

# Scientists review deep brain stimulation to treat psychiatric diseases

29 June 2009

Pioneering therapeutic trials to investigate the effectiveness of deep brain stimulation (DBS) in hard-to-treat depression, obsessive-compulsive disorder (OCD) and Tourette's syndrome are underway at multiple medical centers around the world, according to a review in the June 2009 issue of *Mayo Clinic Proceedings*.

"[Deep brain stimulation](#) has long been seen as valuable for controlling movement disorders," according to the review, written by Susannah Tye, Ph.D., Mark Frye, M.D., from the Mayo Clinic Department of Psychiatry and Psychology, and Kendall Lee, M.D., Ph.D., Mayo Clinic Department of Neurosurgery. "It now is being investigated for hard-to-treat psychiatric disorders," according to the authors.

"Early results indicate the effect on depression and obsessive compulsive disorder is beneficial, but the therapy needs further study," Dr. Lee says. The potential for this breakthrough treatment is enormous in reducing the toll of mental illness on patients, their families and society, according to the review.

Unlike electroshock therapy (ECT), which stimulates the entire brain, DBS stimulates specific parts of the brain. DBS is thought to be functionally equivalent to creating a lesion on the brain, but with the advantage of being adjustable and reversible.

"It is like implanting a pacemaker for the brain," says Dr. Lee. The patient is awake during deep brain stimulation surgery while a neurosurgeon implants the electrodes. Patients are able to give immediate feedback. Additionally, patients do not feel any pain during the implantation procedure since the brain is without pain receptors.

In the developed world, major depression is second only to cardiovascular disease in premature mortality and time lived with disability

according to the review. In persons aged 15 to 44 years, depression is the most disabling medical illness in the United States. The prevalence of major depression, known to be a chronic and relapsing illness, is approximately 17 percent, affecting almost 1 in 5 persons.

Medications and psychiatric therapy can effectively treat many patients with [major depression](#); however, up to 20 percent of these patients fail to respond to these non-surgical therapeutic interventions.

"DBS is not a miracle cure and should not be used to treat all depression," says Dr. Lee. "It should be reserved for those patients who have treatment-resistant depression and approved by a multi-disciplinary team." Ongoing advances in DBS technologies represent an important new field that could greatly advance the understanding of psychiatric neurobiology, according to the review.

Source: Mayo Clinic ([news](#) : [web](#))

APA citation: Scientists review deep brain stimulation to treat psychiatric diseases (2009, June 29)  
retrieved 22 June 2022 from <https://medicalxpress.com/news/2009-06-scientists-deep-brain-psychiatric-diseases.html>

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