Barrow researcher launches depression study

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A top medical researcher at Barrow Neurological Institute at St. Joseph's Hospital in Phoenix, Arizona, has launched a clinical trial to pinpoint brain activity in depressed people by using scientifically designed sad and heartrending photos and music. Results will be used to help neurosurgeons at the new Barrow Center for Neuromodulation treat clinically depressed patients with deep brain stimulation.

Neuropsychologist Leslie Baxter, PhD, who also is an expert in medical brain mapping, is leading the novel depression study that could help revolutionize treatment of depressed patients.

"Treatment for severe depression has been a medical challenge for decades," says Dr. Baxter. "We hope through this clinical trial to help make deep brain stimulation a mainstream treatment for this devastating condition." Depression affects 121 million people worldwide and ranks among the leading causes of disability. At least 20 percent of patients do not respond to traditional treatments.

Deep brain stimulation (DBS) is the cornerstone of the new Barrow Neuromodulation Center. Deep brain stimulation involves the implantation of an electrode deep within the brain in the area associated with a disorder. A medical device, sometimes called a brain pacemaker, sends electrical signals to the brain, alleviating symptoms. An established treatment for movement disorders, Barrow is now pioneering its use in other behavioral and neurological disorders including depression, obsessive compulsive disorder (OCD), pain and autism.

In the depression clinical trial, non-depressed and depressed patients undergo a "Functional MRI" for the hour-long MRI study. The patients are shown photos and videos of sad and tragic scenes to elicit sadness. As the Functional MRI lights up brain circuitry, the researchers are able to identify the exact point of individuals' brains that are being activated and the circuits that can be changed during depression.

Dr. Baxter says that thus far nine non-depressed people have been studied. "We have developed the testing and established its ability to highlight circuitry associated with depression in these participants. We are now starting the study with depressed patients. We want to include at least 20 depressed and 20 non-depressed."

One of the participants in the clinical trial says it is "high time" that more research is done on depression. "For too long the topic of depression has been taboo in society, but it can no longer be ignored," says Melissa Schultz, a Phoenix art teacher who has suffered from depression most of her life. "I'm not a candidate for deep brain stimulation since my condition is managed effectively with other treatments. I hope this study helps other people, however, who suffer from serious depression. It's like a whole new life when a person is treated effectively for depression. I'm very grateful to be in the study."

Working with Dr. Baxter on the study is Phoenix psychiatrist Dr. Gary Grove. Dr. Baxter emphasizes that only depressed patients who are under the clinical care of a psychiatrist are eligible for the clinical trial.

While DBS has been used experimentally on a few depressed patients, experts like Dr. Baxter are trying to improve its effectiveness. "Our study has already shown that people's brain circuitry differs slightly from person to person and that we must develop more exact pre-trial testing such as the use of this Functional MRI. Currently, the neurosurgeons use landmarks and a general idea of where the area should be based on

structure. We would add in functional information."

Provided by St. Joseph's Hospital and Medical Center

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