

TMS for Treatment-Resistant Depression

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UNDERSTANDING DEPRESSION

Symptoms, Types of Depression, Diagnosis

- **Symptoms:** Core symptoms of depression include persistent sadness, loss of interest in previously enjoyed activities, changes in appetite or sleep patterns, and cognitive impairments such as indecision and fatigue, which may vary in intensity among individuals.
- **Types of Depression:** Depression manifests in various forms, including major depressive disorder, persistent depressive disorder, bipolar disorder, and seasonal affective disorder, necessitating differentiated diagnostic and therapeutic approaches for effective treatment.
- **Diagnosis:** Diagnosis of depression involves a thorough clinical assessment that may utilize standardized screening tools and clinical interviews to ascertain the presence, frequency, and duration of symptoms, facilitating accurate identification and subsequent treatment planning.



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INTRODUCTION TO TREATMENT-RESISTANT DEPRESSION

Definition, Prevalence, Impact on Life

- **Definition:** Treatment-resistant depression (TRD) refers to major depressive disorder that has not responded to two or more antidepressant treatments of adequate dosage and duration, indicating a chronic and complex condition that often requires innovative approaches.
- **Prevalence:** Approximately 30% of individuals diagnosed with major depressive disorder experience treatment-resistant depression, highlighting a significant public health challenge that necessitates effective, evidence-based interventions.
- **Impact on Life:** The ramifications of TRD extend beyond emotional distress, significantly impairing social functioning, occupational performance, and overall quality of life, contributing to a cycle of hopelessness for affected individuals.



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WHAT IS TREATMENT-RESISTANT DEPRESSION?

Definition, Criteria, Statistics



Definition

Treatment-resistant depression is defined as a major depressive episode that has not responded favorably to at least two different antidepressant therapies, marking an important distinction that indicates the complexity of the disorder.



Criteria

The criteria for diagnosing TRD often focus on specific thresholds of symptom persistence and resistance documented by healthcare providers, emphasizing the need for individualized and comprehensive treatment plans based on patient history.



Statistics

Research indicates that treatment-resistant depression affects an estimated 30% of individuals with major depressive disorder, resulting in increased healthcare costs and burdens on familial and societal levels due to prolonged illness.

TRADITIONAL TREATMENTS FOR DEPRESSION

Medications, Therapies, Limitations

- **Medications:** Antidepressants such as SSRIs, SNRIs, and atypical antidepressants are commonly used pharmacological interventions aimed at balancing neurotransmitters implicated in depressive disorders, yet may not be effective for all patients.
- **Therapies:** Psychotherapeutic approaches, including cognitive behavioral therapy (CBT) and interpersonal therapy (IPT), are essential adjuncts to medication that can help address cognitive patterns and relational issues contributing to depression.
- **Limitations:** Despite their widespread use, traditional treatments can have limitations such as delayed onset of effects, potential side effects, and a lack of efficacy in treatment-resistant cases, necessitating alternative strategies.



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INTRODUCTION TO TMS

Definition, How it Works, FDA Approval

- **Definition:** Transcranial Magnetic Stimulation (TMS) is a non-invasive neuromodulation technique that utilizes magnetic fields to stimulate nerve cells in the brain, primarily targeting areas involved in mood regulation, such as the prefrontal cortex.
- **How it Works:** The mechanism of TMS involves delivering brief magnetic pulses through the scalp, inducing electrical currents that can modify neuronal activity, potentially alleviating the symptoms of depression for individuals unresponsive to psychiatric medications.
- **FDA Approval:** In 2008, the U.S. Food and Drug Administration (FDA) granted approval to TMS as a treatment for major depressive disorder, affirming its efficacy and safety in clinical settings, leading to its growing acceptance among healthcare professionals.

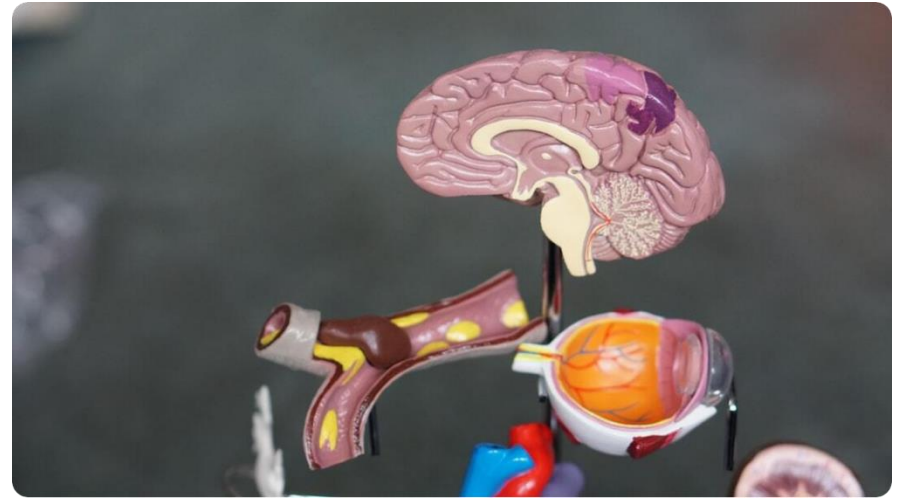


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MECHANISM OF ACTION OF TMS

Neurotransmitter Modulation, Brain Stimulation, Research Findings

- **Neurotransmitter Modulation:** TMS is thought to influence the functionality and concentrations of neurotransmitters, including serotonin, dopamine, and norepinephrine, thus contributing to mood improvement through enhanced neural connectivity.
- **Brain Stimulation:** Targeted stimulation of cortical areas using TMS can create modulations in neuronal excitability, fostering an environment conducive to therapeutic effects, particularly in mood regulation.
- **Research Findings:** Clinical studies have demonstrated that TMS can produce significant clinical benefits in patients with TRD, with some studies highlighting improvement rates as high as 50-60% in individuals undergoing treatment.



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BENEFITS OF TMS FOR TREATMENT-RESISTANT DEPRESSION

Efficacy, Safety, Non-Invasiveness



Efficacy

Evidence indicates that TMS achieves significant rates of response and remission in patients with treatment-resistant depression, allowing them to regain functionality and improve their quality of life.



Safety

TMS is associated with a favorable safety profile, with minimal side effects compared to pharmacological interventions, making it a viable option for individuals who may experience adverse reactions to traditional medications.



Non-Invasiveness

As a non-invasive procedure, TMS does not require anesthesia, allowing patients to remain awake and engage in their regular activities immediately after sessions, thereby enhancing treatment accessibility and adherence.

TMS TREATMENT PROCESS

Session Structure, Duration, Patient Experience



Session Structure

Typically, TMS sessions last about 30-40 minutes and are conducted several times per week over the course of several weeks, allowing for systematic brain stimulation targeting specific regions involved in mood regulation.



Duration

Treatment protocols may vary; however, patients often undergo a course of 36 sessions over 6 - 8 weeks, with ongoing evaluations determining the necessity for additional sessions based on individual progress.



Patient Experience

Patients generally report minimal discomfort during TMS sessions, describing a tapping sensation on the scalp, and many experience immediate improvements in mood, contributing positively to their overall treatment journey.

SIDE EFFECTS AND CONSIDERATIONS

Common Side Effects, Contraindications, Patient Selection



Common Side Effects

Overall, TMS is well tolerated; however, common side effects may include mild headaches, scalp discomfort, and transient facial muscle contractions, usually resolving quickly after treatment sessions.



Contraindications

Certain populations, including individuals with metal implants in the cranial or facial regions and those with a history of seizures, may not be suitable candidates for TMS, necessitating careful assessment prior to treatment initiation.



Patient Selection

Thorough screening and assessment are critical to identifying appropriate candidates for TMS, ensuring that those who may benefit most are prioritized while minimizing risks associated with treatment.

SUCCESS STORIES AND CASE STUDIES

Patient Testimonials, Clinical Outcomes, Research Evidence



Patient Testimonials

Many patients report transformative experiences with TMS, often citing significant reductions in depressive symptoms and an enhanced quality of life, showcasing the therapy's potential to foster genuine recovery.



Clinical Outcomes

Data from clinical studies illustrates a considerable percentage of patients achieving response or remission, with adherence to treatment protocols correlating with improved outcomes, supporting TMS's role in comprehensive treatment strategies.



Research Evidence

Emerging research continues to validate the efficacy of TMS, with studies demonstrating substantial improvements in depressive symptoms and cognitive function, reinforcing its position as an essential treatment modality for TRD.

FUTURE OF TMS AND DEPRESSION TREATMENT

Innovations, Research Directions, Potential Expansions

- **Innovations:** Advancements in technology are paving the way for enhanced TMS devices that may optimize treatment delivery, improve efficacy, and reduce session times, broadening accessibility for diverse patient populations.
- **Research Directions:** Ongoing research is focusing on refining treatment protocols, exploring adjunctive therapies, and investigating TMS's potential applicability in a broader range of psychiatric and neurological conditions beyond depression.
- **Potential Expansions:** As awareness of TMS grows, opportunities for integration into comprehensive mental health treatment programs and community health initiatives emerge, fostering broader access for individuals in underserved areas.

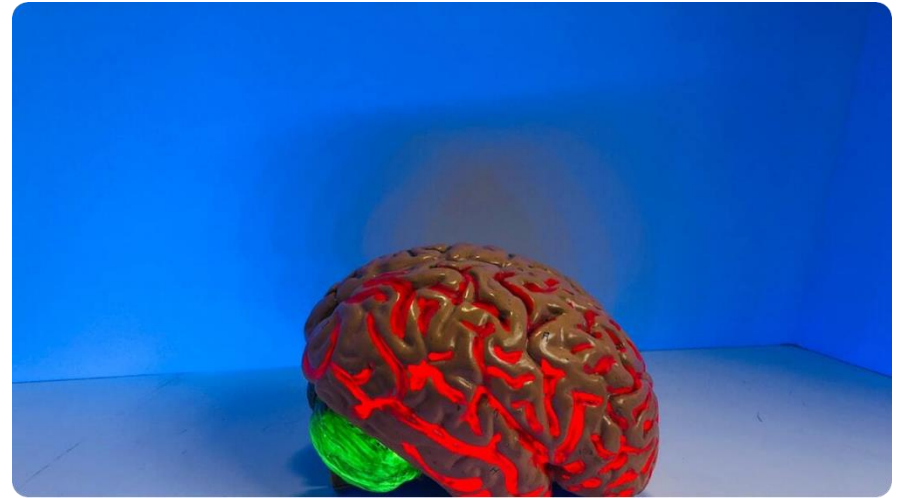


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ACCELERATED TREATMENT PROTOCOLS IN TMS



Introduction to Accelerated TMS Protocols

Accelerated TMS protocols aim to shorten the treatment duration while maintaining effectiveness, improving convenience for patients



Benefits of Accelerated Protocols

Accelerated protocols offer quicker relief for patients with treatment-resistant depression, potentially reducing the need for long-term therapy



Focus on SAINT Protocol

The Stanford Accelerated Intelligent Neuromodulation Therapy (SAINT) protocol is a novel approach designed to deliver rapid and sustainable improvement in depressive symptoms

STANFORD ACCELERATED INTELLIGENT NEUROMODULATION THERAPY (SAINT) PROTOCOL



Explanation of SAINT Protocol

SAINT protocol combines innovative technology and personalized treatment strategies to deliver rapid antidepressant effects through targeted brain stimulation



Research Findings

Studies on the SAINT protocol have shown promising results in achieving rapid and sustained improvement in depressive symptoms, with high response rates in patients



Comparison with Traditional TMS Protocols

SAINT protocol outperforms traditional TMS protocols in terms of speed and efficacy, offering a more efficient and effective treatment option for patients with treatment-resistant depression

CONCLUSION AND KEY TAKEAWAYS



Summary of TMS

TMS represents a viable and effective treatment modality for individuals with treatment-resistant depression, distinguished by its non-invasive nature and favorable safety profile, making it a key option in the therapeutic landscape.



Importance of Seeking Help

Encouraging individuals experiencing depressive symptoms to seek help promotes early intervention, which is critical for effectively managing mood disorders and improving quality of life.



Encouragement for Patients

The evolving landscape of treatment options offers hope and renewed resilience for individuals grappling with treatment-resistant depression, inspiring them to pursue effective therapeutic avenues like TMS.