United States, 2. GA Tech, Atlanta, Georgia, United States, 3. Georgia Institute of technology, Atlanta, Georgia, United States

Individuals with Mild Cognitive Impairment (MCI) face many challenges, including cognitive declines and reduced independence which are associated with poor health outcomes. Although there is no cure for MCI, mind-body exercise classes may improve cognitive function and reduce risk of falls (Wayne, Yeh, & Mehta, 2018). However, such classes are often not accessible for individuals with MCI due to lack of transportation, fear of being stigmatized, or inability to find instructors who have experience working with individuals with MCI (Hobson & Middleton, 2008; Rimmer, 2005). Tele-technology, such as video-conferencing software, has the potential to remove barriers to participation by allowing individuals to attend classes from home. The goal of this study was to assess the feasibility of using tele-technology to deliver mind-body classes to individuals with MCI. We evaluated technology acceptance and usability for OneClick.chat, a web-based video-conferencing platform designed for older adults. Stakeholders (4 subject matter experts, 2 individuals with MCI, and 2 care partners) participated in a user study that included questionnaires and a short interview. The technology acceptance data indicate that OneClick.chat was perceived as easy to use. Some individuals expressed privacy and security concerns which could be addressed with additional education and support. These findings have implications for interface design, education, and training for deployment of tele-technology delivered mind-body classes for those with MCI.

BODY MASS INDEX TRAJECTORY AND INCIDENT MILD COGNITIVE IMPAIRMENT AMONG AFRICAN AMERICAN OLDER ADULTS

Adrienne Aiken Morgan,1 Ana Capuano,2 Robert Wilson,2 and Lisa Barnes,3 1. University of North Carolina at Chapel Hill, North Carolina, United States, 2. Rush, Chicago, Illinois, United States, 3. Rush University Medical Center, Chicago, Illinois, United States

Previous research suggests a decline in body mass index (BMI) among older adults is associated with negative health outcomes, including mild cognitive impairment (MCI) and incident dementia (Gao et al., 2011). However, few studies have examined BMI longitudinal trajectories and how they change after MCI diagnosis among older African Americans. To characterize trajectories of change in BMI among older African American participants with no cognitive impairment at baseline we used data from the Minority Aging Research Study, MARS (N=408, 76.5% women, mean age = 73.5, mean education = 15.0). We constructed piecewise linear mixed-effects models that included a random intercept and two random slopes. The first slope began at baseline. The second slope began at MCI diagnosis allowing for acceleration in the rate of decline after the diagnosis. The results showed BMI declined over time (B=-0.19, SE=0.04, p<.001), and there was a faster decline after MCI (additional decline, B=-0.18, SE=0.068, p=.007). In a second model controlling for age, higher education was associated with a lower BMI at baseline (B=-0.36, SE=0.092, p<.001) but slower decline before MCI (B=0.02, SE=0.006, p=.001). However, after MCI the decline of participants with higher education was faster (B=-0.06, SE=0.022, p=.003). These results suggest an accelerated decline in BMI following MCI diagnosis, with higher education related to an even faster BMI decline, possibly a consequence of cognitive reserve.

EARLY VERSUS LATE MILD COGNITIVE IMPAIRMENT: NEURAL EVENT-RELATED OSCILLATIONS DURING A GO/NO GO TASK

Elizabeth Lydon,1 Lydia Nguyen,2 Shraddha Shende,1 Hsueh-Sheng Chiang,3 and Raksha Mudar,4 1. University of Illinois Urbana-Champaign, Champaign, Illinois, United States, 2. iN 2. L, Denver, Colorado, United States, 3. UT Southwestern Medical Center, UT Southwestern Medical Center, Texas, United States, 4. University of Illinois-Urbana Champaign, Champaign, Illinois, United States

Amnestic mild cognitive impairment (aMCI) is marked by episodic memory deficits, which is used to classify individuals into early MCI (EMCI) and late MCI (LMCI). Growing evidence suggests that individuals with EMCI and LMCI differ in other cognitive functions including cognitive control, but these are less frequently studied. Using a semantic Go/NoGo task, we examined differences in cognitive control between EMCI and LMCI on behavioral (accuracy and reaction time) and neural (scalp-recorded event-related oscillations in theta and alpha band) measures. Although no behavioral differences were observed between the groups, EMCI and LMCI groups differed in patterns of neural oscillations for Go compared to NoGo trials. The EMCI group showed differences in theta power at central electrodes and alpha power at central and centro-parietal electrodes between Go and NoGo trials, while the LMCI group did not exhibit such differences. Furthermore, the LMCI group had higher theta synchronization on Go trials at central electrodes compared to the EMCI group. These findings suggest that while behavioral differences may not be observable, neural changes underlying cognitive control processes may differentiate EMCI and LMCI stages and may be useful to understand the trajectory of aMCI.

PAIN PERSISTENCE IS ASSOCIATED WITH INCREASED ODDS OF MCI IN LATE MIDLIFE AND EARLY OLDER ADULTHOOD

Tyler Bell, Jeremy Elman, Carol Franz, and William Kremen, University of California San Diego, La Jolla, California, United States

Twenty percent of older adults will experience persistent pain, the sensation of bodily harm lasting three or more months. Persistent pain doubles the risk of dementia, but we know less about the impact on earlier stages, such as mild cognitive impairment (MCI). As a step for clarification, this study leveraged data from the Vietnam Era Twin Study of Aging (VETSA) to understand how pain persistence relates to MCI in late midlife to early older adulthood. Participants (n=1,465, 100% male) were recruited across three waves at average ages 56, 62, and 68. At each wave, participants completed the SF-36 and were asked to rate their pain intensity from none (1) to very severe (6). Clinical pain was coded as pain intensity rated more than mild (>3/6). As a time-varying predictor, pain persistence was then calculated as a running frequency of the total waves reporting clinical pain. MCI diagnosis was based on Jak-Bondi criteria. Age, depressive symptoms, comorbidities, and opioid use were included as
time-varying covariates. Age and education were included as time-invariant covariates. General estimating equations showed that pain persistence over two waves, reported in 35% of the sample, increased MCI odds by 57% (OR=1.57, 95%CI: 1.28 to 1.94). Pain persistence over three waves, reported in 17% of the sample, increased MCI odds by 98% (OR=1.98, 95%CI: 1.44 to 2.70). The findings emphasize the role of pain in earlier stages of dementia and the potential importance of pain management in offsetting cognitive decline.

**Session 1440 (Symposium)**

**NEW DIRECTIONS IN DIETARY RESTRICTION: REMEMBERING EDWARD MASORO**
Chair: Arlan Richardson

In 1935, Clive McCay reported that severe restriction of food increased the lifespan of male rats. In the following four decades, several laboratories replicated this observation with less sever restrictions, which will be referred to as dietary restriction (DR). However, there were concerns even in the aging community in the 1970s as to whether DR increased lifespan by retarding aging. It was the research of two former Kleemeier Awardes, Edward Masoro and Roy Walford, that conclusively demonstrated in the 1980s that DR retarded aging resulting in improved healthspan and reduced pathology. Ed Masoro’s research was focused on lipid metabolism when he was invited to attend a workshop on metabolism and aging in 1969. His interest in aging was piqued such that the more he learned about aging, the more interested he became. In a subsequent workshop in 1973, Ed heard Morris Ross describe his research on restricting food intake on cancer and longevity. Ed was impressed that a relatively simple manipulation had such dramatic effects, and he decided to focus his research on DR. After an extensive review of the DR literature up to the 1970s, Ed established the 40% restriction paradigm, which is used in almost all DR studies to date. Ed’s group was the first to study aging and DR under barrier conditions which he established at San Antonio. Over the next two decades, Ed would direct a Program Project that showed DR had a dramatic effect on most age-related pathologies and improved many physiological functions. Studying the restriction of fat, protein, micronutrients, Ed came to the conclusion that total calories consumed was a key factor in the effect of DR on longevity. His group was the first to show that DR significantly reduced circulating levels of glucose and insulin, which was subsequently shown to occur because of increased insulin sensitivity and is now recognized as a hallmark of DR and potentially important in the anti-aging action of DR. Ed was chair of the Biological Sciences Section of GSA in 1979 and President in 1995. This session is dedicated to Edward Masoro who passed away on July 11, 2020 at the age or 95. Dr. Masoro was president in 1995 and BS chair in 1979, Clive McCay was President in 1949.

**INTERMITTENT FASTING: FROM CALORIES TO TIME RESTRICTION**
Rafael de Cabo, NIA, Baltimore, Maryland, United States

Classic implementation of caloric restriction (CR) in laboratory animals increases health and longevity in most model organisms. Traditionally, chronic CR is the reduction of daily energy intake without malnutrition. Recently, paradigms have emerged that recapitulate some of the beneficial aspects of this intervention, avoiding some of its challenges. The length of daily fasting length and periodicity have emerged as potential drivers behind CR’s beneficial health effects. Numerous strategies and eating patterns, including prolonged periods of fasting, have been successfully developed to mimic many of CR’s benefits without its austerity. These new feeding protocols range from short mealtimes designed to interact with our circadian system (daily time-restricted feeding) to more extended fasting regimens known as intermittent fasting. We will discuss the current status of knowledge on different strategies to reap the benefits of CR on metabolic health in rodent models and humans without the rigor of chronic reductions in caloric intake.

**IMPACT OF CALORIC RESTRICTION ON MOLECULAR AND FUNCTIONAL NETWORKS IN RHEUSUS MONKEYS**
Rozalyn Anderson, University of Wisconsin-Madison, Madison, Wisconsin, United States

Caloric restriction (CR) delays aging and the onset of age-related disease in diverse species. Several diseases of aging including diabetes, cancer, and neurodegeneration, have an established metabolic component. Although the mechanisms of CR remain unknown, numerous factors implicated in longevity regulation by CR converge on regulation of metabolism. The reprogramming of metabolism with CR is tissue specific, but mitochondrial activation and changes in redox metabolism are among the shared features. Changes in non-coding miRNA and in processing of transcripts are contributing mechanisms in integrating metabolic and growth pathways. Our studies in simple cell culture shows that small changes in metabolic status can precipitate large-scale multi-modal functional changes across cellular processes. We propose that modest failures in metabolic integrity with age broadly impact homeostasis and adaptation, creating shared vulnerability to diseases and conditions despite differences in their etiology, and that CR harnesses this same axis to promote health and enhanced longevity.

**CIRCADIAN ALIGNMENT OF FEEDING REGULATES LIFESPAN EXTENSION BY CALORIC RESTRICTION**
Victoria Acosta-Rodriguez,1 Filipa Rijo-Ferreira,1 Mariko Izumo,1 Pin Xu,2 Carla Green,1 and Joseph Takahashi,1 1. UT Southwestern Medical Center, Dallas, Texas, United States, 3. Icahn School of Medicine at Mount Sinai, New York, New York, United States

Caloric restriction (CR) promotes longevity in several species. Classic CR protocols often lead to chronic cycles of 2h-feeding/22h-fasting, raising the question whether calories, fasting or time of day are causal. To address this, we tested an AL control group and five CR protocols with different timing and duration of feeding/fasting cycles. C57BL/6J male mice were subjected to 30% CR as one single meal a day at the beginning of the day or night (classical protocols with < 2h feeding, CR-day and CR-night), or smaller meals distributed for 12h (CR-day-12h and CR-night-12h), or evenly spread out throughout 24h (CR-spread) to abolish the otherwise daily feeding pattern adopted by nocturnal animals. We found that CR alone is sufficient to extend lifespan without...