

Poop pills sound gross, but cure serious gut infections

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Dr. Thomas Louie, an infectious disease specialist at the University of Calgary, holds a container of poop pills in triple-coated gel capsules in his lab in Calgary, Alberta, Canada. AP Photo/The Canadian Press, Jeff McIntosh

You may want to hold your nose before reading this: Doctors have found a way to put healthy people's poop into pills — and these pills are now being used to cure serious gut infections. Canadian researchers tried this method on 27 patients and cured them all after strong antibiotics failed to help.

It's a gross topic but a serious problem. Half a million Americans get *Clostridium difficile*, or C-diff, infections each year, and about 14,000 die. The germ causes nausea, cramping and diarrhea so severe it is often disabling. A very strong and pricey antibiotic can kill C-diff, but it also destroys good bacteria that live in the gut, making future infections more likely.

Recently, studies have shown that fecal transplants — in which infected people are given stool from a healthy donor — can restore good bacteria, preventing reinfection. But they're given through expensive, uncomfortable procedures like colonoscopies, where a tube is inserted into the colon via the rectum.

Doctors also have tried giving the stool through enemas, pumping it into the colon in liquid form, but the treatment doesn't always take hold.

Just Stool Bugs, Really, No Poop

There even are YouTube videos on how to do a similar enema treatment at home. A study in a medical journal of a small number of these "do-it-yourself" cases suggests the approach is safe and can be effective.

But now Dr. Thomas Louie of the University of Calgary has devised a better way — a one-time treatment custom-made for each patient.

Donor stool, usually from a relative, is processed in the lab to take out food and extract the bacteria and clean it. It is then packed into gel capsules that are triple-coated to prevent them from dissolving before they reach the intestines.

"There's no stool left — just stool bugs. These people are not eating poop," and there are no smelly burps because the contents aren't released until they're well past the stomach, Louie said.

Days before starting the treatment, patients are given an antibiotic to kill the C-diff. On the morning of the treatment, they have an enema so "the new bacteria coming in have a clean slate," Louie said.

You Have To Swallow A Lot Of Pills

It takes 24 to 34 capsules to hold enough bacteria for a treatment, and patients down them in one sitting. The pills make their way to the colon and seed it with the normal variety of bacteria.

On Thursday, at a medical conference in San Francisco, Louie described 27 patients treated this way. All had suffered at least four C-diff infections and relapses, but none got sick again after taking the poop pills.

Margaret Corbin, 69, a retired nurse's aide from Calgary, had a C-diff infection that lasted for two years.

"It was horrible," she said. "I thought I was dying. I couldn't eat. Every time I ate anything or drank water I was into the bathroom. I never went anywhere, I stayed home all the time."

With her daughter as the donor, she took pills made by Louie two years ago, and "I've been perfectly fine since," Corbin said.

Dr. Curtis Donskey of the Cleveland Veterans Affairs Medical Center, who has done fecal transplants through colonoscopies, praised the work.

"The approach that Dr. Louie has is completely novel — no one else has done this," he said. "I am optimistic that this type of preparation will make these procedures much easier for patients and for physicians."

Frozen Poop Being Tested For Pills

The treatment now must be made fresh for each patient so the pills don't start to dissolve at room temperature, because their water content would break down the gel coating. Minnesota doctors are testing freezing stool, which doesn't kill the bacteria, so it could be stored and shipped anywhere a patient needed it.

"You could have a universal donor in Minnesota provide a transplant for someone in Florida. That's where we're heading," Donskey said.

Other researchers are trying to find which bacteria most help fight off C-diff. Those might be grown in a lab dish and given to patients rather than having them take the whole range of bacteria in stool.

The hope is "we could administer that as a probiotic in a pill form," Donskey said. Probiotics deliver bacteria with health benefits – as opposed to antibiotics, which are used to destroy harmful bacteria.

Louie sees potential for the poop pills for other people with out-of-whack gut bacteria, such as hospitalized patients at risk of infection by antibiotic-resistant germs.

"This approach, to me, has wide application in medicine," he said. "So it's not just about C-diff."