

# FMT now available in capsule form: could this be the end of antibiotics in *C. difficile*?

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A new capsule form of faecal microbiota transplantation (FMT) has raised hopes that this effective treatment for *Clostridium difficile* (*C. difficile*) infection and other bowel conditions might soon become mainstream. A recently-reported study confirmed that capsules containing a frozen suspension of faecal material harvested from healthy unrelated donors was well tolerated and effectively resolved diarrhoea in 90% of patients with difficult-to-treat *C. difficile* infection.

Professor Antonio Gasbarrini from the A. Gemelli University Hospital in Rome, Italy, who will be presenting his research at the 23rd United European Gastroenterology Week in Barcelona, Spain later this month, believes that an oral formulation that simplifies FMT is a major step forward. "FMT is an excellent [treatment](#) for *C. difficile* infection, but traditional methods are time-consuming and technically challenging," he says. "Advances in the preparation and delivery of FMT will lead to its wider acceptance as a safe and [effective treatment](#) for *C. difficile* infection that could supersede antibiotics."

## ***C. difficile* infection challenges**

*C. difficile* infection is a type of bacterial infection that causes severe [diarrhoea](#), intestinal inflammation and cell death. The infection is spread via the ingestion of spores, which are passed out of the body in the faeces and can survive for many weeks or months. Standard therapy for *C. difficile* infection includes the use of antibiotics, however, around one-third of individuals will have a recurrent infection and many of these will

have multiple recurrences. The consequences of recurrences of *C. difficile* infection can be severe, resulting in life-threatening illness and frequent hospitalisations.

### **FMT in *C. difficile* infection**

FMT from a healthy donor to an individual with *C. difficile* infection can restore the healthy gut microbiota and resolve symptoms. FMT has traditionally been performed using a liquid suspension of faeces from a related donor, which is transplanted into the body using a nasogastric tube, endoscopy, enema or colonoscopy. A recent systematic review of the literature concluded that FMT was both effective and safe for the treatment of recurrent *C. difficile* infection, yet many hospitals have failed to embrace the technique or offer it as a potential treatment option.

"We believe that FMT is an excellent therapeutic option for patients who have failed to respond to antibiotic treatments or who have severe or multiple recurrences," said Prof. Gasbarrini. "Traditional routes of administration all have their drawbacks, so we are excited by the prospect of a capsule formulation."

In the recently-reported study of an FMT capsule, researchers in the US recruited 20 patients with *C. difficile* infection who had either failed to respond to antibiotic medications or had been hospitalized at least twice as a result of severe symptoms. The [capsules](#) were prepared using frozen liquid stool samples from carefully screened unrelated donors and administered to the patients on two consecutive days. After the first 2 days of treatment, 14 of the 20 patients (70%) experienced a resolution of their symptoms and remained symptom free for 8 weeks. After a second course of treatment, four of the remaining [patients](#) became symptom free, resulting in an overall 90% rate of symptom resolution.

"Although larger studies are needed to confirm these findings, this study could certainly lead to more widespread use of FMT in the treatment of recurrent *C. difficile* [infection](#)," said Prof. Gasbarrini.

**More information:** References:

1. Youngster I, et al. JAMA 2014;312(17):1772-78
2. Cammarota G, et al. J Clin Gastroenterol 2014; 48(8):693-702.

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