

UHealth Neurosurgeon Implants Latest Two-way Deep Brain Stimulation Device

University of Miami Health System neurosurgeon Jonathan R. Jagid, M.D. is the first in South Florida to implant the Percept™ device, the first and only deep brain stimulation (DBS) system that stimulates the brain while also recording brain signals, as opposed to traditional one-way models. Newly approved by the U.S. Food and Drug Administration, the Percept™ device, manufactured by Medtronic, marks the next step in UHealth's advanced work in the DBS field and consistent use of the latest technology.

"I've been doing deep brain stimulation for about 17 years at the University of Miami," said Dr. Jagid, director of functional and epilepsy neurosurgery. "We have the most comprehensive deep brain stimulation program that is the longest-running in South Florida, and as such we use the most advanced technology."

How the Percept™ device improves care

DBS is a treatment for various movement and psychiatric disorders, the most common being Parkinson's disease. In DBS surgery, a small neurostimulator is placed under the skin near the collarbone. Leads connected to the neurostimulator are implanted into various parts of the brain, depending on the condition being treated. The device generates stimulation to the brain to help regulate movement.



DBS device sends stimulation to the brain.

The Percept™ device can capture brain signals continuously and send that information back so that the neurologist can adjust the stimulation's strength based on the reported data. For conditions such as Parkinson's disease, this information enables a more thorough understanding of the particular times of day that symptoms flare-up, which may allow for improved more personalized daily medication adjustments.

Up to this point, DBS technology has provided only a one-way channel for brain stimulation. The neurologist monitoring the patient and programming the device relied on patient feedback to reprogram the device's stimulation parameters. The contrast in device capabilities and treatment is stark.

"You're almost able to change your whole paradigm of treating Parkinson's, because this device, for the first time, is going to give the neurologist information that they couldn't get before," said Dr. Jagid.

While Dr. Jagid is the neurosurgeon who implants the devices,

Corneliu Luca, M.D., Ph.D., a UHealth neurologist, and director of the DBS program with UM's Department of Neurology, assesses patients and adjusts their DBS devices accordingly. For him, this device eliminates trial and error and gives him additional confidence in how well his programming improves a patient's daily life.

"It means I have the improved ability to give the patients advanced treatment options," said Dr. Luca.

The future of DBS

The Percept™ device, while cutting edge, is only one step toward the ultimate goal for DBS technology: a closed-loop device that self-programs based on the feedback it receives from the brain.

Clinical trials are already underway, according to Dr. Luca. Additionally, he said that data collected by Percept™ devices will aid the research and trials necessary to reach FDA approval for a closed-loop device.

To learn more about deep brain stimulation at UM, [visit the web page](#) or call (305) 243-2781.