

A poo dose a day may keep bipolar away. When it comes to mental health, what else could poo do?

March 17 2022, by Jessica Green & Gordon Parker



Credit: AI-generated image ([disclaimer](#))

In a world first, two Australians with bipolar have had poo transplants, their symptoms improved, and their cases were written up in [peer-reviewed journals](#).

One of us (Parker) treated the second of these patients with so-called fecal microbiota transplantation, and published his [case study](#) in recent weeks. The other (Green) is part of a team recruiting people with depression to a poo [transplant](#) clinical trial.

We'd be the first to admit it's early days for this type of treatment for bipolar or other [mental health issues](#). There are many hurdles before we could see poo transplants for these become commonplace.

Three months after starting poo transplants, Jane's world became brighter and happier <https://t.co/usdBFKc2iH>

— ABC News (@abcnews) [March 5, 2022](#)

So we do not advocate people abandon their existing medication, try this at home or demand their psychiatrist offer them a "crapsule" (a poo capsule and yes, that's a word).

Yet the limited results for bipolar so far are promising. Here's what the evidence tells us about the prospect of poo transplants for mental health.

Let's start with bipolar

There are different types of bipolar disorder. This is when people have distinct periods of [mania \(or a form known as hypomania\)](#)—with, for example, elevated mood, increased activity and decreased sleep—and periods of depression.

People with bipolar usually take medication to manage their symptoms, generally for life. These medications are mainly mood stabilizers (such as lithium), but many also take antipsychotics. These medications come with risks and side effects, which depend on the medication. Side effects can include [weight gain](#), sedation and [movement disorders](#).

What happened to the two patients?

In 2020, Russell Hinton, a private psychiatrist, [described how he treated](#) the first patient. This was a woman who had tried more than a dozen different medications for her bipolar. She had been hospitalized ten times, had gained considerable weight and judged she had no quality of life.

After a poo transplant from her husband, she became symptom-free over the next five years, lost 33 kilograms, required no medication and her career bloomed.

Gordon Parker and colleagues at the University of New South Wales [reported their results](#) with the second patient last month. This was a young man who developed bipolar as a teenager, had tried numerous medications and became progressively intolerant of their side effects.

After a poo transplant, he was able to progressively cease all medications over the next year, and had virtually no mood swings. He also noted an improvement in his anxiety and ADHD (attention deficit hyperactivity disorder).

How could this possibly work?

Trillions of bacteria live in our guts. This so-called gut microbiome has a huge impact on our health in general, not just the health of our brain.

Differences in [gut bacteria](#) have been linked to [obesity](#), [diabetes](#) and [irritable bowel syndrome](#).

The idea behind poo transplants is to change the [gut microbiome](#). You take poo, with all its micro-organisms, from a healthy person and give it

to the one being treated.

You can do this "top down," for example, by swallowing poo capsules (crapsules), or by delivering poo through a tube inserted into the nose, to the stomach or intestine.

Alternatively, you can insert the poo "bottom up." You can do this with an enema, a simple, painless procedure in which a syringe transfers the poo into the rectum. Or you can use a colonoscopy, a procedure performed under a general anesthetic involving inserting a tube higher up into the colon.

Poo transplants are already used to treat the often life-threatening gut infection caused by the bacterium *Clostridium difficile*.

They have also been trialed, with various degrees of success, in people with [irritable bowel syndrome](#), [ulcerative colitis](#), [HIV](#) and [hepatitis](#), among other [medical conditions](#).

Side effects from poo transplants [are rare](#), and usually relate to the way in which they are given, for example [side effects](#) of the anesthetic from poo transplants delivered by colonoscopy.

So how about mental health?

Abnormal gut microbiomes [have been linked](#) to bipolar, depression and schizophrenia.

When poo from depressed humans is given to rats, they appear to develop a [rat version of depression](#). Likewise, when mice are given poo from someone with schizophrenia, they [develop a mouse version of schizophrenia](#).

These are indirect findings. Yet they suggest poo transplants may have the potential to treat some mental health conditions.

So how exactly do bacteria in the gut impact mental health? There are many [different ways](#), each complicated and interacting with each other.

For example, these bacteria act directly on the gut wall, sending signals to the brain via the vagus nerve. The bacteria also produce large quantities of chemicals (for example, [short-chain fatty acids](#)), which impact virtually all body systems including the immune system. We know brain function relies heavily on immune cells.

Don't try this at home

At this stage, any evidence suggesting poo transplants may help people with depression or bipolar is, essentially, anecdotal.

Some people have tried their own version at home, involving poo donors who have not been screened for diseases.

One high-profile example is Dave Hosking from the Australian band Boy & Bear. He used a "[poo roadie](#)" to provide him with transplants on tour to help manage his depression and anxiety.

We wouldn't recommend this. Poo transplants should only be carried out under the supervision of medical professionals, using an approved and thoroughly screened poo product.

Poo transplants are [tightly regulated in Australia](#). Donations must be screened for harmful bacteria, fungi, parasites or viruses. Donors must also not have any health condition thought to be associated with gut bacteria, such as an autoimmune condition, cancer or obesity.

What happens next?

We need larger, well-designed studies to show poo transplants have a real effect, and any improved symptoms cannot be explained by other factors.

We also need to look for markers in the microbiome that could predict a successful result. If we knew those markers, we could optimize treatment and better measure the results.

The first author's center is recruiting [people with depression](#) to trial poo transplants. The study will randomize participants to have an enema or placebo enema. If successful, a larger study is planned.

In Canada, there are three such studies under way evaluating poo transplants. These are for [bipolar](#), [depression](#), with or without [irritable bowel syndrome](#).

Though promising, we cannot conclude at this time whether poo transplants work for bipolar or depression.

Until the results of these studies are in, it's too early to say if the early results with bipolar can be replicated on a larger scale.

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