Whole-intestine approach could boost health benefits of fecal microbiota transplantation

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Abstract

Fecal microbiota transplantation (FMT) is the transfer of fecal microbes from a healthy donor to a recipient with disease, the goal being to restore the composition and functionality of the recipient's intestinal microbial community. One possible drawback of FMT is that feces largely contain microbes from the large intestine but not from the small intestine. A new study shows that this imbalance could limit the potential health benefits of FMT. The reason is that microbe colonization in the gut tends to be highly compartmentalized. Experiments showed that microbes transferred from donor pigs tended to colonize the same regions of the gut in recipient mice. Large-intestine microbes colonized the large intestine, and small-intestine microbes colonized the small intestine. Compared with FMT, this "whole-intestine" microbiota transplantation (WIMT) introduced more microbes derived from the small intestine, as predicted. Given the lack of small-intestine microbes in conventional FMT, WIMT could be a promising alternative that reconstitutes the microbiota across the entire intestinal tract.