

(2009-2013 and 2017-2018, respectively) and had valid accelerometer data (>4 days with >10 hours/day pre- and post-retirement). Accelerometer-based PA was categorized into average minutes per day spent in sedentary, light-intensity, and moderate-to-vigorous PA. Participants reported changes (less, same, more) in 12 types of PA. After retirement, participants decreased both sedentary time (by 36.3 minutes/day) and moderate-to-vigorous PA (by 5.6 minutes/day). Conversely, there was an increase in light-intensity PA (+18.1 minutes/day) after retirement. Participants reported changes in their participation level in various PA activities. For example, 41% reported an increased amount of TV viewing, 42% reported less walking, and 31% reported increased participation in volunteer activities. Findings indicate that retirement coincides with a change in the time spent in each intensity category and the time spent across a range of activity types. Further research is warranted to examine how these changes in physical activity patterns influence post-retirement health status.

#### THE EFFECT OF THEORY-LED INTERVENTION FOR KNEE OSTEOARTHRITIS IN OLDER ADULTS: A CLUSTER RANDOMIZED TRIAL

Limin Wang, Hongbo Chen, Han Lu, Jieru Chen, and Shaomei Shang, *Peking University, Beijing, China*

Knee osteoarthritis (KOA) is a common joint disease in people over 60 years old. Exercise therapy is one of the most effective non-pharmacological treatments for KOA, but low exercise adherence needs to be improved. This two-arm cluster randomized trial study was to evaluate the effect of the transtheoretical model-lead home exercise intervention (TTM-HEI) program on exercise adherence, KOA symptom (pain intensity and joint stiffness) and knee function (lower limb muscle strength and balance) in Chinese older adults diagnosed with KOA. A total of 189 community-dwelling older adults with KOA (intervention group:  $n = 103$ , control group:  $n = 86$ ) were enrolled from 14 community centers in Beijing, China in 2018. The intervention was a two-stage and 24-week transtheoretical model-based exercise program, and the control group underwent a same length but non-theory-based exercise program. Exercise adherence was measured at weeks 4, 12, 24, 36, and 48 after the program started, KOA symptoms and knee function were measured at baseline, week 24, and week 48. Results showed that the growth rate of exercise adherence in the intervention group increased 2.175 units compared with the control group (unstandardized coefficient of slope on group B2 = 2.175,  $p < 0.001$ ), and the intervention program maintained participants' exercise adherence with 5.56 (SD = 1.00) compared with 3.16 (SD = 1.31) in the control group at week 48. In addition, TTM-HEI program showed significant effects on relieving KOA symptoms and improving knee function. This study provided an effective strategy for KOA intervention.

#### TYPE 2 DIABETES REDUCES THE MUSCLE ANABOLIC EFFECT OF RESISTANCE EXERCISE TRAINING IN OLDER ADULTS

Amanda Randolph, Tatiana Moro, Adetutu Odejimi, Blake Rasmussen, and Elena Volpi, *The University of Texas Medical Branch at Galveston, Galveston, Texas, United States*

Type 2 Diabetes Mellitus (T2DM) accelerates the incidence and increases the prevalence of sarcopenia in older adults. This suggests an urgent need for identifying effective sarcopenia treatments for older adults with T2DM. It is unknown whether traditional approaches, such as progressive resistance exercise training (PRET), can effectively counteract sarcopenia in older patients with T2DM. To test the efficacy of PRET for the treatment of sarcopenia in older adults with T2DM, 30 subjects (15 T2DM and 15 age- and sex- matched controls) underwent metabolic testing with muscle biopsies before and after a 13-week full-body PRET program. Primary outcome measures included changes in appendicular lean mass, muscle strength, and mixed muscle fractional synthesis rate (FSR). Before PRET, BMI-adjusted appendicular lean mass was significantly lower in the T2DM group ( $0.7095 \pm 0.0381$  versus  $0.8151 \pm 0.0439$ ,  $p < 0.0001$ ). As a result of PRET, appendicular lean mass adjusted for BMI and muscle strength increased significantly in both groups, but to a lesser extent for the T2DM group ( $p = 0.0009$ ). Preliminary results for FSR ( $n = 25$ ) indicate that subjects with T2DM had lower basal FSR prior to PRET ( $p = 0.0197$ ). Basal FSR increased significantly in the control group after PRET ( $p = 0.0196$ ), while it did not change in the T2DM group ( $p = 0.3537$ ). These results suggest that in older adults the positive effect of PRET on muscle anabolism and strength is reduced by T2DM. Thus, older adults with T2DM may require more intensive, multimodal and targeted sarcopenia treatment. Funded by NIH R01AG049611 and P30AG024832.

### SESSION 3027 (PAPER)

#### SENSORY HEALTH AND IMPAIRMENT (PAPER)

#### A SYSTEMATIC REVIEW OF VISUAL IMPAIRMENT AND COGNITIVE DECLINE AMONG OLDER ADULTS

Niranjani Nagarajan,<sup>1</sup> Bonnielin Swenor,<sup>2</sup> Lama Assi,<sup>3</sup> Joshua Ehrlich,<sup>4</sup> and Heather Whitson,<sup>5</sup> 1. *Johns Hopkins University School of Medicine, Baltimore, Maryland, United States*, 2. *Johns Hopkins University, Baltimore, Maryland, United States*, 3. *Johns Hopkins Wilmer Eye Institute, Baltimore, Maryland, United States*, 4. *University of Michigan, Ann Arbor, Michigan, United States*, 5. *Duke University, Durham, North Carolina, United States*

Cognitive and visual impairments frequently coexist. With the aging of populations worldwide, the prevalence of these conditions are projected to increase substantially over time. A number of studies suggest that cognitive function and vision impairment are associated, and it is hypothesized to be due to a (1) common cause etiology, where both share common risk factors, and/or (2) causal association, where visual impairment causes cognitive decline. Sensory loss can lead to increased cognitive load, structural and functional changes in the brain, and/or decreased emotional, social, and physical well-being, all of which could potentially increase the risk of cognitive impairment. We conducted a systematic review of the existing literature, examining the association between cognitive and visual impairment among older adults. A total of 80 observational studies that reported a measure of association between visual and cognitive function and met