

What is Encephalopathy?

Encephalopathy is a change in your mental condition in which toxins that normally circulate in the bloodstream are not cleared properly by the liver and result in altered brain function. Encephalopathy can cause mood changes, trouble with fine muscle movements, and trouble driving. Your doctor may tell you to stop driving.

Note: Worsening signs of encephalopathy include severe confusion, disorientation, drowsiness, and coma. Please seek immediate medical attention in your local Emergency Room if these symptoms occur.

What are the Tests for Encephalopathy?

The best test for encephalopathy is a mental and physical exam. Your doctor asks you about your sleep habits and memory. There are many toxins involved, but the most commonly measured blood test to evaluate encephalopathy is ammonia.

Your blood is tested for:

- The level of ammonia, which increases in some patients with encephalopathy.
- The level of zinc, which are low in some patients with encephalopathy.

What are the Treatments for Encephalopathy?

Recommendations for Your Diet:

- Do not eat any red meat.
- Eat 80 grams of protein a day. Sources of protein include soy beans, tofu, beans, legumes, and fish. Diets too low in protein (40 – 60 grams/day) may be dangerous because they can decrease muscle mass.

What are the Treatments for Encephalopathy? *(continued)*

Medications

Neo-Fradin, Neo-Rx (Neomycin)

Neomycin is an antibiotic that changes the chemistry and bacteria in the intestine and decreases the amount of ammonia and other toxins released into the blood. This medication is usually given at a dose of 500 mg four times a day. If this medication is prescribed for more than six months, hearing tests should be performed since there may be a risk of hearing loss. Hearing tests are critical if a patient is using Lasix (Furosemide) along with Neomycin.

Cholac, Constilac, Constulose, Cephulac (Lactulose)

Lactulose is a non-absorbable sugar that changes the acidity of the colon and decreases the amount of ammonia as well as other toxins in the blood. This medication causes loose bowel movements or diarrhea. Lactulose works best if the patient has at least two to four bowel movements each day. If the patient has more than four bowel movements, he or she can decrease the lactulose dose by one-third. The patient should make dose adjustments at home. If diarrhea continues, even after lactulose is stopped, an evaluation for yeast in the colon should take place.

Flagyl (Metronidazole)

Metronidazole is an oral antibiotic that changes the colonic and intestinal bacteria and may have a favorable effect on patients with chronic encephalopathy. Side effects include an "antabuse" reaction (do not drink alcohol or use medications that contain alcohol with this medication) and nervous system reactions including confusion and nerve tingling.

Zinc

A deficiency of zinc worsens the amount of encephalopathy a patient may be having with liver failure or cirrhosis. Zinc supplements are available through pharmacies or health food stores. Patients with zinc deficiencies should take between 50 to 200 mg per day.

Ucephan (Sodium Benzoate and Sodium Phenylacetate)

An alternative therapy for encephalopathy is sodium benzoate powder and sodium phenylacetate tablets or powder. Sodium benzoate and sodium phenylacetate absorb ammonia in the intestinal tract and enable excretion in bowel movements. They also increase the activity of the urea cycle, which binds ammonia in the liver, allowing increase removal of ammonia from the blood in the liver. The usual dose of sodium benzoate is 2 to 5 gm by mouth each day and sodium phenylacetate is dosed at 2 grams to 10 grams per day.

More Ways to Learn

- Go to www.cpmc.org/learning.
- Visit our Liver Disease page at www.cpmc.org/liver.

Frequently Asked Questions

Question: What is encephalopathy?

Answer: Encephalopathy is a change in your mental condition in which toxins that normally circulate in the blood stream are not cleared properly by the liver and result in altered brain function.

Question: What tests are taken to diagnose encephalopathy?

Answer: You need a mental and physical exam for evaluation for encephalopathy. Two blood tests are taken to evaluate for encephalopathy. The ammonia level increases in some patients with encephalopathy. In addition, a blood test is taken to test for the level of zinc. Zinc levels are low in some patients with encephalopathy.

Question: What treatments are available for persons diagnosed with encephalopathy?

Answer: Treatments for encephalopathy include diet recommendations and a number of medications.

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Note: This information is not meant to replace any information or personal medical advice which you get directly from your doctor(s). If you have any questions about this information, such as the risks or benefits of the treatment listed, please ask your doctor(s).