Friday Favorites: Fecal Transplants for Ulcerative Colitis, MS, Depression, Bipolar, and Alcoholism Transcript

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Microbiome, Fiber, and Plant-Based Health

"Fecal Transplants for Ulcerative Colitis, MS, Depression, Bipolar, and Alcoholism" Plant-based foods and the microbiome in the preservation of health and prevention of disease.

We have evidence that high-fiber, plant-based diets can prevent many different common diseases, maybe through the effect that these diets have on the composition and metabolic activity of our microbiome, the bacteria in our gut.

Good gut bugs in our colon eat the plant residues and spit out health-promoting and cancer-suppressing metabolites. Like fiber is metabolized to short-chain fatty acids, which have profound anti-inflammatory, anti-cancer properties.

And we have special fiber-feeding microbes that chew through the plant cell walls and release all the anti-inflammatory, antioxidant, and anticancer goodies inside.

So, how many whole plant foods do we have to eat? All the evidence points to a physiological need for about 50 grams of fiber a day, which is what is contained in the traditional African diet and is associated with the prevention of common Western chronic diseases.

This is up to twice the recommended minimum and three times the current intake in the United States.

Fecal Transplants for C. diff and Ulcerative Colitis

How can you prove the microbiome is involved though? Fecal transplantation — stool transplants. One man's trash, another man's treasure. Currently, donor fecal microbiota transplantation is the optimum therapeutic approach for recurrent Clostridium difficile infection.

C. diff is today considered the most common hospital-acquired cause of diarrhea. It's a life-threatening infection that can rear its ugly head when your good gut bugs have been wiped out by antibiotics.

So to get rid of it, all we need are more good gut bugs, which can be provided by a healthy donor through the infusion of a liquid suspension of the donor's stool.

We are winning with poo. Fecal transplants have proven their worth in the management of recurrent C. diff diarrhea, with cure rates up to 90%. Because of this success, fecal transplants have been suggested as a potential treatment in other gastrointestinal diseases.

For example, the inflammatory bowel disease known as ulcerative colitis. There have been four randomized controlled trials, and fecal transplants appear to nearly double clinical remission rates.

But what about non-gastrointestinal disorders? Here's a case study of a series of fecal transplants for multiple sclerosis (MS). The patient experienced improvements in their microbiome, more of those fiber-feeding anti-inflammatory bacteria.

MS and the Role of Gut Bugs

And there was a significant increase in the levels of brain derived neurotrophic factor, which is suggested to play a neuroprotective role in MS, as well as both subjective and objective evidence of improved walking, which was the patient's primary MS symptom.

Now, to give the new fiber feeders something to chew on, the patient was put on a high fiber diet, which is great. But just putting people on a plant-based diet alone may help, stool transplants or not, since standard Western diets promote dysbiosis, a bad bug gut imbalance, and neuroinflammation in MS, while plant-based high-fiber diets decrease MS risks.

Randomized, placebo-controlled trials will be needed to tease that out, but in the meanwhile we can certainly build up good gut bugs the old-fashioned way by eating fiber-rich whole plant foods.

What about fecal transplants for depression? Interest in the gut microbiome and its role in health has exploded just in the last few years. Does any of this have relevance in psychiatry?

Maybe so. Several studies demonstrate microbiome differences between depressed persons and non-depressed persons. And after all, an imbalance in neurotransmitters is implicated in the cause of depression, and the gut microbiome is known to synthesize large quantities of these same neuroactive substances, like serotonin and dopamine.

Depression, Bipolar Disorder, and Stool Transplants

And there's a major information highway from the gut to the brain called the vagus nerve that could potentially alter mood states. Early fecal transplants were delivered from the bottom up, through colonoscopy, but now we have crapsules — encapsulated feces to make it easier to swap stool.

Here's a case report of a 79-year-old woman who suffered a tragedy and subsequently lost her appetite, became introverted, drowsy, and stayed in bed all day, wasting away 55 pounds over the next six months.

She was hospitalized for depression and prescribed multiple anti-depressant drugs, but to no avail. So, what the heck, they stopped the drugs and tried a fecal transplant.

The stool donor was her own 6-year-old great-grandson, who had a good appetite, an outgoing personality, and a disciplinary stool — I don't even know what that means.

Four days after the fecal transplant, she started feeling better, and by two weeks she was frankly euphoric. She was able to go back home, and within six weeks all was back to normal.

What about a fecal transplant for bipolar disorder? The poor woman was in and out of psych hospitals with manic depression until she got a fecal transplant with stool from her husband — that 's romantic — and within six months she was symptom free.

This case report was published in 2020, so symptom free for years, no longer on medication, and has lost more than 70 pounds to boot, either because she got slim hubby stool or just being off her psych meds.

She went from being functionally disabled to running a small business and has published two books. What about alcohol dependence? Alcoholism has traditionally been considered exclusively a brain disorder, but, hey, all these other psychiatric syndromes seem to have links to the gut.

So they compared the guts of alcoholics to nonalcoholics, and they found that some alcohol-dependent subjects developed gut leakiness, which was associated with higher alcohol craving.

Okay, but maybe instead of the gut issues somehow leading to alcohol cravings, the alcohol led to the gut issues. Alcohol may have a toxic effect on the gut wall, but both groups were consuming the same amount of alcohol at the time, so maybe there is some kind of gut connection after all.

This was the study that blew people's minds.

Alcohol Use Disorder and Fecal Microbiota Transplant

The transplant of feces from alcoholics into mice induced an alcohol preference. These were mice without any previous contact with alcohol, all of a sudden spontaneously preferring alcohol.

Normally mice don't really like alcohol, but feed them some feces from an alcoholic human, and they do a 180-degree switch. So wait. Are you saying that gut bugs can determine alcohol craving?

There's only one way to find out, and that's put it to the test. A randomized, double-blind, clinical trial of fecal microbiota transplant for alcohol use disorder, which is the current clinical term for alcoholism.

They took alcoholics with liver cirrhosis and active problem drinking and randomized them to get either a placebo enema or a fecal transplant enema. And within two weeks, alcohol cravings reduced significantly in 90% of the fecal transplant cases versus just 30% in placebo cases.

And this was validated by pee tests showing that they were drinking significantly less too, with improved cognition and psychosocial quality of life. Now this is all still just experimental, and not without potential downsides.

Yes, they're working on ways to make stool transplants more palatable. On balance, they've largely been found to be safe, though there have been cases of bad bugs being transferred from donors, even a fatal case.

And there's even a theoretical risk you could be transplanted with cancer cells, making it the gift that keeps on giving, but in a bad way.