

Commentary

Research of Neuroimaging Technique Studies Brain stimulation for depression

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Received: June 04, 2021; **Accepted:** June 18, 2021; **Published:** June 30, 2021

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Abstract

New neuroimaging technique studies brain stimulation for depression. TAMPA, Fla. (May 4, 2021) -- Repetitive transcranial magnetic stimulation, or rTMS, was FDA approved in 2008 as a safe and effective noninvasive treatment for severe depression resistant to antidepressant medications.

The study of published in the journal Scientific Reports. Repetitive transcranial magnetic stimulation, or rTMS, was FDA approved in 2008 as a safe and effective non-invasive treatment for severe depression resistant to antidepressant medications.

Keyword: Neuroimaging, dysthymia

Introduction

Depression is one of the world's most prevalent mental health problems, with as many as 350 million sufferers worldwide and close to 20 million sufferers in the US. While neuroimaging applications for identifying various types of depression have made enormous strides in recent years, no findings have been sufficiently replicated or considered significant enough to warrant application in clinical settings. Our authors are well equipped to tell us what the future may bring. The growth of the literature about neuroimaging of major depressive disorder (MDD) over the last several decades has contributed to the progress in recognizing precise brain areas, networks, and neurotransmitter processes related to depression.

Neuroimaging (Brain Imaging)

Neuroimaging or brain imaging is the use of various techniques to either directly or indirectly image the structure, function, or pharmacology of the nervous system. It is a relatively new discipline within medicine, neuroscience, and psychology.[1] Physicians who specialize in the performance and interpretation of neuroimaging in the clinical

setting are neuroradiologists.

Neuroimaging falls into two broad categories:

- Structural imaging, which deals with the structure of the nervous system and the diagnosis of gross (large scale) intracranial disease (such as a tumor) and injury.
- Functional imaging, which is used to diagnose metabolic diseases and lesions on a finer scale (such as Alzheimer's disease) and also for neurological and cognitive psychology research and building brain-computer interfaces.

Brain Imaging Identifies Different Types of Depression

Objective lab tests can physically confirm heart disease or cancer, but psychiatric conditions are classified somewhat vaguely as clusters of reported symptoms. Doctors consider people clinically depressed if they say they have low mood and meet at least four additional criteria from an overall list of nine. Yet depression can manifest differently from person to person: One might be putting on pounds and sleeping much of the time whereas another might be losing weight, feeling anxious and finding it difficult to sit still, says Conor Liston, a neuroscientist and psychiatrist at Weill Cornell Medicine. "The fact that we lump people together like this has been a big obstacle in understanding the neurobiology of depression,"

Understanding depression

Everyone goes through periods of deep sadness and grief. These feelings usually fade away within a few days or weeks, depending on the circumstances. But profound sadness that lasts more than two weeks and affects your ability to function may be a sign of depression.

Major depression

A constant sense of hopelessness and despair is a sign you may have major depression, also known as clinical depression. Major depression can sometimes occur from one generation to the next in families, but often it may affect people with no family history of the illness.

Persistent depression

Persistent depressive disorder, also called dysthymia (dis-THIE-me-uh), is a continuous long-term (chronic) form of depression. You may lose interest in normal daily activities,

Manic depression

Bipolar disorder is a serious brain disorder in which a person experiences extreme variances in thinking, mood, and behavior. Bipolar disorder is also sometimes called man-

ic-depressive illness or manic depression. Bipolar disorder often results in poor job performance, trouble in school, or damaged relationships. People who have very serious, untreated cases of bipolar disorder sometimes commit suicide.

Conclusion

Despite increased use of repetitive transcranial magnetic stimulation in psychiatry, the rates at which patients respond to the therapy and experience remission of often-disabling symptoms have been modest at best. Now, a team of psychiatrists and biomedical engineers applied an emerging functional neuroimaging technology, known as diffuse optical tomography (DOT), to better understand how rTMS works so they can begin to improve the brain stimulation procedure's effectiveness in treating depression.