

Severe Depression May Benefit from Neuromodulation Therapies

A Q&A with clinical neuropsychologist and researcher Shawn M. McClintock, PhD, MSCS, about the state of depression and promise of magnetic seizure therapy.

By [Melanie Padgett Powers](#)

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Look at a group of 10 people. Two of them will have depression. [Studies have shown that nearly 20% of people in the U.S. have depression](#), with rates significantly climbing after the COVID-19 pandemic. Rates have increased the highest among young adults, with 27% of people under 30 having depression in 2025.

Clinical neuropsychologists can be a part of an integrated health care team and help people figure out the connection between their depression and behaviors related to the brain. Is their depression affecting their memory, attention span or other cognitive abilities for example?

In 2022, clinical neuropsychologist and researcher Shawn M. McClintock, PhD, MSCS, published a book, as co-editor, called [“Neuropsychology of Depression.”](#) He is the Lydia Bryant Test Distinguished Professor in Psychiatric Research at UT Southwestern Medical Center in Dallas, as well as the scientific director of the Perot Foundation Neuroscience Translational Research Center at UT Southwestern’s Peter O’Donnell Jr. Brain Institute.

Brain Health Today interviewed Dr. McClintock about the state of depression and the promise of treatments such as magnetic seizure therapy. He will be a presenter at the 2026 [annual conference of the National Academy of Neuropsychology](#), which produces *Brain Health Today*.

This Q&A has been edited for length and clarity.

***Brain Health Today:* People in the U.S. began to talk more openly about mental health and depression during and after the COVID-19 pandemic. How do you see the state of depression today?**

Shawn M. McClintock, PhD, MSCS: I think the pandemic opened up a lot of conversations that had been needed, and it was wonderful to see that. Unfortunately, in our country, there is still a stigma about the majority of mental illnesses, depression being one of those. And yes, there is more openness; there is definitely more awareness. There are more organizations, both federal and foundations, that really highlight this and talk about it. And yet in health care, among providers, among adults, among society, there is still a stigma, and it is something that we still need to be working on.

We need to replace stigmatization with acceptance by promoting support, by promoting resilience and by promoting self-efficacy. And if we take away stigma, we have to fill it with something else because if we don’t, it’s going to rebound.

We’ve kind of seen that to a degree even post-pandemic, where it has gone back to like “maybe we don’t want to talk about this anymore.” Nobody really wants to talk about the pandemic anymore. We want to move on, but that just bottles it up until one day those feelings come out again. So I always recommend that we need to reduce the stigma, and we need to maximize and promote support, self-efficacy and resilience—because if we don’t, stigma will just creep right back in.

What is the state of depression treatment today?

I want to give a lot of credit to the National Institutes of Health, especially the [National Institute of Mental Health](#) and the [National Institute on Aging](#), and multiple foundations like the [Brain & Behavior Research Foundation](#) because their support has been so crucial and so invaluable. I would say right now, thanks to a lot of evidence in the past three decades, there are probably three big domains of antidepressant treatment.

One is medications. Two, is evidence-based behavioral interventions like cognitive behavioral therapy or dialectical behavioral therapy, and the third, broader domain is neuromodulation therapeutics. That would be things like [electroconvulsive therapy](#) and [transcranial magnetic stimulation](#).

In December 2025, transcranial direct-current stimulation got clearance [from the U.S. Food and Drug Administration (FDA)] as an [at-home treatment for major depressive disorder](#), so we are seeing newer therapies come about. We’re even seeing integrated therapies coming about, where it’s not just the medication, it’s not just the evidence-based psychotherapy, it’s not just the neuromodulation, but it is the convergence of the three.

This is in addition to other things such as lifestyle factors like exercise, which is an incredible benefit on so many levels and has been found to have antidepressant and cognitive benefits in randomized controlled studies. While we are always wanting to optimize our therapies, I’m encouraged by where we are right now with the way therapy development is going.

What are neuromodulation therapies?

Neuromodulation therapies are electrically applied therapies, electromagnetically applied therapies or surgically applied therapies. Electrically would be things like electroconvulsive therapy and transcranial direct-current stimulation because that actually uses electrical pulses.

Electromagnetic would be transcranial magnetic stimulation, which is FDA cleared for depression, and a newer therapy that I and others have been working on, which is called [magnetic seizure therapy](#). Magnetic seizure therapy uses electromagnetic pulses to induce a therapeutic seizure similar to electroconvulsive therapy, but with electromagnets, so it’s relatively safer.

From a surgical implanted standpoint, that would be things like deep brain stimulation, which is not FDA cleared at this time to treat depression. It is FDA cleared to treat essential tremor, dystonia, treatment-resistant epilepsy, Parkinson’s disease, and treatment-resistant obsessive compulsive disorder (where it has a humanitarian device exemption).

Another surgical therapy is vagus nerve stimulation, which is FDA cleared to treat epilepsy and depression. This is just another approach to providing therapy that actually is directly targeting the brain to change connectivity in the brain, to change the way the brain is communicating with itself to treat the depression, and also hopefully to maximize cognitive safety and/or to improve cognitive benefit too.

Electroconvulsive therapy (ECT) might sound scary to some people. Can you explain how it’s better and safer today?

I’m glad you bring that up because you’re right, historically, ECT had a bad reputation for the way it was administered at that time. Let’s flash-forward eight decades to now: ECT is a modern-day, medically safe, integrated health care team-based therapy that is done across the United States and the globe.

It is probably the No. 1 most effective treatment for those patients whose depression, unfortunately, does not benefit from anything else. It is medically safe. While it can cause [transient cognitive adverse effects](#), those adverse effects in general tend to resolve within a month or so after the last treatment. There’s a lot of research evidence supporting this treatment. There’s a lot of guidance out there for patients and their care partners, and it’s a treatment that is very much needed, especially for those whose depression does not benefit from other antidepressant strategies.

Depression is an illness that kills. Depression causes disability. It causes morbidity. It causes mortality. It results in higher rates of suicidality. ECT saves. ECT can treat that depression. And what I always encourage people to do is to have a thoughtful conversation about what is *now* versus what *was*.

You are researching the benefits of magnetic seizure therapy on depression. Tell us about your work.

We just completed a [very large scale study on magnetic seizure therapy](#). Magnetic seizure therapy was pioneered two or so decades ago as a newer treatment for those patients whose depression was so severe, nothing else would benefit it. This is not a treatment that everybody can just get, nor can anybody just get ECT either—the depression has to be at a level where it is warranted.

With magnetic seizure therapy, what we have seen is it has the same antidepressant benefits as ECT, and it is relatively cognitively safe, meaning we do not see the level of cognitive adverse effects like we do with ECT. If anything, we’re seeing potential cognitive improvement in certain areas, and that is an avenue of investigation we’re going to continue to pursue. At this current time, magnetic seizure therapy is investigational only. We do hope one day it will become FDA cleared. But at this current time, this treatment is only provided through research.

Do we understand how these treatments are working in the brain?

We have multiple theories, but nothing is conclusive at this time. I always like to say that we’re trying to help the brain talk better with itself. We’re trying to change that disrupted communication to make it healthy communication—because we definitely know that when the different parts of the brain align well, things usually work well.

And research has shown us that in patients with depression, the brain is not communicating the way it’s supposed to do. So, we definitely know there’s discordance and disruption when you’re depressed, but when we change that and we make it healthy, the brain’s talking, its parts are talking. That depression usually goes away.

What do you think needs to change in this country when it comes to depression treatment?

First, I’d want our country to acknowledge it and not to see it as a weakness, not to see it as something that was self-inflicted—that somebody chose to have depression—but for our country to really see it as a medical neuropsychiatric illness. Just like high blood pressure, like cardiac disease, like diabetes, like cancer, this is a real, legitimate, tangible illness. It is not feigned. It is not quote-unquote “in our heads.” It may live in our brain, and it also lives in our body.

And to recognize that it’s not something that only affects one group of people, that it can affect everybody across the entire age span, from children all the way up to older adults. That, to me, is something I think needs to change greatly because it’s that acknowledgement that then leads to openness, that then leads to durable change.

What are you hopeful for?

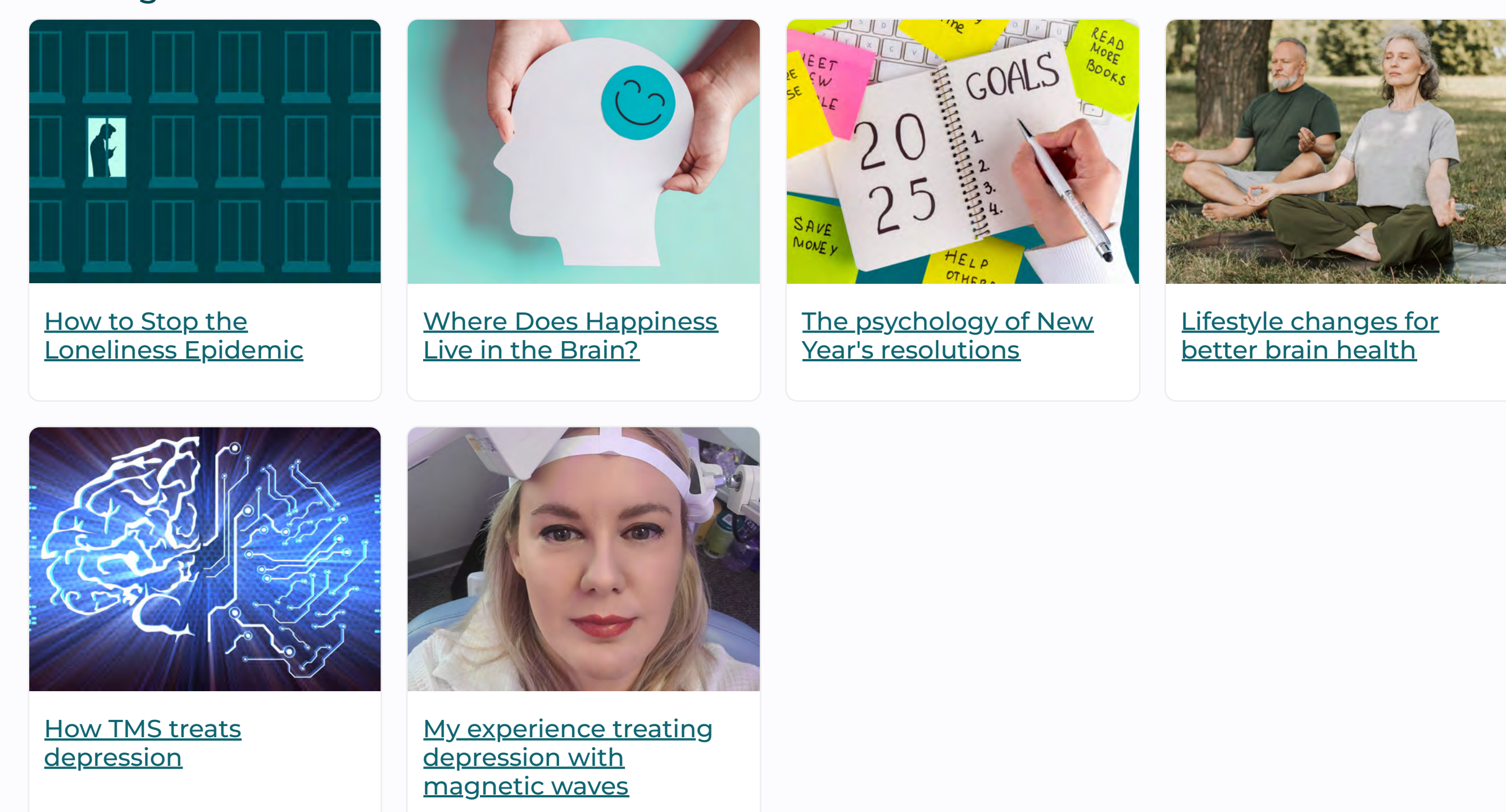
What I’m hopeful for, especially in the upcoming five to 10 years, is that we are getting new treatments and our treatments are becoming better. And that’s due to a lot of research that’s supporting their guidance, development and implementation.

Second, what I’m optimistic and hopeful about is that since the pandemic, there has been more open conversations about this. It’s not just the health care providers trying to make action, but it’s people who are now making action too. They’re being more proactive about their health, seeking out health care, and talking to somebody else about this and not keeping it hidden anymore. So, that gives me a ton of hope for our field and for our world.

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