

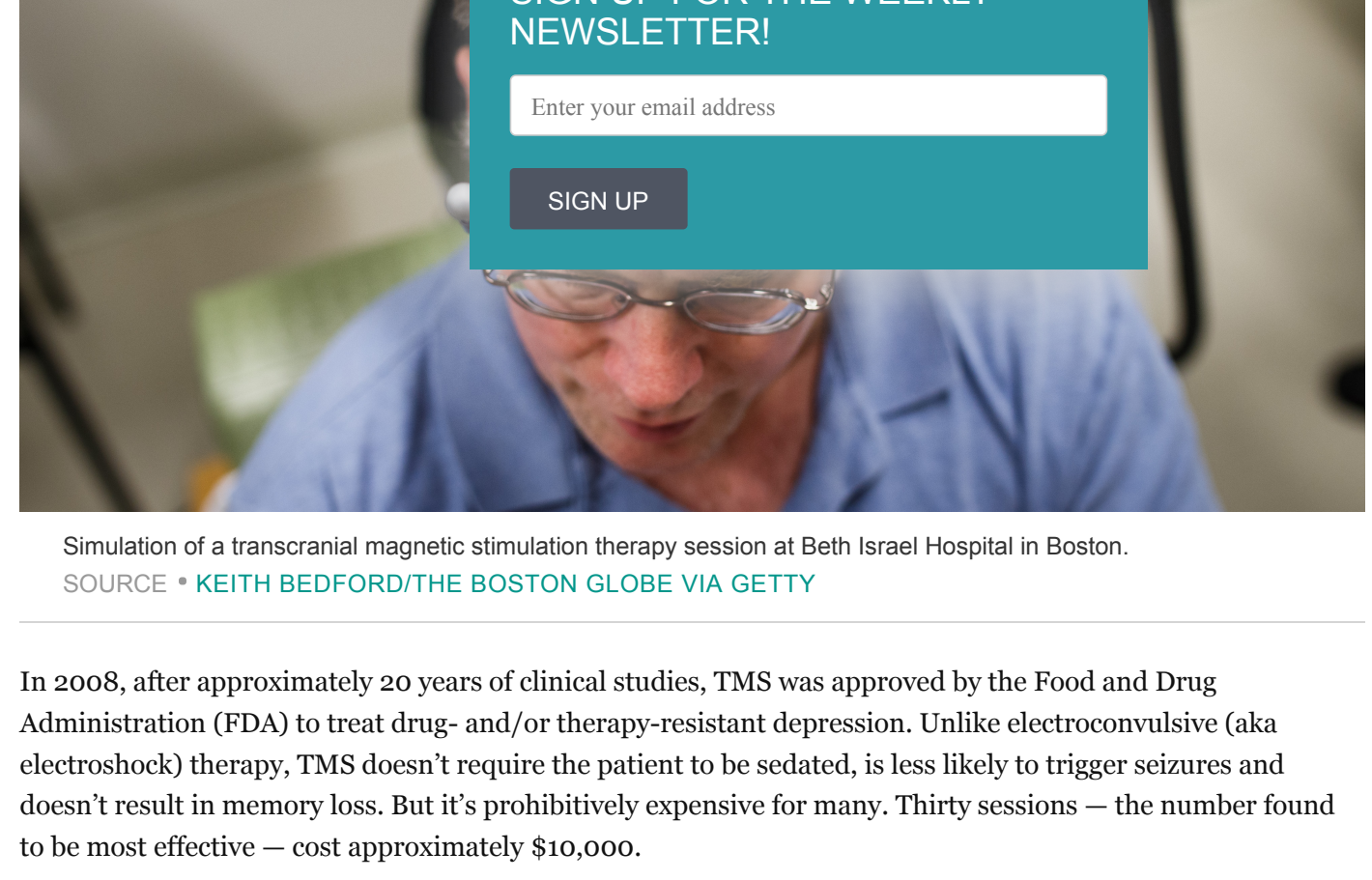
THE NEW + THE NEXT

CAN AT-HOME BRAIN STIMULATION REALLY TREAT DEPRESSION?

By Heather Hughes
JULY 6, 2019

For three and a half months, every weekday morning was identical. A nurse practitioner would escort me from the locked psychiatric unit to a small room on the neurological unit, where I was seated in a large, dentist-style chair and a few electrodes were attached to my temples. A technician positioned a large metal coil against the upper left portion of my skull, and then the tapping began.

Imagine a small woodpecker tapping against your skull rapidly for four seconds, pausing for 30 seconds and then resuming its persistent tapping for another four seconds. Imagine this pattern repeating for 45 minutes. It wasn't pleasant, but it wasn't painful either. I had volunteered for the experience, as part of a clinical study on transcranial magnetic stimulation, or TMS, at the National Institutes of Health in Bethesda, Maryland, after sliding into an unrelenting depression that didn't respond to medication. I was among the 30 percent of people who receive TMS and find it effective. Now, versions of that technology are increasingly available in the comfort of your home, and at affordable costs.



Simulation of a transcranial magnetic stimulation therapy session at Beth Israel Hospital in Boston. SOURCE • KEITH BEDFORD/THE BOSTON GLOBE VIA GETTY

In 2008, after approximately 20 years of clinical studies, TMS was approved by the Food and Drug Administration (FDA) to treat drug- and/or therapy-resistant depression. Unlike electroconvulsive (aka electroshock) therapy, TMS doesn't require the patient to be sedated, is less likely to trigger seizures and doesn't result in memory loss. But it's prohibitively expensive for many. Thirty sessions — the number found to be most effective — cost approximately \$10,000.

PEOPLE CAN CONVINCE THEMSELVES IT [AN AT-HOME DEVICE] WORKS.

DR. BRUCE LUBER, STAFF SCIENTIST, NATIONAL INSTITUTE OF MENTAL HEALTH

Enter at-home "brain-stimulating" devices, which can be purchased for as little as \$120. Over the past seven years, at least 12 firms making and selling at-home devices for the treatment of depression have emerged in the U.S. These firms — such as TCT Research, Super Specific Devices and Omni — are tapping into a huge market: Approximately 16 million people in the U.S. suffer from major depression. One such firm distributing neurostimulation devices, has seen "continuous growth, 60 to 70 percent in each sales quarter," says Robin Azzam, founder and CEO. He refers to the company as "the Amazon of neural modulation." Many of these firms sell devices that use a variant of TMS called transcranial direct current stimulation (tDCS), which creates much smaller currents that are safer for home use.



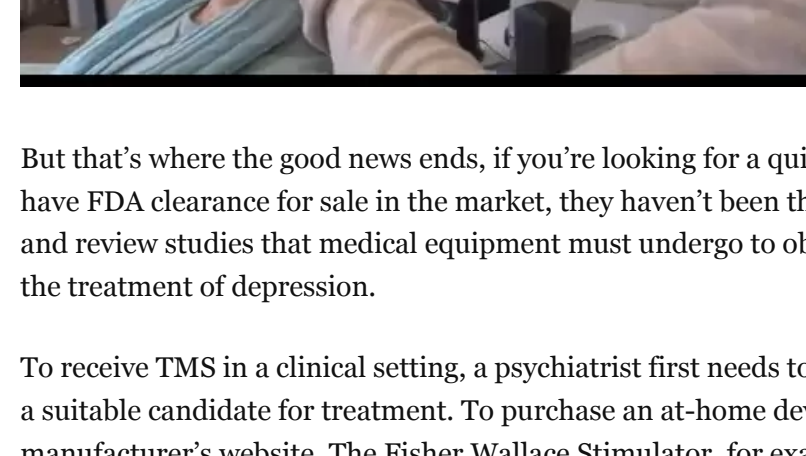
The Omni Stimulator. SOURCE • OMNI

"Static electricity [creates] a bigger shock" than these devices do, says Dr. Bruce Luber, a scientist at the National Institute of Mental Health who has been conducting TMS studies since 1995.

Other companies promote their devices as being useful for a variety of ailments. For example, eNeura touts the sTMS Mini as effective for treating and preventing migraines. The Brain Stimulator is marketed as a way to address everything from depression (alleviating it) to learning skills (boosting them).

Some companies, though, are more circumspect when it comes to the claims they make. Caputron's Azzam, for example, says his company takes "a very conservative approach in our marketing." The company doesn't tell customers what the devices may or may not be effective in treating, but it also doesn't ask customers what they're buying the devices for.

TMS uses a pulsed magnetic field to stimulate electrical activity in the prefrontal cortex, the part of the brain that in depressed people often shows considerably reduced activity compared with that of non-depressed people. And the engineering of at-home devices isn't very complicated. In fact, DIY engineers are using YouTube videos to demonstrate how you could build your own device — within 12 minutes.



But that's where the good news ends, if you're looking for a quick fix to depression. While the at-home devices have FDA clearance for sale in the market, they haven't been through the rigorous, often years-long clinical and review studies that medical equipment must undergo to obtain the agency's approval as being effective for the treatment of depression.

To receive TMS in a clinical setting, a psychiatrist first needs to evaluate a client to determine whether they're a suitable candidate for treatment. To purchase an at-home device, all that's necessary is a visit to the manufacturer's website. The Fisher Wallace Stimulator, for example, offers the option of obtaining authorization from "an independent, licensed provider" (for an additional \$18). That authorization, according to the website, will take only about five minutes — much quicker than the wait at a doctor's office, not to mention the wait to get an appointment with said doctor.



The Fisher Wallace Stimulator. SOURCE • FISHER WALLACE

But TMS is not a one-size-fits-all procedure: The intensity of the magnetic stimulation required varies from patient to patient. Some devices, however, require no testing — one device, one intensity, one way to use the device and any accompanying equipment. While a team of international researchers from the U.S., Canada and Germany in 2016 found no evidence of tDCS devices causing any "serious adverse effects" in users, doctors have cautioned that the at-home products, if used inappropriately, could impair rather than improve brain functions. "Putting electrodes in the same place on two different people can create very different effects," cautions Luber. "Your brain is a very complicated place."

Some users claim to have benefited. "It reboots my brain back to a resting state of clarity and calm," marvels Elizabeth, who is identified as a neuroscientist in Fisher Wallace's Product Reviews section. "Without the support of the CES [cranial electrotherapy stimulation device], I would still be in the midst of insurmountable struggles and would be completely nonfunctional," testifies another user, identified simply as Young Woman, North Carolina.

But the responses I received to posts I made on different depression-related internet message boards and groups [from] those that can be used for back pain," said another. "It's not strong enough nor targeted enough," replied a third.

Any relief from depression offered by these devices [in an at-home device] works," he says. "There's a big placebo effect with depression."

Still, for the millions of Americans desperate to find relief from the unrelenting misery of severe depression, it's often worth it to try new treatments that are still only partly proven — or, at times, even those that are unproven. TMS, which is proven, is now covered by several medical insurance companies. But for those people with high deductibles — mine, for example, is \$5,000 — out-of-pocket expenses can reach several thousands of dollars before reimbursement kicks in. And as technology continues to advance, even skeptics such as Luber believe it's possible there will be breakthroughs that revolutionize how depression is treated.

"Sometime down the road, these devices will be amazing ways to treat your depression at home," says Luber. "But we're not there yet."

Heather Hughes, OZY Author

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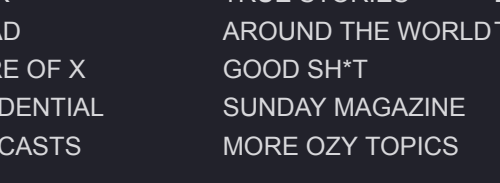
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J Charly Miranda I've been searching for "how to beat depression without meds" for a while now, and I think this has helped. Have you heard about - Destroy Depression Program Trick ? Go to : urlbing.com/destroydepression It is a good one off guide for beating depression fast minus the headache. I've heard some unbelievable things about it and my BF at very last got great results with it. Like · Reply · 1 · 30w

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