

# No proof at-home 'cranial stimulation' eases depression

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(HealthDay)—Devices that send electrical pulses to the brain—in the

comfort of your own home—are a treatment option for depression and certain other conditions. But a new research review finds little evidence they work.

The [therapy](#)—known as cranial electrical stimulation (CES)—involves a handheld [device](#) that delivers low-intensity electrical currents through electrodes placed on the head.

The new review, of 26 [clinical trials](#), found "low-strength" evidence that the therapy can help people with both depression and anxiety.

But there was no proof it was effective for depression alone, insomnia, joint pain or chronic headaches.

However, the review doesn't prove the therapy doesn't work, either.

Researchers said the issue is that most of the studies were small, short-term or had other limitations.

"The evidence was insufficient that these devices are effective. But that's not the same as saying that they don't work," said lead researcher Dr. Paul Shekelle, chief of general internal medicine at the VA West Los Angeles Medical Center.

Dr. Wayne Jonas called the findings "disappointing," but agreed they are not the final word on cranial electrical stimulation.

"There's just not enough evidence there for us to know whether it works," said Jonas, of Samueli Integrative Health Programs, in Alexandria, Va.

Jonas wrote an editorial published with the review in the Feb. 13 online edition of *Annals of Internal Medicine*.

A number of CES devices are approved by the U.S. Food and Drug Administration for people to use at home, with a doctor's prescription.

However, they are easily purchased online—on sites where they are sold second-hand, for example.

Jonas advised against that. "This is supposed to be something a doctor prescribes for you, not something you buy off the internet," he said.

And given the uncertainty around CES, Jonas said, it's important that people talk to their doctor about all of their treatment options.

Shekelle agreed. The devices themselves are powered by a 9-volt battery, he noted. The concern is not so much that CES will directly harm people.

The main worry, Shekelle said, is that people will "self-treat" with CES, and not get therapies that have good evidence to back them up.

The findings are based on an analysis of 26 clinical trials, most involving fewer than 30 patients.

Most studies tested CES against a "placebo," meaning an inactive device. A few pitted it against standard treatment.

One relatively larger trial—of more than 100 patients—focused on people with both depression and anxiety. And it found that CES appeared more effective than a placebo version.

But, Shekelle said, it had limitations. It was only five weeks long, for one.

There was no clear evidence the stimulation therapy was better than a

placebo when it came to other conditions. These included depression alone, insomnia, and chronic pain conditions such as fibromyalgia, headache and achy joints.

On the bright side, the therapy seemed fairly safe. Side effects were mainly mild skin tingling or irritation, and sleepiness.

"The risk of harm appears to be pretty low, as long as you use an FDA-cleared device," Jonas said.

But like Shekelle, he said the main potential "harm" is that people will bypass proven therapies in favor of CES.

And that includes other non-drug options, Jonas stressed.

When it comes to low back pain, for instance, treatment guidelines say people should first try tactics such as heat wraps, acupuncture and yoga before turning to medication.

If CES does help people with combined depression and anxiety—or any other disorder—it's not clear why.

Early animal studies suggested it might alter certain "chemical messengers" in the brain. More recently, research has shown it might temporarily change the "connectivity" among certain brain cells, according to Shekelle's team.

Jonas suspects CES works mainly by "inducing relaxation."

What about people who are already using the therapy?

"If you are using this under medical supervision, and feel that it's helping, then by all means keep using it," Shekelle said.

On the other hand, he added, if the therapy has not eased your symptoms, it may be time to discuss other options with your doctor.

For people who are considering CES, cost is another factor. Insurance may cover it, but there may be a hefty co-pay. Jonas said he works at a military hospital where active-duty personnel can get a CES device for free—while those not on active duty have a co-pay of about \$300.

**More information:** Paul Shekelle, M.D., chief, general internal medicine, VA West Los Angeles Healthcare System, and professor, medicine, University of California Los Angeles School of Medicine; Wayne Jonas, M.D., executive director, Samueli Integrative Health Programs, Alexandria, VA, and professor, medicine, Georgetown University, Washington, D.C.; Feb. 13, 2018 *Annals of Internal Medicine* online.

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The U.S. National Institute of Mental Health has more on [brain stimulation therapies](#).

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