

Poop Pills Can Combat Deadly Infections

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STORY AT-A-GLANCE

- › An answer to a serious infection called Clostridium difficile (C. diff.) infection comes from a therapy called fecal microbiota transplantation (FMT)
- › C. diff., a common bacterium in hospitals, is a leading cause of diarrhea in health care today, with older people on medication at greatest risk, and often occurs soon after administration of antibiotics
- › FMT is when feces are transferred from a healthy donor to the gastrointestinal tract of a C. diff.-infected patient to reintroduce healthy bacteria into their gut, but the pill form offers a noninvasive alternative
- › In terms of patient comfort, fewer trial subjects who were given the FMT capsule described the experience as “unpleasant” compared to receiving FMT through the colonoscopy route
- › Your gut health, as well as your overall health, are closely interconnected, so “feeding” your microbiome, as well as resisting antibiotics as much as possible, will optimize your microbiome

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While it would seem that a fecal transplant in capsule form would be a somewhat bitter pill to swallow, scientists conducting a randomized clinical trial¹ found this mode of transportation, in a matter of speaking, for fecal therapy was easier and just as effective for treating patients infected with the serious and dreaded Clostridium difficile infection

(RCDI), or simply “C. diff.,” as receiving a fecal transplant via enema or colonoscopy, also known as fecal microbiota transplantation (FMT).

Further, FMT in pill form has the capacity to improve patients’ quality of life, as it caused fewer adverse events.² For those who may be unaware of this protocol, fecal transplants are now not just common, but according to one study, so successful that the first trial was stopped early because the researchers deemed it unethical to withhold the treatment from patients (as some typically are given alternative therapies). As noted by NPR:

“That's because C. diff. is kind of a special case. It's a very invasive microbe that has repeatedly been assaulted by antibiotics which have caused a collapse in other microbes. So it's an easy environment for microbes in a donor stool to invade.”³

C. Diff. – Common Bacterium in Hospital Environments

One of the problems with C. difficile is that it’s one of the most common health care-associated infections and one of the foremost reasons hospital patients develop debilitating, recurrent diarrhea that’s hard to get a handle on, medically. It’s especially rampant among older individuals on **antibiotics** for other conditions. CIDRAP states:

“(C. diff.) can also be difficult to completely cure. As a result, recurrent infections have become a growing challenge. At least 20% of patients who get an initial CDI have a recurrent infection within eight weeks, with the risk of RCDI being as high as 50% to 60% after three or more infections.”⁴

Researchers at Brown University, where one program focuses on digestive microbes such as bacteria, fungi and viruses (human microbiomes), say C. diff. became hard to manage when antibiotics prescribed for other conditions disturbed what may have been perfectly functioning, benign gut organisms. By no means a trifling infection, Newsweek pulls no punches as it calls C. diff. both “nasty” and “deadly.”

Antibiotics may be the usual treatment in hospitals, but they only contribute to the problem by effectively wiping out beneficial bacteria in patients' collective **microbiome** that might keep C. diff. in check, CIDRAP observes.

In essence, FMT can be explained as feces being transferred from one healthy donor to the gastrointestinal tract of a C. diff. infected patient. The purpose is to “reintroduce healthy bacteria into the gut (as) a nonantibiotic therapy that's shown promise in clinical studies.”⁵

What Happens When Your Gut Biome Becomes This Compromised?

C. diff. infection impacts half a million people in the U.S. every year. Further, 1 in 11 people over age 65 who become infected with C. diff die within one month, according to the U.S. Centers for Disease Control and Prevention (CDC).⁶

Still, there have been patients who found the prospect of fecal transplant therapy, even through surgical means, to be just too daunting. In fact, efforts have actually been made to extract the beneficial bacteria from the fecal matter to make the idea of swallowing it more palatable, but the effort failed.

Far from being a brand-new, innovative idea, using poop to fight the effects of C. diff. and other problems in patients has been around since at least the late 1950s. Different names, besides FMT, have included fecal biotherapy and fecal flora reconstitution. One study explains the science behind it:

“FMT involves reconstituting the normal intestinal microflora in a diseased person by infusion (via nasogastric tube, enema or colonoscopy) of a liquid suspension of stool from a healthy donor. The first report of the use of FMT (for a patient with non-CDI pseudomembranous colitis) was published in 1958. Since then, there has been mounting evidence supporting its use in recurrent CDI.”⁷

Your Microbiome Can Make or Break Your Health

[How your microbiome works](#) is still being scrutinized by scientists, especially in the way it can make or break your overall health. It's clear that certain foods are considered positive for "feeding" your microbiome.

Foods containing fiber are at the top of the list as they release nutrients for your gut lining. The connection between what you eat and how healthy your gut is are closely interconnected, so consider adding [more fiber](#), especially if you aren't getting the 50 grams of fiber per 1,000 calories you eat that I recommend.

One way fiber benefits your health is by providing beneficial bacteria in your gut with the materials needed to thrive. These [beneficial bacteria](#) assist with digestion and absorption of your food, and play a significant role in your immune function.

One of the best ways to regain optimal balance in your gut is by eating fermented foods. Besides kimchi and other [fermented vegetables](#), which you can make at home very easily, there are also fermented beverages such as kefir and yogurt, all providing trillions of beneficial bacteria – far more than you can get from a probiotics supplement.

Poop Pills, a Colonoscopy or the Other Alternatives?

It's been a tough call for scientists and physicians alike, trying to determine which is worse – C. diff., antibiotics, colonoscopies (the most successful in terms of introducing fecal matter into patients) or the poop pill-popping protocol. C. diff. being what it is comes with serious, life-altering symptoms, which MedlinePlus⁸ says can include:

[Watery diarrhea](#) multiple
times daily

Stomach tenderness

Fever

[Dehydration](#)

Nausea

Abdominal pain

A colonoscopy is an example of an **invasive procedure**, but there's also the fact that patients typically undergo mild sedation, which introduces another risk because their breathing may become too slow. Further, there's the chance that in the course of the procedure, the patient's intestinal wall could be punctured, which could introduce life-threatening infections. Time observed:

"The benefits of swallowing a capsule are also undeniable compared to swallowing – or trying to swallow – a feeding tube through which a slurry of fecal matter is flowing through. (That's the way that doctors testing fecal transplants originally administered their doses.)

*That carries the risk of aspirating some of the fecal slurry into the lungs – not to mention the unpleasantness of introducing feces to the mouth area and accidentally breathing it in."*⁹

The Poop-in-a-Capsule Trial

Dina Kao, a gastroenterologist at the University of Alberta in Canada, used the pills described by Time¹⁰ as "fecal matter manufactured into a capsule" for 116 patients in the trial. Compared to a colonoscopy, both methods showed a 90% reduction in C. diff. relapses. All 116 study subjects had suffered a minimum of three bouts of C. diff. and were randomly assigned a poop swap via either the capsule or colonoscopy.

It must have been an exercise in "mind over matter" for the patients who were required to swallow down 40 capsules in one sitting, which took an average of a half-hour to an hour. The reduction in C. diff. relapse was determined after 90% of the patients remained C. diff.-free after 12 weeks. Preeti Malani, professor of medicine at the University of Michigan, who wrote an editorial to go with the study, noted:

"Based on this study, I think it would be very reasonable to think about fecal transplant capsules as your preferred approach. If it were myself or a family member, I think avoiding colonoscopy would be helpful."

Still, Melani and other researchers believe more studies are needed, not only to confirm the results found in Kao's study, but also to get a better understanding of how fecal transplant works.

Kao herself says she plans to study all the components of fecal transplants to get a clearer picture of what exactly helps control C. diff. Besides C. diff., microbe transplanting via a capsule is also a therapy currently used for obesity, diabetes, colitis and [Crohn's disease](#). It's a way gut bacteria can be positively linked to lowering the risks of such disorders and conditions as obesity, allergies, asthma and even some mental illnesses.

Fecal Transplantation Offers Less Invasive Method

While fecal transplantation may at first glance come across as quackery of the highest degree, once you understand the process, it's clear it's a successful way to swap bad bacteria for good.

Kao, whose first reaction upon the successful trial, quipped, "It's absolutely insane. We just don't see (this) kind of efficacy with drugs,"¹¹ added that she believes the favorable outcome of the fecal transplant pills will "transform" the way conventional medicine at large thinks about the unconventional therapy. She listed several of the benefits over the current protocols of antibiotics or surgery. Poop pills are:

- Noninvasive
- Less expensive
- Free of the risks associated with sedation
- Can be done in a doctor's office

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.¹² In November 2022, FDA also approved live-jslm (brand name Rebyota), a fecal microbiota

product that's given rectally.¹³ Both of these microbiota-based drugs are known as live biotherapeutic products, or LBPs. According to the Gut Microbes review:¹⁴

"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."

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.

Sources and References

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