

Is magnetic therapy effective for tinnitus?

September 18 2012

Loyola University Medical Center is studying whether a new form of non-invasive magnetic therapy can help people who suffer debilitating tinnitus (ringing in the ears).

The therapy, transcranial [magnetic stimulation](#) (TMS), sends short pulses of magnetic fields to the brain. TMS has been approved since 2009 for [patients](#) who have [major depression](#) and have failed at least one antidepressant.

The Loyola study will include patients who suffer from both depression and [tinnitus](#). Recent studies have found that about 12 percent of people with [chronic tinnitus](#) also suffer depression and anxiety—a rate three times higher than that of the general population.

Tinnitus is the perception of sound in one or both ears when there is no external source. It can include ringing, hissing, roaring, whistling, chirping or clicking. About 50 million Americans have at least some tinnitus; 16 million seek medical attention and about 2 million are seriously debilitated, according to the American Tinnitus Association. There is no cure.

The perception of phantom sounds can be more pronounced in people who are depressed. Moreover, antidepressant medications can cause tinnitus occasionally, said Dr. Murali Rao, principal investigator of Loyola's TMS tinnitus study.

Several earlier studies have found that TMS can benefit tinnitus patients.

Loyola's study is the first to examine patients who suffer from both tinnitus and depression. "The combination of these two conditions can be extremely debilitating," Rao said.

During TMS treatment, the patient reclines in a comfortable padded chair. A magnetic coil, placed next to the left side of the head, sends short pulses of magnetic fields to the surface of the brain. This produces currents that stimulate [brain cells](#). The currents, in turn, affect mood-[regulatory circuits](#) deeper in the brain. The resulting changes in the brain appear to be beneficial to patients who suffer depression. Each treatment lasts 35 to 40 minutes.

The study will enroll 10 to 15 patients. Each patient will receive five treatments a week for four to six weeks, for a total of 20 to 30 treatments. Each patient will be evaluated by a physician three times during the treatment course, or more frequently if the doctor deems necessary.

The treatments do not require anesthesia or sedation. Afterward, a patient can immediately resume normal activities, including driving. Studies have found that patients do not experience memory loss or seizures. Side effects include mild headache or tingling in the scalp, which can be treated with Tylenol.

Rao is chair of the Department of Psychiatry and Behavioral Neurosciences of Loyola University Chicago Stritch School of Medicine. His co-investigator in the study is Sam Marzo, MD, medical director of Loyola's Balance and Hearing Center. Other investigators are Matthew Niedzwiecki, MD, a psychiatry resident; and James Sinacore, PhD, a statistician.

Provided by Loyola University Health System

Citation: Is magnetic therapy effective for tinnitus? (2012, September 18) retrieved 5 May 2024 from <https://medicalxpress.com/news/2012-09-magnetic-therapy-effective-tinnitus.html>

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