

Efficacy and Mechanisms of Combined Aerobic Exercise and Cognitive Training in MCI (The ACT Trial)

Status: Recruiting

Eligibility Criteria

Age: 18 years and over

Inclusion Criteria:

-65 years and older - diagnosis of Mild Cognitive Impairment - live in the community - English speaking - adequate vision - physician confirms that exercise is safe - stable on drugs affecting cognitive and psychological status - able to have a MRI

Exclusion Criteria:

- resting heart rate less than 50 or greater than 100 - additional medical or mental health diagnosis (study staff will review) - enrolled in another intervention study related to cognitive improvement

Conditions & Interventions

Conditions:

Brain & Nervous System, Community Health

Keywords:

cognitive decline, memory complaint, mild cognitive impairment

More Information

Description: This study will be a multi-site, single-blinded, randomized controlled trial (RCT) that will screen older adults with mild cognitive impairment (MCI) using 4 steps (over the phone, in-person interview including informed consent, medical verification, exercise stress test/magnetic resonance imaging [MRI]). We will enroll 128 participants (target 96 completers, assuming 25% attrition rate at 6 months). After baseline assessment, participants will be enrolled and randomized within age (65-74 years of age or ≥ 75 years of age) and study site (Minnesota or Rochester) strata centrally at the University of Minnesota (UMN) to one of four groups: ACT, cycling only, SOP only, or control with equal allocation and using a randomization scheme generated by our UMN biostatistician (CI: Vock). Group allocations will be concealed to all investigators and data collectors. The interventions will last for 6 months with 12-month follow-up. Outcomes include: 1) cognition: composite measures of executive function and episodic memory, 2) AD signature cortical thickness: composite using structural magnetic resonance imaging (MRI), 3) functional connectivity in DMN: resting-state using functional MRI (fMRI), 4) aerobic fitness, and 5) clinical and pathological AD conversion. Cognition and aerobic fitness will be assessed at baseline, 3, 6, 12, and 18 months; AD conversion at 6, 12, and 18 months; and AD signature cortical thickness and DMN at baseline, 6, 12, and 18 months. PIs Yu and Lin have developed and tested strategies in their preliminary studies to successfully ensure the protection of human participants.

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