the association between degree of mood improvement and degree of improvement in executive function. SPSS v 24 was used for all analyses. RESULTS/ANTICIPATED RESULTS: We examined 11 subjects. Primary outcomes: Patients showed a significant decrease in scores on the Montgomery Asberg Depression Rating Scale (MADRS) from baseline Mean (M) = 27.73, Standard Deviation (SD) 8.2 to the end of 4 weeks of iTBS: M = 15.91, SD = 10.05, t = 7.4, p < .001. The Flanker Inhibitory Control and attention test significantly improved from baseline M = 91.0, SD = 7 to the end of iTBS M = 98.7, SD = 12.8, t = −2.9, p = .014 (higher scores at week 4 denote improvement). The List Sorting Working Memory test and the Dimensional Change Card sort a measure of cognitive flexibility improved but did not reach statistical significance. The self reported executive measure improved from baseline M = 48.6, SD = 9.4 to post iTBS M = 39.4, SD = 8.5, t = 3.8, p = .003 (lower scores at week 4 denote improvement). We also examined whether the degree of improvement in depression related to the degree of improvement in executive function. We found positive correlations between change in mood scores with iTBS with change in executive scores with iTBS, with a strong relationship with working memory r = 0.34. Tolerability and Side effects: Common side effects were twitching in facial muscles during the stimulation (n =11), headaches (n =10) and pain or discomfort at the stimulation site and face (n =4). One participant withdrew due to intolerance to the stimulation. DISCUSSION/SIGNIFICANCE OF IMPACT: The iTBS paradigm was effective in improving mood and executive function in older adults. Both the psychometric measure and the self reported executive function measure (indicative of dysexecutive behavior) reflected improvements post iTBS. Improvement in executive function was correlated with depression improvement. We targeted the Dorso Lateral Prefrontal cortex, which exhibits decreased connectivity with the dorsal anterior cingulate in depressed elderly and is a key in orchestration of executive function. Our findings are consistent with the conceptualization of depression as a circuit level disorder affecting interconnected networks involving mood and cognition. Although we demonstrated potential therapeutic effects, the mechanism of action of iTBS remains unknown. We are presently conducting a randomized controlled trial to examine the effects of iTBS on brain connectivity using functional MRI. Results of this study underway will hopefully demonstrate engagement of the TMS target and contribute to a neurocircuitry based approach treatment of geriatric depression.

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Maximizing the Value of Your Trial Innovation Network Hub Liaison Team

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OBJECTIVES/SPECIFIC AIMS: The University of Washington (UW) CTSA Hub Liaison Team has directed and facilitated work required to bring TIN multisite trials to the CTSA hub and its affiliates by: (1) Connecting hub and affiliate investigators with the services offered by the Trial and Recruitment Innovation Centers, (2) identifying investigators at academic and non-academic institutions to act as co-investigators on multisite trials, (3) supporting the local and affiliate human research protection programs and investigators throughout the life-cycle of the study, (4) maximizing CTSA and local study team resources to develop and monitor study-specific volunteer recruitment and retention plans. The UW CTSA TIN Hub Liaison Team has worked to achieve these objectives via the following methods designed for generalization and dissemination. METHODS/STUDY POPULATION: (1) Providing consultations to investigators interested in the services offered by the Trial and Recruitment Innovation Centers. (2) Hub and affiliate investigators at academic and non-academic institutions are identified by a variety of approaches, including the engagement of existing CTSA hub regional collaboration networks, utilizing EHR data from CTSA developed phenotypes and targeted "Investigator Engagement Packets". (3) Ensuring regulatory oversight and compliance is challenging in the new age of single IRB review. Establishing a flexible reliance office, engaging with the central TIN IRBs and providing guidance and resources to local study teams ensures investigator confidence in the integrity of the protocol approval and study activity processes. (4) The CTSA Hub Liaison team has developed a Recruitment and Retention Plan template and holds recruitment and retention planning meetings with the CTSA study teams engaging in TIN studies. RESULTS/ANTICIPATED RESULTS: It is anticipated that The Hub Liaison Team: (1) Will contribute to the TIN's process improvement to bring regionally appropriate studies to the CTSA hub and affiliates. (2) Identify ideal investigators to engage both in proposal submission and co-investigating multisite trials. (3) Collect, compare and improve regulatory and contract approval cycle times. (4) Monitor and support screening, accrual and retention of study volunteers. DISCUSSION/SIGNIFICANCE OF IMPACT: Due to low prevalence of disease, challenges related to identifying and randomizing study volunteers and urgency to address clinical and public health issues, multisite study design is an essential option for NCATS. The Trial Innovation Network is an exciting approach to leverage local and national resources to provide infrastructure to improve multisite clinical and observational trial conduct. The University of Washington CTSA hub has developed and piloted methods to achieve the mission of the TIN, by recruiting investigators and realizing trial objectives, with the hope that these methods could be utilized by other CTSA TIN Hub Liaison Teams.

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Measuring Fluid Compartments Before and After Rapid Saline Infusion

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OBJECTIVES/SPECIFIC AIMS: To evaluate the ability of various techniques to track changes in body fluid volumes before and after a rapid infusion of saline. METHODS/STUDY POPULATION: Eight healthy participants (5M; 3F) completed baseline measurements of 1) total body water using ethanol dilution and bioelectrical impedance analysis (BIA) and 2) blood volume, plasma volume and red blood cell (RBC) volume using carbon monoxide rebreathe technique and I-131 albumin dilution. Subsequently, 30mL saline/kg body weight was administered intravenously over 20 minutes after which BIA and ethanol dilution were repeated. RESULTS/ANTICIPATED RESULTS: On average, 2.29±0.35 L saline was infused with an average increase in net fluid input-output (I/O) of 1.56±0.29 L. BIA underestimated measured I/O by −3.4±7.9%, while ethanol dilution did not demonstrate a measurable change in total body water. Carbon monoxide rebreathe differed from

https://doi.org/10.1017/cts.2019.114 Published online by Cambridge University Press