4-week follow-up. They completed structural and functional brain MRI, neuropsychiatric evaluations, and neuropsychological assessments before and after treatment and were administered a subset of these measures at 4-week follow-up. MoCA scores were used to monitor for adverse neurocognitive effects, and the fluid cognition composite score from the NIH Toolbox Cognition Battery was used to test preliminary efficacy.
Results: We achieved a high retention rate (95%), with 21 of the 22 participants completing all study procedures. There were no clinically significant adverse neuroradiological, neuropsychiatric, or neurocognitive effects of treatment. Participant reports indicated high tolerability and acceptability, with a modal rating of 0 (on a scale from 0=not at all to 10=extremely) for six common side effects (i.e., headache, pain, scalp irritation, facial twitching, fatigue, fear/anxiety), assessed both during and after each treatment session. They reported very low desire to quit despite some participants rating the treatment as moderately tiring. We observed significant, large effect-size (d = 0.98) improvements in fluid cognition from pre- to post-treatment.
Conclusions: Our findings support the safety, feasibility, and acceptability of iTBS-rTMS treatment in patients with aMCI. Further, although not explicitly dosed for efficacy, we provide preliminary evidence of improved fluid cognition as a function of treatment, highlighting the potential of this treatment for improving trans-domain cognitive impairment. These promising results can directly inform future trials aimed at optimizing treatment parameters, broadening the indication to other MCI subtypes, and testing the augmentation of established cognitive rehabilitation interventions when combined with rTMS.

Categories: Neurostimulation/Neuromodulation
Keyword 1: neuromodulation
Keyword 2: mild cognitive impairment
Keyword 3: treatment outcome
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75 Mood and Quality of Life after Responsive Neurostimulation (RNS) in Epilepsy Patients

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Objective: Poor mood and quality of life is common among patients with medically intractable seizures. Many of these patients are not candidates for seizure focus resection and continue to receive standard medical care. Responsive neurostimulation (RNS) has been an effective approach to reduce seizure frequency for nonsurgical candidates. Previous research using RNS clinical trial participants has demonstrated improved mood and quality of life when patients received RNS-implantation earlier in their medically resistant epilepsy work-up (Loring et al., 2021). We aimed to describe the level of depression and quality of life in adults with medical resistant epilepsy, treated with RNS, presenting to an outpatient clinic.
Participants and Methods: This pilot study was conducted among 11 adult epilepsy patients treated with RNS at the epilepsy specialty clinic at Baylor College of Medicine. Ages of participants ranged from 18-56 (M=32.01, SD=12.37) with a mean education of 12.43 (SD=0.85). The majority of the participants identified as White (White=72.2%; Hispanic/Latino/a=14.3%, Other=7.1%). We also present pre- and post-RNS preliminary results of a subset of 4 patients for whom pre and post implantation data was available. Depression symptoms were assessed through the Beck Depression Inventory, 2nd Edition (BDI-II) and quality of life was determined using the Quality of Life in Epilepsy (QoLiE-31).
Results: Patients reported minimal symptoms of depression (M=5.45, SD=4.03) and good overall quality of life (M=71.18, SD=14.83) after RNS. Participants' scores on their overall quality of life ranged from 50 to 95 (100=better quality of life). The QoLiE-31 showed high scores on emotional wellbeing (M=69.45, SD=14.56) and cognitive functioning (M=65.36, SD=16.66) domains. Post-hoc analysis revealed a significant difference in the cognitive functioning domain of QoLiE-31 before (M=44.75, SD=12.58) and after (M=51.0, SD=11.58) RNS implantation(t(3)=-3.78, p=0.016. Additionally, overall QoLiE score approached statistical significance when comparing pre-RNS (M=44.75 SD=9.29) to post-

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RNS (M=49.75 SD=11.62; t(3)=-2.01, p = 0.069). No significant differences were evident on seizure worry, energy/fatigue, medication effects, and social functioning domains of QoLiE-31 before and after RNS treatment. **Conclusions:** These pilot study results suggest low levels of depression with this population post-RNS implantation. Additionally, there is preliminary evidence to suggest improved patient-rated cognitive functioning and overall quality of life. While this is a small study population, the results have important implications for patients with intractable epilepsy, even with those form who surgical resection may not be possible. Future studies with large enough samples to examine moderating and mediating factors to mood and quality of life changes post-RNS will be important.

Categories: Neurostimulation/Neuromodulation
Keyword 1: neurostimulation
Keyword 2: epilepsy / seizure disorders - surgical treatment
Keyword 3: mood disorders
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76 More Than One Way to Skin a Cortex: A Meta-Analysis Comparing Neuroimaging and Personality Testing

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Objective: Neuroimaging is commonly used in medicine to identify neuropathology and is widely considered to be a reliable and valid diagnostic modality. Personality testing is commonly used to identify psychopathology but is generally perceived to have less clinical efficacy than neuroimaging. The purpose of the current study was to compare the clinical efficacy of personality tests to neuroimaging using meta-analysis.

Participants and Methods: Multiple databases were searched for original research utilizing either personality tests or neuroimaging. The search interval covered articles published within the last 10 years. Studies were selected based on the criteria of having a clinical group and a healthy control sample with a reported diagnostic outcome. For this meta-analysis, neuroimaging studies focusing on diagnostic utility for Alzheimer's dementia were included. Personality testing studies were included if they broadly reported a clinical outcome, due to fewer studies in this area. Studies were coded using a complex multi-comparison, outcome, and subgroup schema, and were analyzed under random-effects modeling.

Results: Out of the 240 studies identified for the personality domain, 13 were selected for the meta-analysis. Out of 6522 studies identified for the neuroimaging domain, 21 studies were selected for the meta-analysis. Results indicated a significant difference between the neuroimaging and personality testing effect sizes. Specifically, neuroimaging [Hedge's g = -1.623, 95% CI = -1.973 to -1.273, p<.001] yielded a greater effect size in comparison to the personality tests effect size [Hedge's g = -0.658, 95% CI = -0.751 to -0.565, p<.001]. The effect size for clinical utility of neuroimaging was close to double that of the effect for personality tests diagnostic utility.

Conclusions: Findings from this meta-analysis showed a significant difference in the effect sizes obtained from neuroimaging studies compared to the studies of personality tests. While both neuroimaging and personality testing demonstrated meaningful clinical utility, neuroimaging studied had a larger effect size.

Categories: Other
Keyword 1: personality
Keyword 2: neuroimaging: functional
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77 Comparing the Performance of Videoconference and In-Person Neuropsychological Test Administration

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