Results: Nonparametric correlation analyses revealed no significant relationships between total dietary fat (as measured by the SF-FFQ) and cognitive performance, which included CVLT Trial 1 (r = .28, p = .09), Oral Trail Making Test Part B (r = .02, p = .89), Number Span Forward (r = .18, p = .27) and Number Span Backward (r = -.04, p = .83), Stroop Color trial (r = -.10, p = .56), and Stroop Color-Word trial (r = -.09, p = .58). Notably, however, data is continuing to be collected and these relationships will be examined further with additional data.
Conclusions: While total fat consumption was expected to be associated with attention and working memory measures, correlations revealed nonsignificant relationships. Notably, there are important limitations to consider, as other expected relationships based on previous research findings/theoretical relationships (e.g., positive correlation between waist-to-hip ratio and fat consumption) were lacking. A primary limitations of this study included a small sample size of cognitive and physically healthy middle-aged adults. Regardless, these relationships should be explored further with a greater and more diverse sample size.

Categories: Aging
Keyword 1: memory disorders
Keyword 2: cognitive functioning
Keyword 3: working memory
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73 Sex Differences in Verbal Memory and Alzheimer's Disease Biomarkers in Clinically Normal Older Adults: Role of SNAP-25 Genetics

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Objective: Females outperform males on verbal memory tests across the lifespan. Females also exhibit greater Alzheimer's disease (AD) pathology at preclinical stages and faster atrophy and memory decline during disease progression. Synaptic factors influence the accumulation of AD proteins and may underpin cognitive resilience against AD, though their role in sex-related cognitive and brain aging is unknown. We tested interactive effects of sex and genetic variation in *SNAP-25*, which encodes a presynaptic protein that is dysregulated in AD, on cognition and AD-related biomarkers in cognitively unimpaired older adults.
Participants and Methods: Participants included a discovery cohort of 311 cognitively unimpaired older adults (age mean [range]=70 [44-100]; 56% female; education mean=17.3 years; 24% *APOE*-e4+), and an independent, demographically-comparable replication cohort of 82 cognitively unimpaired older adults. All participants completed neurological examination, informant interview (CDR=0), neuropsychological testing, and blood draw. Participants were genotyped for the *SNAP-25* rs105132 (T→C) single-nucleotide polymorphism via Sequenom (discovery cohort) or Omni 2.5M (replication cohort). In vitro models show the C-allele is associated with increased SNAP-25 expression compared to T/T genotype. A subset of the discovery cohort completed structural MRI (n=237) and florbetapir Aβ-PET (n=97). Regression analyses across cohorts examined the interaction of sex and *SNAP-25* genotype (T/T homozygotes [53% prevalence] vs. C-carriers [47% prevalence]) on cognitive z-scores (verbal memory, visual memory, executive function, language), adjusting for age, education, *APOE*-e4, and *APOE*-e4 x sex. Discovery cohort models also examined sex-dependent effects of *SNAP-25* on temporal lobe volumes and Aβ-PET positivity.
Results:
SNAP-25 T/T vs. C-carriers did not differ on demographics or *APOE*-e4 status across cohorts or within sexes. Sex interacted with *SNAP-25* to predict verbal memory (p=.024) and language (p=.008) in the discovery cohort, with similar verbal memory differences observed in the replication cohort. In sex-stratified analyses, C-carriers exhibited better verbal memory than T/T carriers among females (d range: 0.41 to 0.64, p range: .008 to .046), but not males (d range: 0.03 to 0.12, p range: .499 to .924). In *SNAP-25*-stratified analyses, female verbal memory advantages were larger among C-carriers (d range: 0.74 to 0.89, p range: <.001 to

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.034) than T/T (*d* range: 0.13 to 0.36, *p* range: .022 to .682). Sex also interacted with *SNAP-25* to predict Aβ-PET positivity (*p*=.046) such that female C-carriers exhibited the lowest prevalence of Aβ-PET positivity (13%) compared to other groups (23% to 35%). C-carriers exhibited larger temporal lobe volumes across sex, yet this effect only reached statistical significance among females (females: *d*=0.41, *p*=.018; males: *d*=0.26, *p*=.179). In post-hoc analyses, larger temporal lobe volumes were selectively associated with better verbal memory in female C-carriers (β=0.36, *p*=.026; other groups: |βs|<0.10, *p*s>.538).
Conclusions: Among clinically normal older adults, we demonstrate female-specific advantages of carrying the *SNAP-25* rs105132 C-allele across cognitive, neural, and molecular markers of AD. The rs105132 C-allele putatively reflects higher endogenous levels of *SNAP-25*. Our findings suggest a female-specific pathway of cognitive and neural resistance, whereby higher genetically-driven expression of *SNAP-25* may reduce likelihood of amyloid plaque formation and support verbal memory, possibly through fortification of temporal lobe structure.

Categories: Genetics/Genetic Disorders
Keyword 1: genetic neuropsychology
Keyword 2: cognitive reserve
Keyword 3: dementia - Alzheimer's disease
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74 Adherence to Behavioral Interventions is Associated with a Change in Participant Adjustment in a Sample of aMCI Patients

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Objective: Behavioral interventions are a non-pharmacological treatment that shows improvement in the everyday functioning of people with Mild Cognitive Impairment (MCI). Multiple studies have focused on examining factors that can reduce or enhance adherence to behavioral interventions. However, few studies use adherence as a predictor of functional changes. The goal of this study was to analyze the association between adherence, age, and education in factor score changes of participant impairment, participant adjustment, and partner adjustment in a sample of participants with amnestic MCI (aMCI) and their study partners.
Participants and Methods: We included fifty-two dyads of a person with aMCI and their study partner with intervention data at baseline and 24-week follow-up from the Physical Exercise and Cognitive Engagement Outcomes for Mild Neurocognitive Disorder (PEACEOFMND) study. At baseline, participants were randomized to one of three behavioral interventions: computerized cognitive training (BrainHQ; n=19), yoga (n=15), or wellness education (n=18). Factors were established from a larger clinical sample that used the same measures as PEACEOFMND. The three-factor latent structure was constructed as the following: 1) participant adjustment combined scores of the Center for Epidemiologic Studies Depression Scale (CES-D), Quality of Life in Alzheimer's Disease (QoL-AD), and Self-Efficacy for managing MCI scales; 2) partner adjustment included study partner's scores in CES-D, QoL-AD and Caregiving Competence and Mastery Components (CCMC) of the Pearlin scales; 3) participant impairment included participant's scores in E-Cog memory domain, and study partner's scores in the Functional Activity Questionnaire (FAQ) and Zarit Burden Interview. We calculated factor changes by obtaining the difference between factor scores at follow-up and baseline. Bayesian correlation analysis was performed to investigate the association between age, education, adherence to the combined behavioral interventions, participant adjustment, participant impairment, and partner adjustment.
Results: The Bayesian correlation results showed moderate evidence (BF10=6.8, Pearson's r=0.38) supporting a positive correlation between adherence and change in participant adjustment. Additionally, there was moderate evidence (BF10=2.18, Pearson's r=0.32) supporting a positive correlation between change in participant impairment and participant level of education as well as participant age and change in partner adjustment (BF10=2.8, Pearson's r=0.33).
Conclusions: Bayesian correlations replicated results from previous analysis using a traditional

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