

Online CME-Certified Survey Shows Differential Awareness of Neuromodulatory Devices for Treatment-Resistant Depression Among Psychiatrists

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BACKGROUND

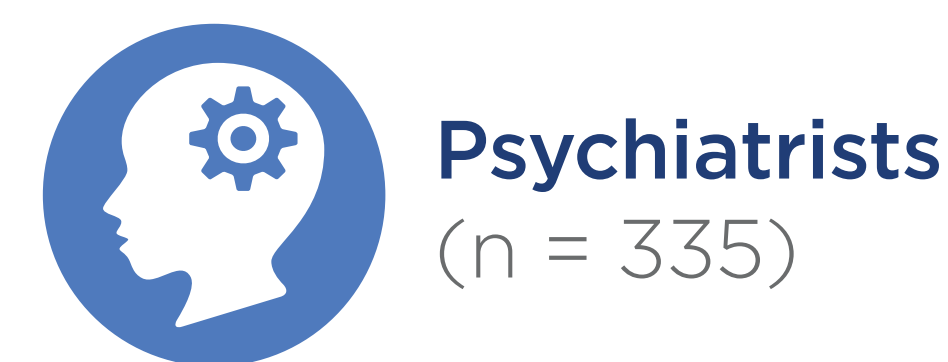
Treatment-resistant depression (TRD) is a challenge for clinicians to manage due to differing definitions of the condition and multiple therapeutic approaches for which guidelines do not exist to support evidence-based care.¹ Despite evidence showing that neuromodulation may be efficacious for the management of TRD, there is also evidence that this approach is underutilized.^{2,3} There is need to develop educational programming through which more detail is uncovered as to the specific practice gaps in the use of neuromodulation for the management of TRD. The goal of this study was to gain insight into the gaps in confidence, knowledge, and competence regarding the clinical identification and use of neuromodulation for the management of TRD.



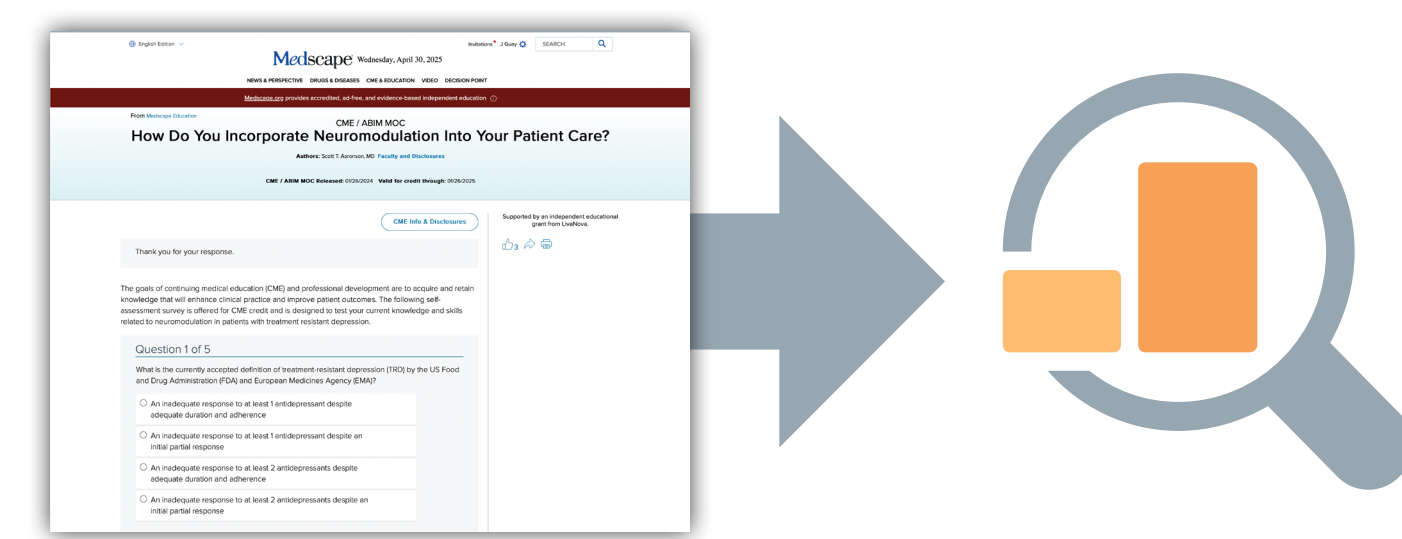
METHODS

A 26-question multiple-choice survey was administered to determine baseline approaches to clinical practice relating to the recognition and use of neuromodulation management of TRD, including outcomes from clinical trials:

- The survey questions measured knowledge, skills, attitudes, and competence of psychiatrists
- The survey, housed on Medscape Education, was made available to healthcare providers without monetary compensation or charge⁴
- The survey launched as a continuing medical education (CME)-certified activity on January 26, 2024 with data collected through April 15, 2024
- Confidentiality was maintained and responses were de-identified and aggregated prior to analyses



Psychiatrists
(n = 335)



ACKNOWLEDGEMENTS

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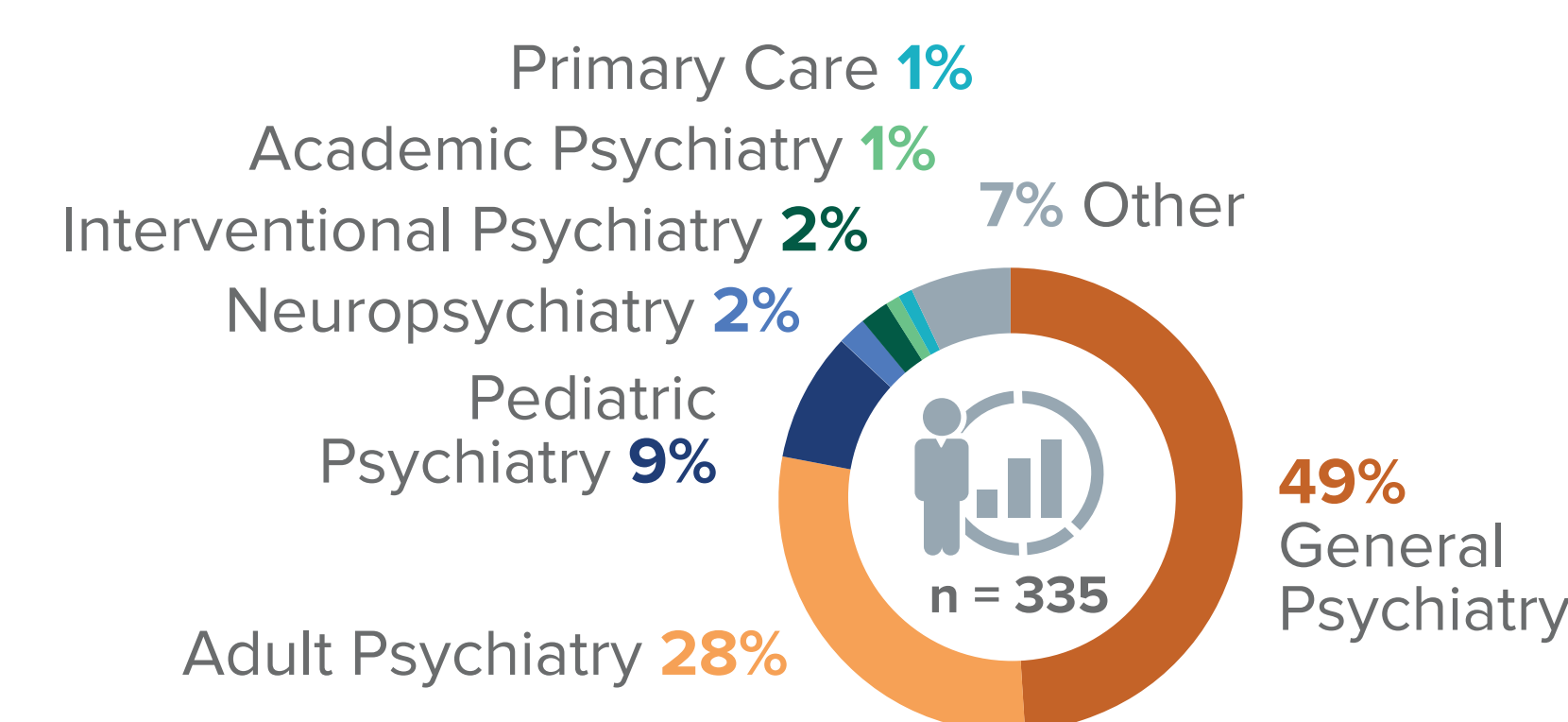
REFERENCES

- Voineskos D, Daskalakis ZJ, Blumberger DM. Management of Treatment-Resistant Depression: Challenges and Strategies. Neuropsychiatr Dis Treat. 2020;16:221-234.
- Bewernick B, Schlaepfer TE. Update on Neuromodulation for Treatment-Resistant Depression. F1000Res. 2015 Dec 2;4:F1000 Faculty Rev-1389.
- Cabrera LY, Gilbert MMC, Achtyes ED, McCright AM, Bluhm R. Jumping through the hoops: Barriers and other ethical concerns regarding the use of psychiatric electroceutical interventions. Psychiatry Res. 2022;313:114612.
- Aaronson ST. How do you incorporate neuromodulation into your patient care? Medscape Education. Accessed March 6, 2025. <https://www.medscape.org/viewarticle/how-do-you-incorporate-neuromodulation-your-patient-care-2023a1000x57/1>

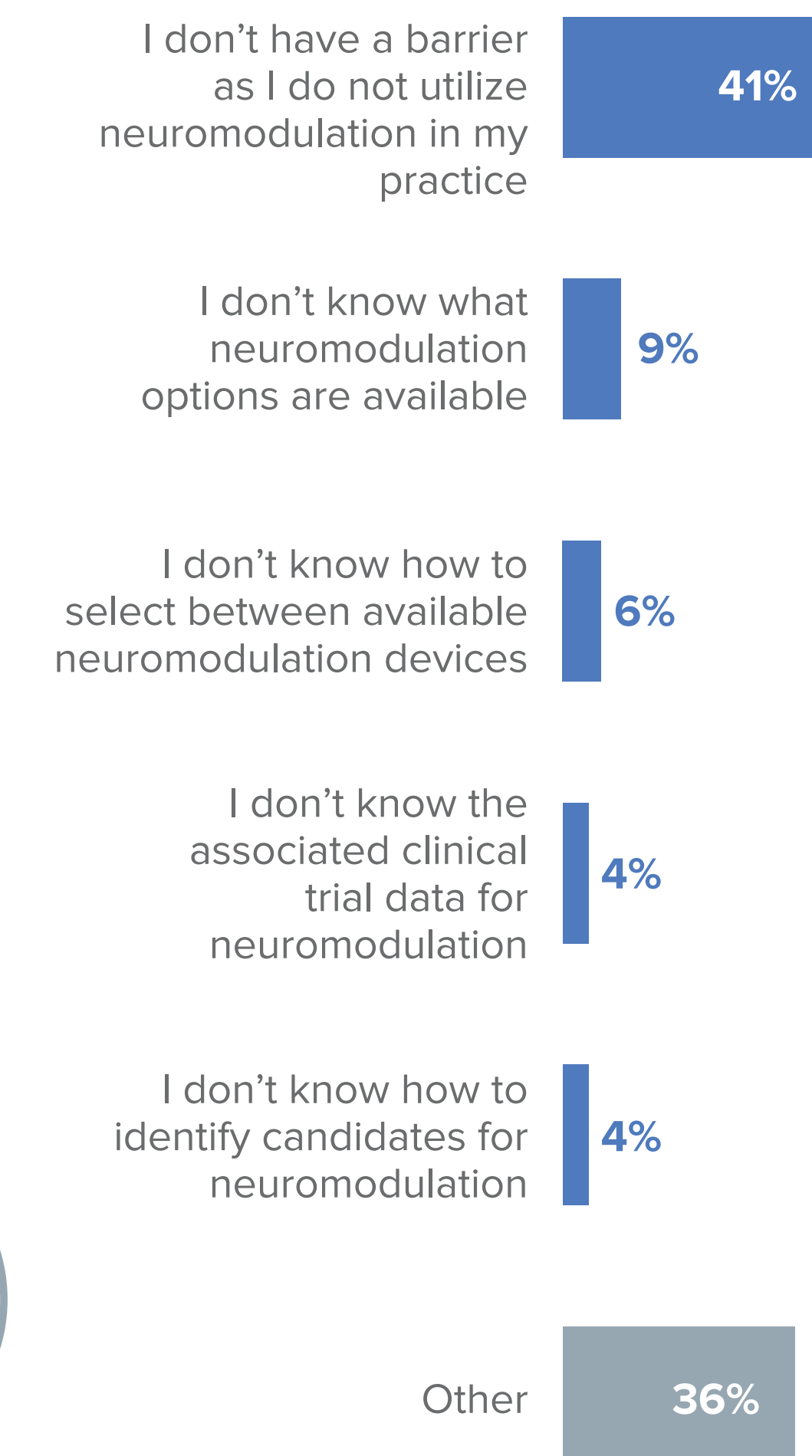
RESULTS

Demographics

What best describes your practice type?

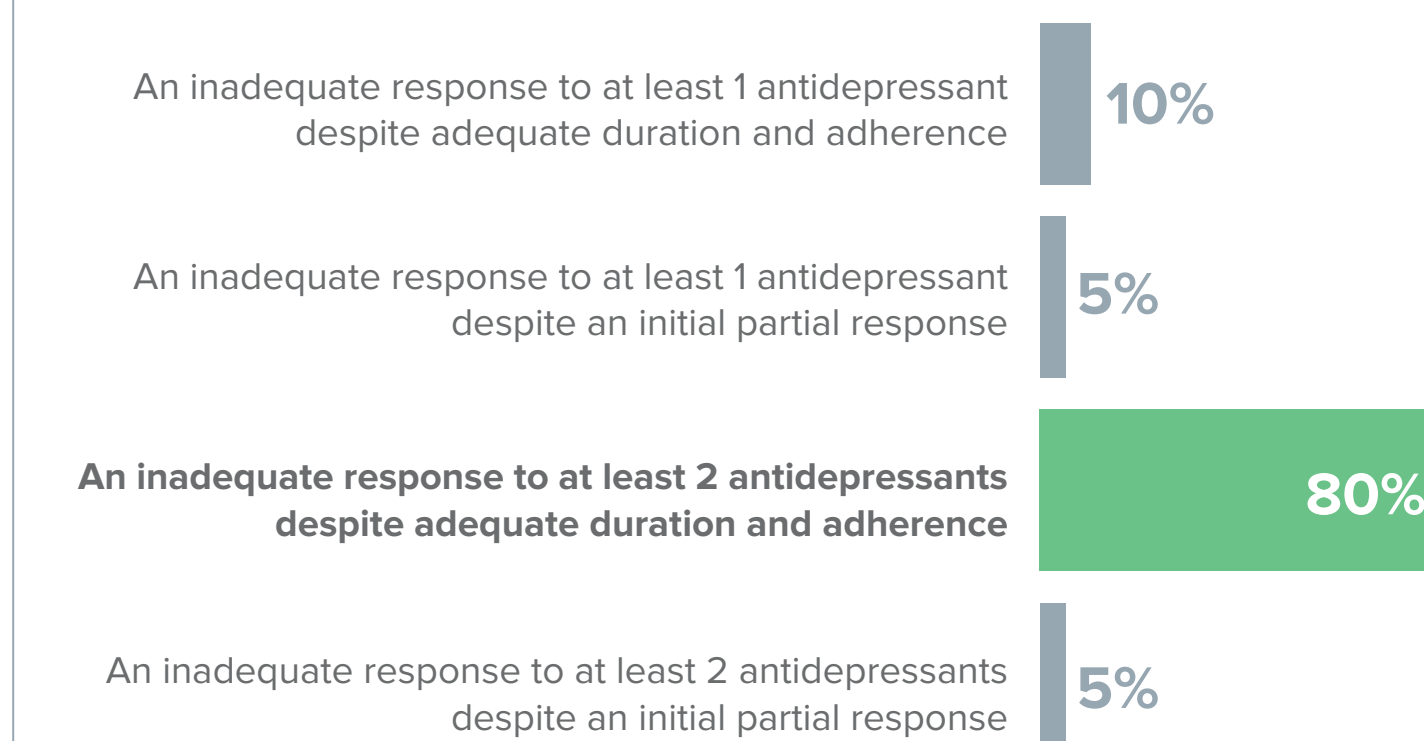


Which of the following represents your biggest barrier to using neuromodulation for the management of TRD?



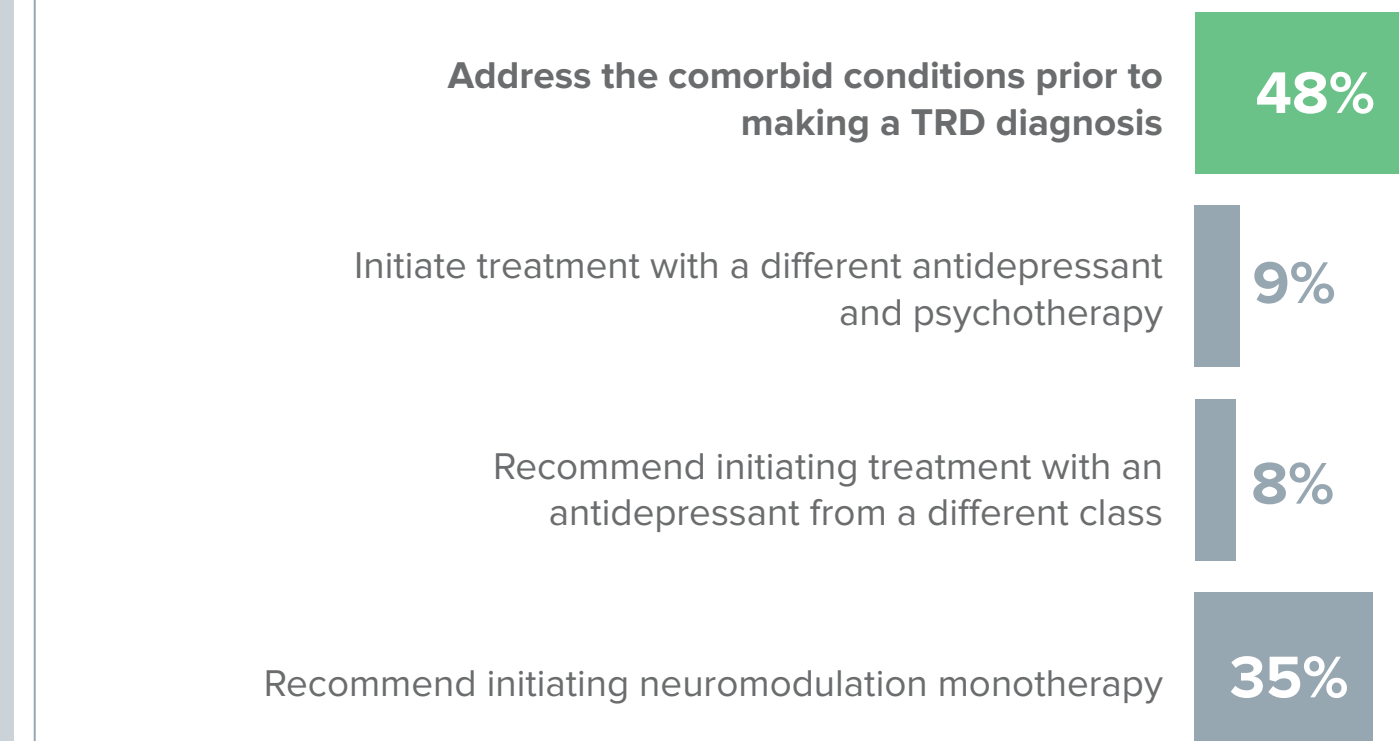
DEFINING TREATMENT-RESISTANT DEPRESSION (TRD)

What is the currently accepted definition of treatment-resistant depression (TRD) by the US Food and Drug Administration (FDA) and European Medicines Agency (EMA)?



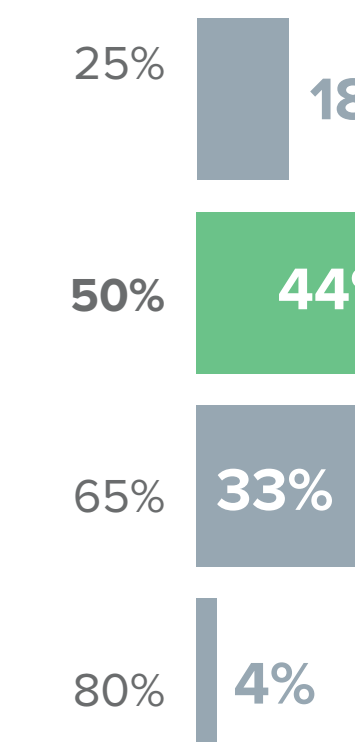
CONSIDERATIONS FOR IDENTIFYING TRD

You are seeing a patient with depression who has concomitant substance use disorder (SUD), generalized anxiety disorder (GAD), and type 2 diabetes due to morbid obesity. The patient has not responded to 3 previous antidepressant treatments from 2 different classes, which were given for an adequate amount of time with an adequate dose. What might be the next best step to help this patient?

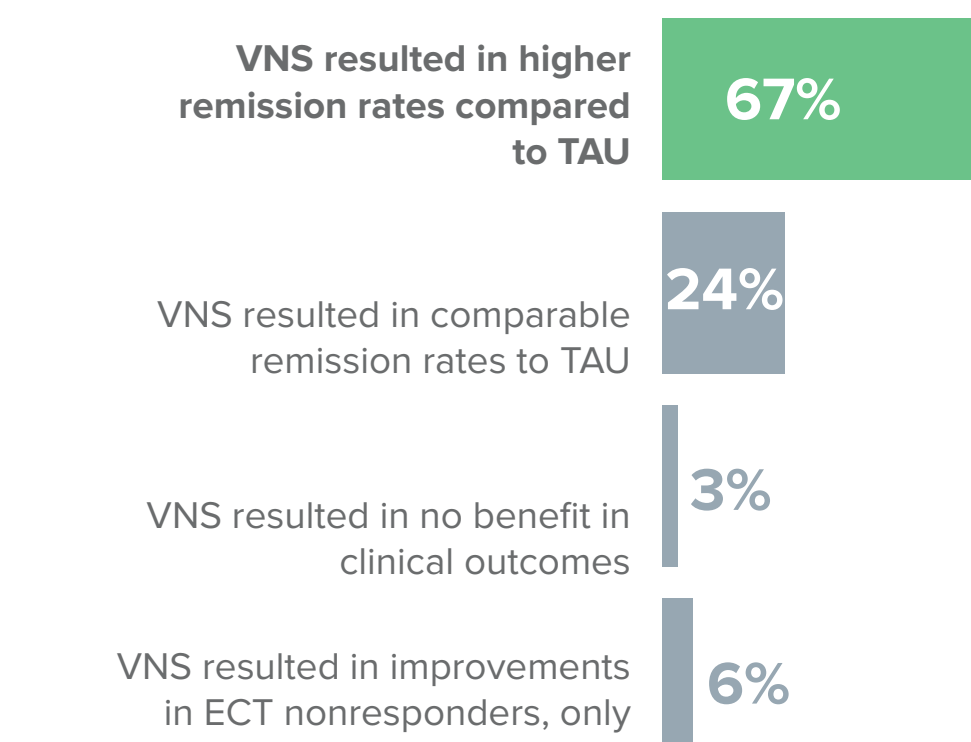


KNOWLEDGE OF CLINICAL DATA PERTAINING TO TRD

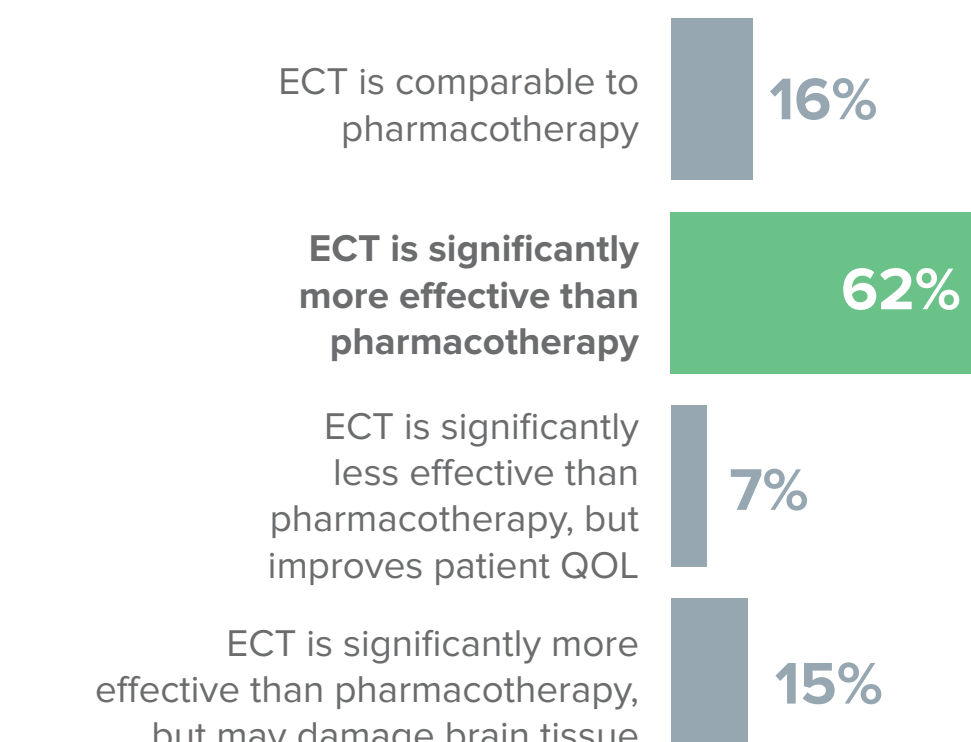
According to the STAR*D study, approximately what percent of patients with depression will achieve depression remission after 2 carefully chosen and monitored antidepressant treatment attempts?



What was the main outcome of a 5-year, prospective, open-label, non-randomized observational registry trial that included 795 patients with moderate to severe TRD who received adjunctive vagus nerve stimulation (VNS) treatment, compared with patients who received treatment as usual (TAU)?

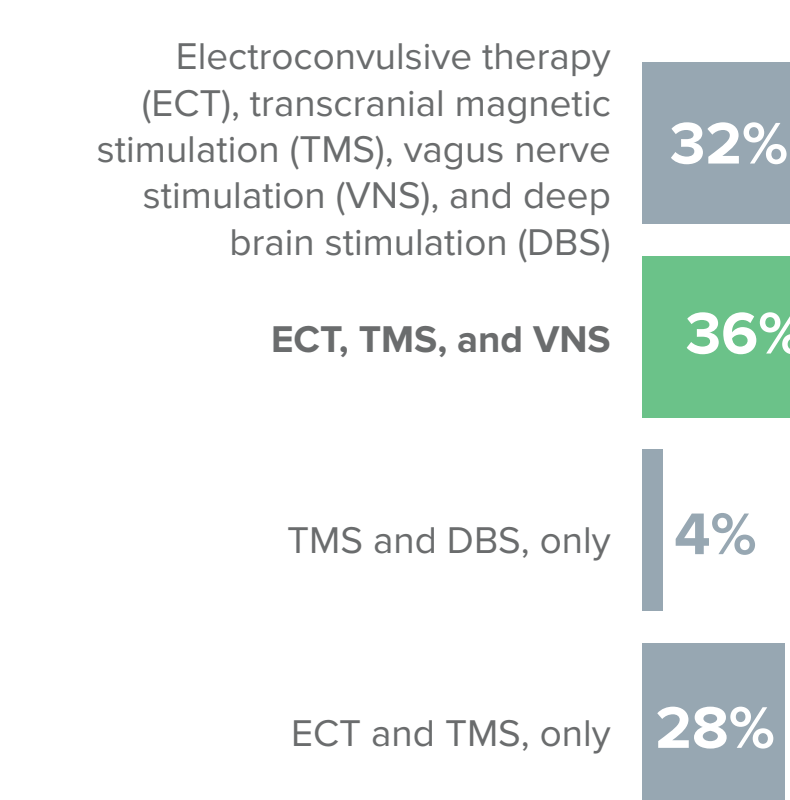


According to the literature and meta-analyses of randomized clinical trials, how does treatment with electroconvulsive therapy (ECT) compare with pharmacological therapies in patients with TRD?

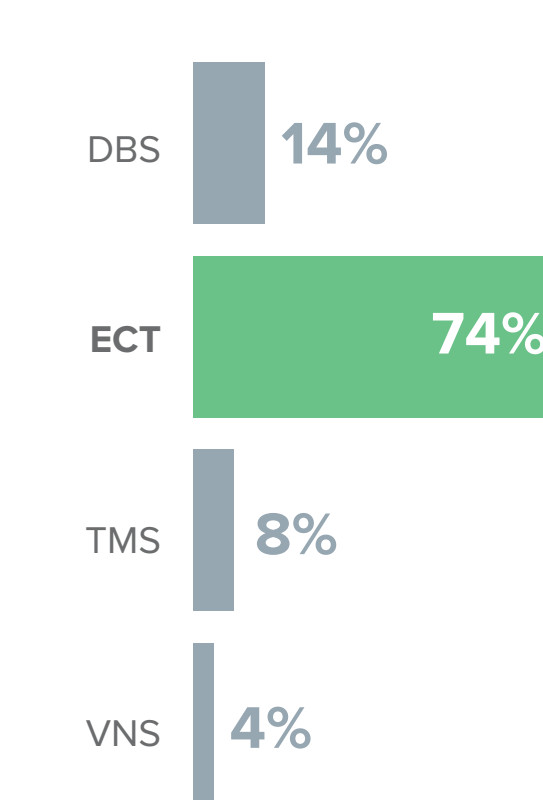


GENERAL KNOWLEDGE OF NEUROMODULATION DEVICES USED TO TREATMENT TRD

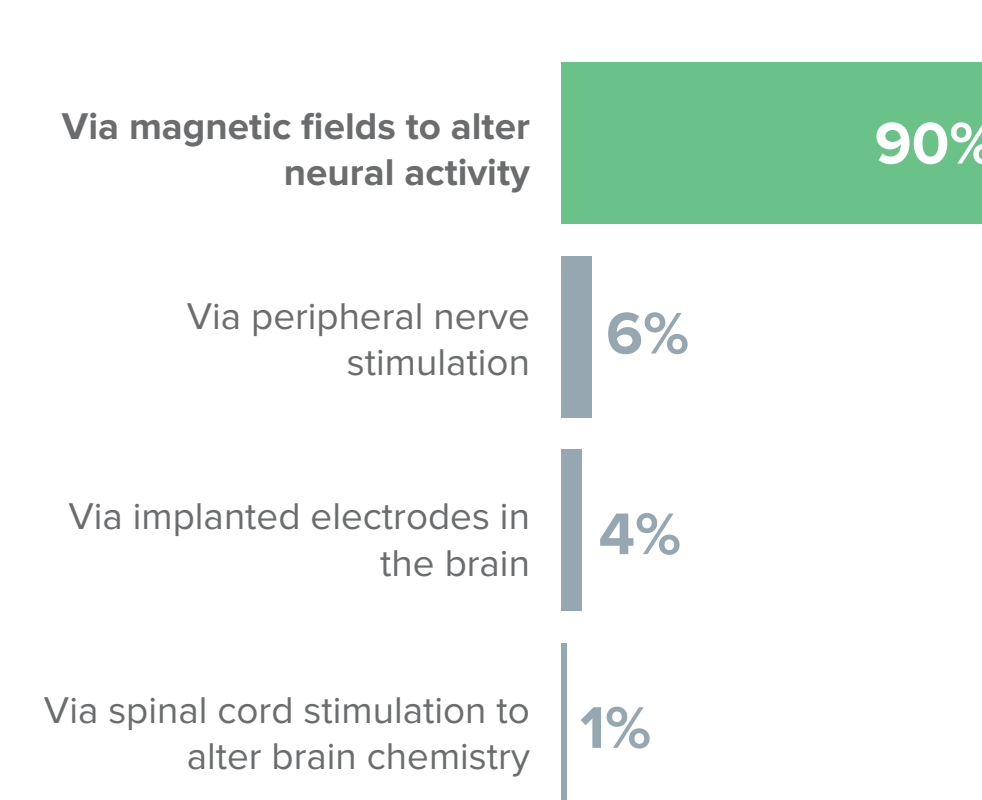
What are the currently FDA-approved methods of neurostimulation for patients with TRD?



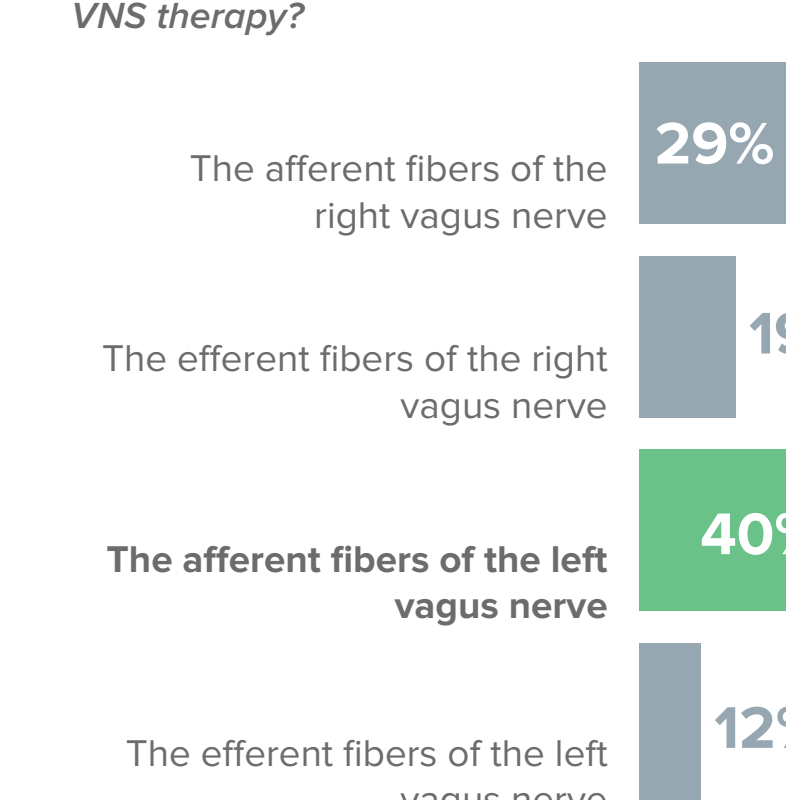
Which type of neuromodulation is administered under general anesthesia and uses small electric currents passed through the brain?



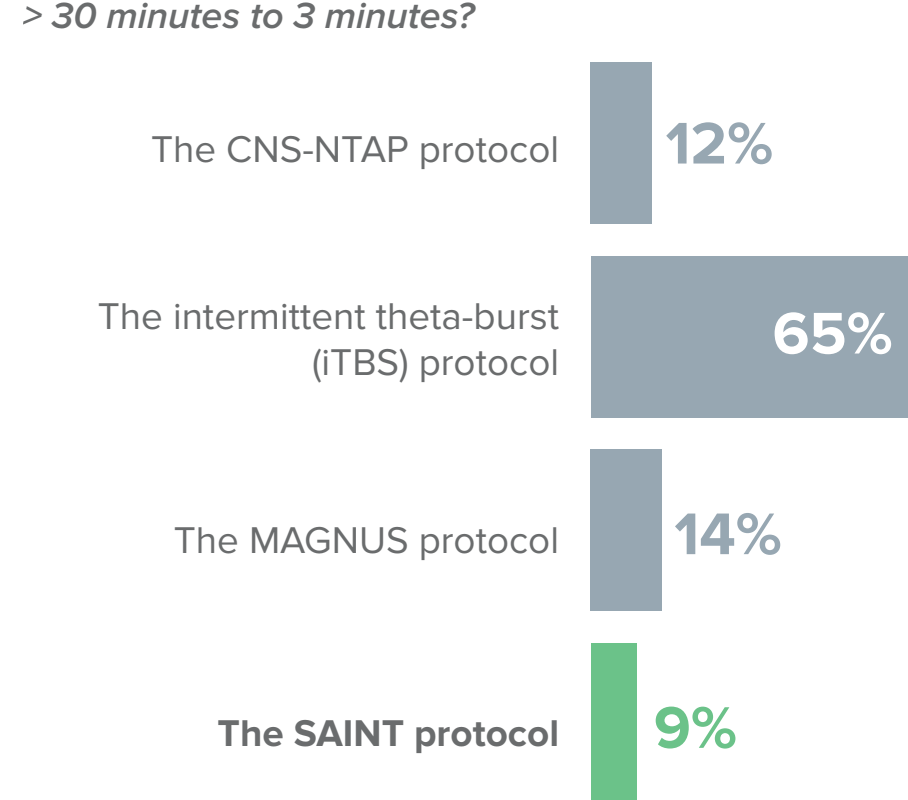
What is the mechanism of action of TMS in patients with TRD?



Which parts of the vagus nerve need to be stimulated to elicit an antidepressant effect for patients with TRD who are receiving VNS therapy?

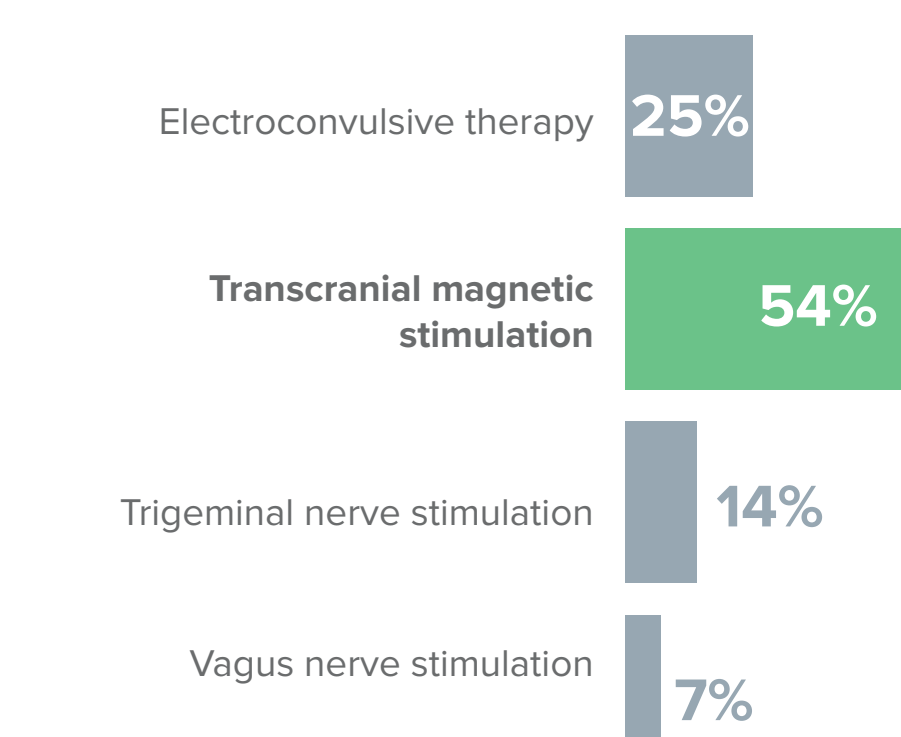


Which TMS protocol was recently cleared by the FDA for the treatment of TRD, and reduces the treatment session time from > 30 minutes to 3 minutes?

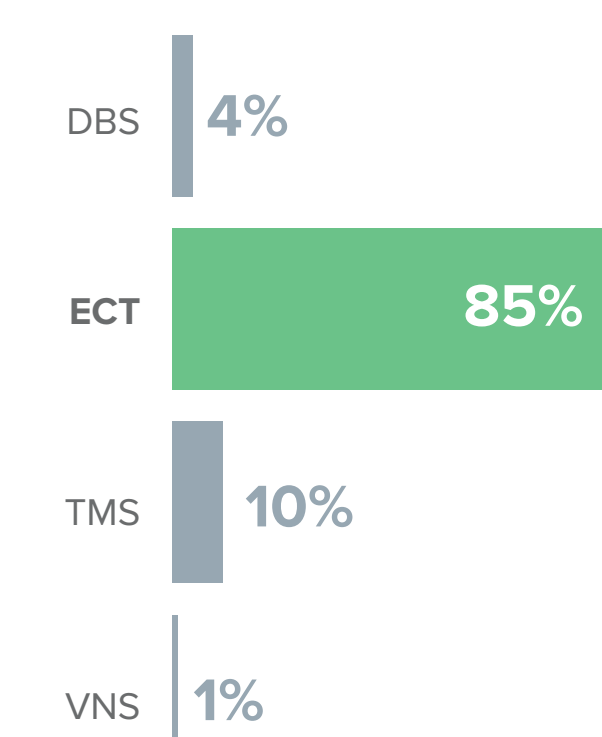


KNOWLEDGE AND COMPETENCE IN THE INDIVIDUALIZED SELECTION OF NEUROMODULATION DEVICES FOR TRD

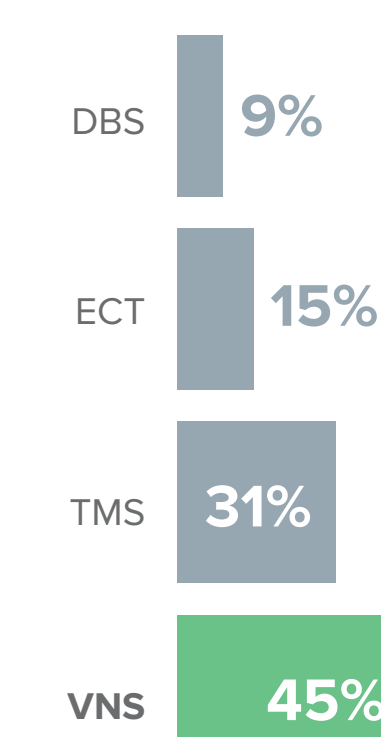
You are seeing a middle-aged male patient with TRD whose depression has not responded to 4 adequate antidepressant trials. He is not currently experiencing suicidal ideation. He is hearing-impaired and has a cochlear implant. Which form of neuromodulation might be contraindicated for this patient?



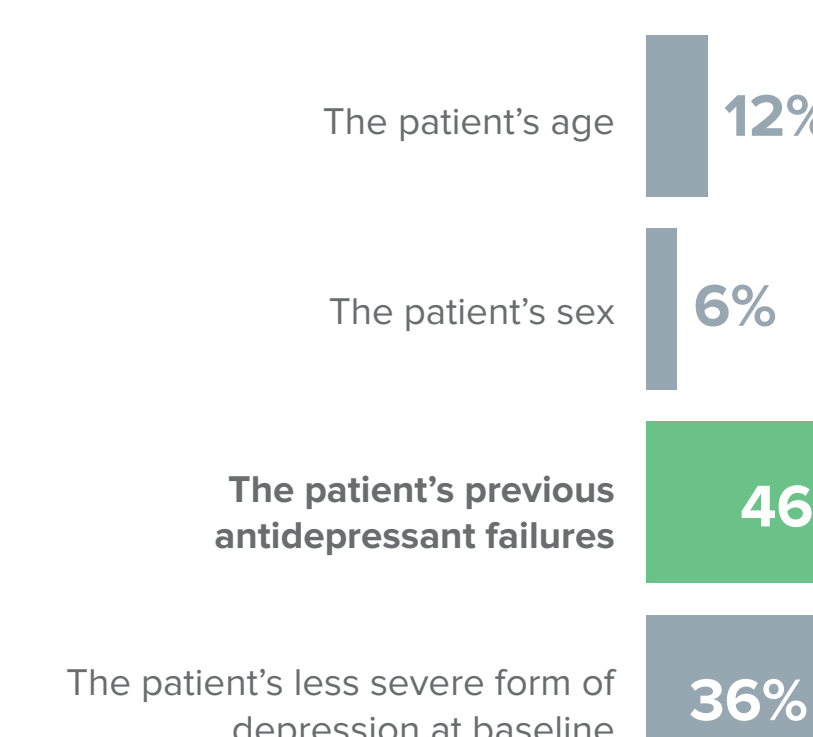
Which type of neuromodulation is effective for treating patients with TRD with a high risk of suicide?



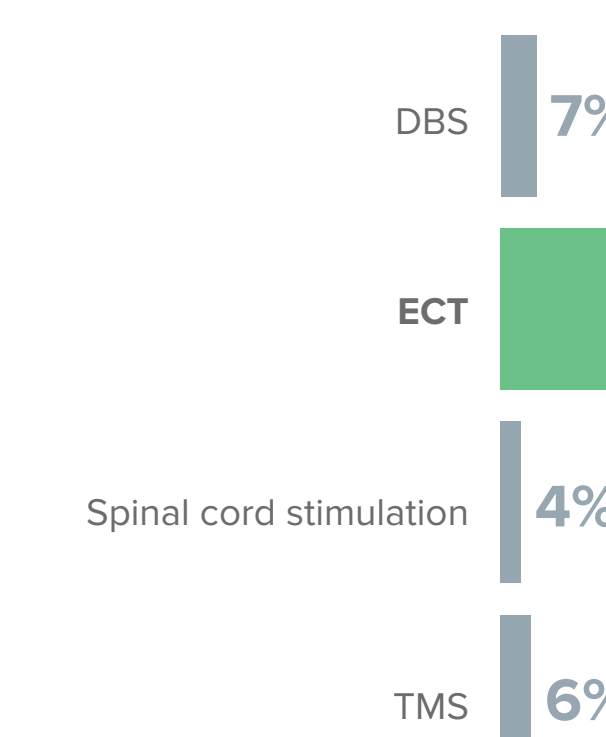
Which FDA-approved neuromodulation modality may be the best option for long-term treatment of TRD and provides continuous treatment with minimal need for office visits and time away from work?



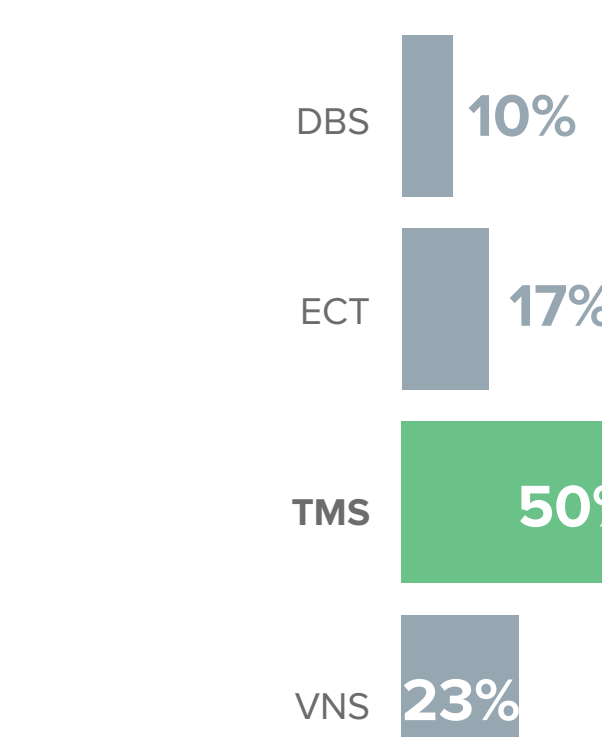
You are seeing a 42-year-old male patient with TRD whom you are considering for TMS treatment. Recent testing indicates that the patient has moderate depression, and the patient has not responded to treatment with 8 previous pharmacological treatments. What factor might have an impact on TMS efficacy for this patient?



Which type of neurostimulation might be the best option for a patient with TRD who is experiencing psychosis?



Which type of neuromodulation might be the best option for a patient with moderate to marked depression, who has not responded to more than 2 previous antidepressant treatments, and has comorbid GAD?



CONCLUSIONS

This educational research provided insights into the extent of psychiatrists knowledge and competence as it relates to the identification of, clinical trial data pertaining to, and the selection of neuromodulation devices for the management of TRD

Psychiatrists demonstrated a wide range of awareness of TRD and the use of neuromodulation devices for the management of TRD. The topics associated with the greatest pre-existing knowledge or competence (> 60% chose the correct answer) include:

- How regulatory agencies define TRD as assessed in clinical trials
- Clinical trial data and clinical scenarios for which ECTs may be effective in the setting of TRD
- Long –term clinical trial data on VNS studied in patients with TRD
- The potential therapeutic mechanism of action of TMS in TRD

There were other questions where psychiatrists demonstrated less familiarity (< 60% selected the correct answer) and should serve as the rationale for additional educational programming:

- Identification of patients with TRD who may benefit from TMS or VNS
- Recently updated clinical protocol for the administration of TMS for the management of TRD
- The anatomical localization within the vagus nerve that is specifically stimulated to elicit an antidepressant effect
- Risk factors for TRD and the impact of patient comorbidities on antidepressant medication response

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