudden liver failure from an infection or other cause
- Chronic liver disease. This can be from alcohol-related liver disease or non-alcoholic fatty liver disease (NAFLD).
- Portosystemic shunt. This happens when circulating blood bypasses the liver. It's also called a liver shunt. The liver normally removes toxins from the blood. But with a liver shunt, toxins build up in the blood and aren't cleared from the body. A liver shunt can be present at birth or can happen later.

If you have liver disease, the symptoms of HE can happen suddenly if you have any of these:

- Bleeding in the stomach or intestines
- Constipation
- Fluid loss (dehydration)
- Infection
- Use of sleep medicines
- Use of antidepressant medicines
- Surgery

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# Symptoms of hepatic encephalopathy

HE may happen slowly over time if you have liver disease. The symptoms may be mild at first, and come and go. HE can cause symptoms such as:

- Mood changes
- Trouble sleeping
- Trouble paying attention
- Memory problems

In severe cases, HE can cause:

- Low energy and tiredness (lethargy)
- Slurred speech
- Confusion
- Severe anxiety
- Trouble thinking
- Trouble doing physical tasks
- Impulsive behavior
- Shaking of hands or arms (called flapping)

## Diagnosing hepatic encephalopathy

Your healthcare provider will ask about your symptoms and health history. They'll ask if you've been exposed to medicines or toxins that cause HE. You may have tests such as:

- **Blood tests.** These check for infection and low liver function.
- **Urine tests.** These look for infection and how well your kidneys are working.
- **Paracentesis.** This is a procedure where a small needle is used to remove extra fluid from your belly (abdomen). The fluid may be tested for infection.
- **Imaging tests of the brain.** An MRI or CT scan of the brain may be done. This is to see if your symptoms are caused by a different problem in the brain, such as a tumor.
- **Electroencephalogram (EEG).** This test looks at the electrical activity in the brain.

## Treatment for hepatic encephalopathy

Treatment will depend on your symptoms, your age, and your general health. It will also depend on how severe the condition is, and what's causing your HE. Your treatment may include:

- Medicine to treat infection

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- Medicine to control bleeding
  - Stopping medicines that may cause symptoms
  - Antibiotics and lactulose, which can help fewer toxins be absorbed in your gut
  - Treating kidney problems

Talk with your healthcare providers about the risks, benefits, and possible side effects of all medicines.

## **Possible complications of hepatic encephalopathy**

Untreated, HE can lead to coma and death.

## **When to call your healthcare provider**

Call your healthcare provider if you have any of the following:

- Fever of 100.4°F (38°C) or higher, or as directed by your provider
- Symptoms that don't get better, or that get worse
- New symptoms