



Microbiota Transplant Cuts Hepatic Encephalopathy in People With Cirrhosis

People who received fecal microbe transplants were less likely to experience encephalopathy recurrence and reported improved quality of life.

May 16, 2025 By [Sukanya Charuchandra](#)

For people with liver cirrhosis and recurrent hepatic encephalopathy, fecal microbiota transplantation (FMT) may offer a new line of defense. Researchers found that FMT—delivered by capsule or enema and from either vegan or omnivorous donors—was safe and associated with significantly lower rates of encephalopathy recurrence, according to research published in the [Journal of Hepatology](#). Notably, the benefits were associated with changes in gut bacteria types.

Over time, chronic [hepatitis B](#) or [hepatitis C](#), [fatty liver disease](#) and [heavy alcohol consumption](#) can lead to advanced liver scarring, known as [cirrhosis](#). As liver function fails, people may experience hepatic encephalopathy (HE), or cognitive impairment and altered consciousness due to buildup of toxins in the brain. HE can lead to hospitalization, irreversible cognitive problems, coma and death. People with HE may be treated with lactulose and rifaximin (Xifaxan) to alleviate symptoms and prevent recurrence, but better therapies are needed.

Fecal microbiota transplantation involves transferring intestinal bacteria from a healthy person in an effort to reconstitute the gut microbiome. Some early studies found that FMT can lower the odds of HE recurrence, but more research is needed to understand the best dosages and administration routes. Jasmohan Bajaj, MD, of Virginia Commonwealth University and Richmond VA Medical Center, and colleagues evaluated the impact of FMT in people with cirrhosis and HE.

The research team conducted a randomized, double-blind, placebo-controlled Phase II trial of FMT, given orally as a capsule or through an enema, for people with cirrhosis and HE who were already being treated with lactulose and rifaximin. The FMT donor was either vegan or omnivorous.

Sixty adult participants were randomly assigned to four groups receiving either three active doses, two active doses and one placebo, one active dose and two placebos or three placebo doses at the start of the study and 30 days later. Each participant received two oral doses and one dose through an enema. Over a follow-up period of six months, the researchers assessed the occurrence of adverse events as well as HE recurrence, hospitalizations, mortality and quality of

life.

FMT was found to be safe with no procedure-related serious adverse events, irrespective of dosage, route or type of donor. Overall, 10 people experienced HE recurrence, with differences across the groups. While 40% of those in the placebo-only group experienced recurrence, this fell to 9% across the FMT groups. Twenty-two participants were hospitalized, four died and one received a liver transplant.

The researchers found that patients with low levels of Lachnospiraceae bacteria and high levels of Lactobacillaceae were more likely to develop HE. FMT consistently reversed this pattern, boosting Lachnospiraceae and lowering Lactobacillaceae levels. Interestingly, the few FMT recipients who did go on to experience HE recurrence did not show these beneficial microbiome shifts.

FMT was also linked to a drop in potentially harmful bacteria like Enterobacteriaceae. These bacteria remained elevated in the placebo group and were more common in patients who experienced HE recurrence.

Beyond microbiome changes, FMT led to improvements in both physical and psychosocial quality of life. While cognitive gains were seen only within certain FMT groups, the overall boost in reported quality of life suggests participants could feel the benefit.

“We conclude in this randomized, double-blind, placebo-controlled, dose-ranging clinical trial that FMT is safe and associated with lower rates of HE recurrence in patients with cirrhosis already on lactulose and rifaximin,” wrote the researchers. “Donor engraftment was enhanced by higher relative abundances of Lachnospiraceae in recipients, which were associated with lower HE recurrence rates.”

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