

## Is this for real?

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# IMPACT PARAGRAPH

The impact of the thesis on the field is noteworthy due to its provision of valuable insights that hold practical implications for healthcare providers and clinicians. Therefore, I took the freedom to directly address clinicians and TMS practitioners here and provide them with hopefully useful suggestions and recommendation to consider in their clinical practice.

One of the recommendations for practice is that advanced placebo coil technology may be a useful tool in clinical trials to control for placebo effects. This technology can help researchers ensure that any treatment effects observed are genuinely due to the treatment itself and not just the placebo effect. However, clinicians should be aware of the potential for placebo effects in clinical practice and use them in a responsible and ethical manner. Additionally, it is crucial to acknowledge the power of placebo effects in clinical practice. Even if a treatment itself may not have a direct effect on a patient's condition, the placebo effect can still provide some benefit.

The thesis has also important more specific implications for the potential use of aiTBS as a smoking cessation treatment, given its findings. It suggests that aiTBS is a tolerable treatment option that could significantly impact smoking cessation outcomes. Therefore, healthcare providers should incorporate aiTBS into comprehensive smoking cessation programs, including other evidence-based interventions such as cognitive-behavioral therapy and medication-assisted treatment. Lastly, the thesis underscores the need for further research and refinement of non-invasive brain stimulation techniques for smoking cessation.

Furthermore, this thesis contributes to the ongoing discussion of treatment options for patients with treatment-resistant depression. The retrospective naturalistic study provides valuable insights into the efficacy of ketamine and rTMS and highlights the need for individualized treatment plans based on patient characteristics and preferences. As both ketamine and rTMS are potential therapies for individuals with treatment-resistant depression, healthcare providers must evaluate the unique needs and preferences of each patient to determine the most suitable treatment option. Ketamine may be more appropriate for patients requiring a faster response, while rTMS may be preferable for patients who cannot tolerate the side effects of ketamine. Although both therapies may be effective in reducing symptoms of treatment-resistant depression, the findings suggest that further research is necessary to determine the optimal treatment strategy for each patient. The study emphasizes the importance of continuing research in the field of neuromodulation as a potential alternative for patients with treatment-resistant depression.

In the treatment of frontal lobe epilepsy, clinicians should consider targeting the bilateral orbitofrontal cortex during rTMS. The results of the case report suggest that this area of the brain may be an effective target for reducing seizure frequency. However, it is important for clinicians to carefully monitor the safety and tolerability of rTMS in patients with epilepsy, as there is a risk of inducing seizures. When deciding on a treatment plan for epilepsy, clinicians

should weigh the potential benefits and risks of rTMS. While it may be effective for some patients, it may not be appropriate or effective for all patients. Therefore, clinicians should consider the individual needs and preferences of each patient when recommending a treatment plan for epilepsy.

For the management of PD, HF-rTMS has the potential to ameliorate depressive symptoms and enhance the quality of life of certain patients. Therefore, healthcare providers should contemplate this technique as a viable treatment option. Furthermore, the primary motor cortex could be a suitable brain region for targeting, and thus clinicians should take this into account when administering rTMS to individuals with PD.

Finally, clinicians should be aware of the potential risks associated with TMS. While TMS is generally considered safe, there is a risk of seizures, particularly in patients with a history of epilepsy or other seizure disorders. Therefore, clinicians should carefully screen patients for any history of seizures or other risk factors before recommending TMS. Another important implication is that clinicians should closely monitor patients during TMS sessions to identify any adverse effects or complications, such as seizures. Patients undergoing TMS should be monitored by trained personnel who are equipped to respond to any adverse events. This is crucial to ensure patient safety and minimize the risks associated with TMS treatment. Additionally, patients undergoing TMS should be fully informed of the potential risks associated with the treatment. Informed consent should be obtained before starting TMS treatment, and patients should be given a thorough explanation of the potential risks and benefits of the treatment. This will help patients make an informed decision about whether or not to undergo TMS treatment. Finally, health care providers should consider the potential risks and benefits of TMS when deciding on a treatment plan. While TMS can be an effective treatment for several neuropsychiatric disorders, it may not be appropriate for all patients. Clinicians should carefully consider the individual needs and preferences of each patient when recommending a treatment plan. They should weigh the potential risks and benefits of TMS against other treatment options and recommend the most appropriate treatment plan for each patient.

Overall, this thesis presents a comprehensive review of the use of rTMS in several neuropsychiatric disorders such as depression, smoking cessation, frontal lobe epilepsy, and Parkinson's disease. The findings from the studies presented in this thesis carry significant practical implications for healthcare providers.