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'Crapsules' — The Latest Feces Transplant Pill

Analysis by Dr. Joseph Mercola ✔ Fact Checked | August 04, 2023

STORY AT-A-GLANCE

- "Crapsules," which contain freeze-dried feces from healthy donors, could offer hope for people with liver disease, particularly cirrhosis
- A study funded by the National Institute for Health and Care Research UK will include about 300 people with advanced liver disease who will take either a crapsule or placebo pill every three months for two years
- The researchers hope that adding in "good" bacteria from healthy feces will not only boost gut health in the patients but also lower the risk of infection
- Fecal microbiota transplant (FMT) may also be useful for constipation, inflammatory bowel diseases, obesity and Type 2 diabetes
- Liver conditions influenced by imbalanced gut microbiota, including acute liver injury, viral hepatitis, cirrhosis, autoimmune liver disease, alcoholic liver disease and nonalcoholic fatty liver disease (NAFLD), may also benefit from FMT due to the gut-liver axis

"Crapsules," which contain freeze-dried feces from healthy donors, could offer hope for people with liver disease, particularly cirrhosis — severe scarring of the liver. People with cirrhosis are at increased risk of serious infections, including bacterial infections caused by multidrug-resistant pathogens.[1]

"If we can boost liver patients' own immunity to reduce infections by modifying the microbiome, we can reduce the need for the prescription of antibiotics," explained

Lindsey Edwards of King's College London. "There is an urgent and unmet need to tackle infection and antimicrobial resistance in chronic liver disease," she added.[2]

Edwards is leading a study to determine if crapsules, formally known as fecal microbiota transplant (FMT), could make a difference. It's just one of many potential uses for the increasingly popular treatment.

Can Freeze-Dried Poop Help Liver Disease?

The study, which is funded by the National Institute for Health and Care Research UK, will include about 300 people with advanced liver disease who will take either a crapsule or placebo pill every three months for two years.[3] Those with liver damage tend to have more "bad" bacteria in the gut, increasing their infection risk.

The researchers hope that adding in "good" bacteria from healthy feces will not only boost gut health in the patients but also lower the risk of infection. "The 'crapsules,' which have none of the taste or smell as the name suggests, may offer new hope for patients with cirrhosis who are out of treatment options," said Debbie Shawcross, the study's chief investigator.[4]

It's not the first time improving gut health via fecal transplants has been considered to treat liver conditions. In 2021, a team of Chinese researchers wrote in Seminars in Liver Disease:[5]

> *"The human gut harbors a dense and highly diverse microbiota of approximately 1,000 bacterial species. The interaction between the host and gut bacteria strongly influences human health.*
>
> *Numerous evidence suggest that intestinal flora imbalance is closely associated with the development and treatment of liver diseases, including acute liver injury and chronic liver diseases (cirrhosis, autoimmune liver disease, and fatty liver). Therefore, regulating the gut microbiota is expected to be a new method for the adjuvant treatment of liver diseases."*

Fecal Transplants Have Ancient Roots, Widespread Uses

Evidence of fecal transplant exists from ancient times dating back 1,700 years to the Eastern Jin Dynasty in China.[6] It's said that ingesting fecal material was used as a treatment for diarrhea.[7]

FMT, defined as "the transplantation of gut microbiota from healthy donors to sick patients via the upper or lower gastrointestinal route to restore the normal intestinal balance,"[8] may be useful for constipation, inflammatory bowel diseases, obesity and Type 2 diabetes.[9]

Liver conditions influenced by imbalanced gut microbiota, including acute liver injury, viral hepatitis, cirrhosis, autoimmune liver disease, alcoholic liver disease and nonalcoholic fatty liver disease (NAFLD), may also benefit from FMT.[10] Many aren't aware that there's a gut-liver axis, which runs bidirectionally.[11]

As such, "Liver diseases may lead to an imbalance in the gut microbiota, and this imbalance may aggravate the progression of liver diseases, which they mutually promote and affect," the Seminars in Liver Disease team explained.[12]

Disruption of gut microbiota, for instance, has been linked to NAFLD. Artificial sweeteners may also have a role to play in this condition. NAFLD is the most common chronic liver disease in developed countries,[13] characterized by a buildup of excess fat in your liver that is not related to heavy alcohol use.

Artificial sweeteners' ability to cause gut dysbiosis may be another culprit,[14] which again signals why FMT may be useful. A number of studies show favorable results for FMT in a range of diseases. Among them:[15]

- FMT increased intestinal flora diversity and improved cognitive dysfunction in hepatic encephalopathy (HE); case reports also show "dramatic clinical improvements, both subjectively and objectively," following FMT
- FMT restored disruptions due to antibiotics and improved microbial diversity and function in patients with liver cirrhosis

- FMT led to a significant decline in hepatitis B titer (HBeAg) in patients with hepatitis B
- In a case study of a patient with severe alcoholic hepatitis who was not responding to steroids, FMT led to improvements in general condition on day five of the treatment
- Among 12 patients with Clostridium difficile (C. diff) infection (CDI), FMT led to a cure rate of 89%

Increasing research suggests fecal transplants could be a safe, cost-effective treatment for liver disease and other conditions. As the Seminars in Liver Disease researchers noted:[16]

> *"Compared with previous conventional methods (probiotics), FMT is the most direct way to change the composition of gut microbiota. Both basic science research and clinical studies have proven that FMT can effectively improve the state of the gut microbiota under the conditions of acute and chronic liver diseases, rebuild the intestinal microbiome balance, and accelerate disease recovery."*

'Poop Pills' Offer Life-Saving Option for C. Diff

In World War II, the stools of camels were used to treat bacterial dysentery in German soldiers. In 1958, the treatment was described in a report for a patient with antibiotic-associated diarrhea. But it was not until 1978 that its value was recognized in the treatment of C. diff.[17]

C. diff can trigger a life-threatening condition in those who have been on antibiotics or have a compromised immune system. According to the CDC, there are nearly 500,000 C. diff infections each year, and among those who've had it, 1 in 6 will get it again in the next two to eight weeks.[18] The condition causes excessive diarrhea, which can lead to severe dehydration, sepsis and death.

The U.K.'s National Institute for Health and Care Excellence recommends fecal microbiota transplant for recurrent C. diff infections in adults who have had two or more previous episodes, stating, "Current evidence on the efficacy and safety of fecal microbiota transplant for recurrent Clostridium difficile infection is adequate to support the use of this procedure provided that normal arrangements are in place for clinical governance, consent and audit."[19]

While antibiotics are often the first-line treatment for C. diff, these drugs cause further imbalances to gut microbiota, which can challenge recovery efforts. In fact, it's exposure to antibiotics that often causes C. diff in the first place.[20]

On the other hand, FMT is typically successful in treating C. diff in 80% to 90% of patients, with favorable changes seen to gut microbiota.[21] According to a review in Gut Microbes, while pre-FMT those with CDI have imbalances in their gut microbiota, this is often remedied by the fecal transplant:[22]

> *"The gut microbiota in post-FMT samples resembles that of a healthy person: species from the Bacteroidaceae, Clostridiaceae, Eubacteriaceae, Lachnospiraceae, Prevotellaceae, and Ruminococcaceae families are restored, while species from the Proteobacteria phylum are diminished."*

Crapsules Offer Less Invasive Method

In the past, colonoscopies have been the most successful way of introducing fecal matter into patients, but a poop pill-popping protocol may be less invasive while still offering a life-saving option. In a trial at the University of Alberta, researchers compared the administration of fecal matter using a capsule or colonoscopy.[23]

All participants in the study had suffered a minimum of three bouts of C. diff. Both groups showed prevention of recurrent infection in 96.2% of the participants.[24] While the colonoscopy was invasive, the patients chosen to swallow pills had to down 40 capsules in one sitting.[25]

Still, using poop pills is noninvasive, less expensive, free of risks associated with sedation and may be done in the doctor's office. It is not, however, a treatment method you should experiment with at home. Even under investigational conditions, mistakes can be made.

In June 2019, the U.S. Food and Drug Administration released a statement that two immunocompromised adults had received a transplant that unwittingly transmitted a multidrug-resistant organism.[26] One of the patients died, which is why proper screening of donors is so important. In August 2022, the FDA warned that monkeypox virus could be transmitted via FMT and recommended additional donor screening questions.[27]

However, in April 2023, the FDA approved the first "crapsule," an oral fecal microbiota product called Vowst, which is approved for prevention of CDI recurrence in adults.[28] In November 2022, FDA also approved live-jslm (brand name Rebyota), a fecal microbiota product that's given rectally.[29] Both of these microbiota-based drugs are known as live biotherapeutic products, or LBPs. According to the Gut Microbes review:[30]

> *"LBPs do not exert antimicrobial activity against C. difficile and thus do not expedite time to or increase overall rates of initial clinical cure. Instead, they are intended to restore a healthy balance of microbiota, thereby decreasing the likelihood of recurrence."*

More Ways to Improve Your Gut Health

FMT and other forms of fecal therapeutics show promise for boosting gut health in cases of liver disease, C. diff and other health conditions. However, prevention remains the best strategy, which is why regularly supporting gut health via a healthy lifestyle is so important. There are many ways to do this, including the following, which will help nourish and protect your microbiome:

Do	Avoid
Eat plenty of fermented foods — Healthy choices include lassi, fermented grass fed kefir, natto (fermented soy) and fermented vegetables.	**Antibiotics**, unless absolutely necessary. If you do use them, make sure to reseed your gut with fermented foods and/or a high-quality probiotic supplement.
Take a probiotic supplement — If you don't eat fermented foods on a regular basis, a probiotic supplement can be useful.	**Conventionally raised meats** and other animal products, as CAFO animals are routinely fed low-dose antibiotics.
Boost your soluble and insoluble fiber intake, focusing on vegetables and seeds, including sprouted seeds.	**Chlorinated and/or fluoridated water —** This includes during bathing or showering.
Get your hands dirty in the garden — Exposure to bacteria and viruses in soil can help strengthen your immune system and provide long-lasting immunity against disease.	**Processed foods —** Excessive sugars, along with otherwise "dead" nutrients, feed pathogenic bacteria. Food emulsifiers such as polysorbate 80, lecithin, carrageenan, polyglycerols and xanthan gum may have an adverse effect on your gut flora.
Open your windows — Research shows opening a window and increasing natural airflow can improve the diversity and health of the microbes in your home, which in turn benefit you.[31]	**Agricultural chemicals**, glyphosate (Roundup) in particular is a known antibiotic and could potentially kill many of your beneficial gut microbes if you eat foods contaminated with it.
Wash your dishes by hand instead of in the dishwasher — Washing your dishes	**Antibacterial soap**, as it kills off both good and bad bacteria and contributes to

Do	Avoid
by hand leaves more bacteria on the dishes than dishwashers do. Eating off these less-than-sterile dishes may decrease your risk of allergies by stimulating your immune system.[32]	the development of antibiotic resistance.

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