TARGETTED STIMULATION
Deep-brain stimulation (DBS) is under study for the treatment of numerous brain diseases. From psychiatric disorders, such as depression and obsessive-compulsive disorder, to neurodegenerative ailments, such as Parkinson’s and Alzheimer’s, the insertion of electrical probes into the brain to either stimulate or inhibit neuronal activity is proving effective in reducing symptoms. The trick is finding the right target.

MOVEMENT DISORDERS
GLOBUS PALLIUS
Helping to regulate voluntary movements, the globus pallidus is a target of DBS for Parkinson’s, dystonias, and Tourette’s patients.

THALAMUS
A region critical for relaying motor commands and feedback to and from the cerebral cortex, the thalamus has been targeted by DBS in the treatment of both Parkinson’s and Tourette’s.

SUBTHALAMIC NUCLEUS
Electrical stimulation in this region involved in running and regulating movement helps relieve some symptoms of Parkinson’s disease.

PSYCHIATRIC DISORDERS
CAUDATE NUCLEUS
DBS aimed at the caudate nucleus, a part of the brain’s learning and memory system, and the subthalamic nucleus, a region involved in the brain’s ability to learn, may treat obsessive-compulsive disorder.

FORNIX
Serving as the “highway” in and out of the hippocampus and playing a key role in memory formation, this brain structure has been targeted in Alzheimer’s patients.

COGNITIVE DISORDERS
ORBITOFRONTAL CORTEX
Subcallosal cingulate
DBS is treat depression has targeted this region of the brain’s cortex, a region of the brain that is known colloquially as the “sadness center” of the brain.

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