

environment enhances their value as a life-span model. Since that time, efforts to better define what aging actually looks like in marmosets has intensified. Important findings of the past decade include: (1) a refined definition of lifespan in this species and what affects age-specific survival; (2) assessments of age-related pathological changes; (3) development of functional phenotyping relevant to aging, such as activity, strength, body composition, cytokine profiling; (4) support of studies using the marmoset as a preclinical model to test intervention that may modulate the aging process.

SESSION 530 (SYMPOSIUM)

HARNESSING THE POWER OF OLDER AMERICANS: INDEPENDENCE CENTER NETWORKS TO DEVELOP TECHNOLOGIES PROMOTING MOBILITY

Chair: Katherine S. Hall, *Durham Veterans Affairs Health Care System, Durham, North Carolina, United States*

Co-Chair: Kevin Caves, *Duke University, Durham, United States*

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Information communication technology (ICT) refers to various technologies encompassing software, networking, the Internet, telecommunications, information systems, and more. As healthcare organizations adopt ICT devices and platforms, patients and providers will have more tools available to improve access to monitoring, telehealth, and timely interventions. The use of alternative methods of collecting, recording, and displaying data (e.g., smart speakers, chat bots, wearables) promise to improve health outcomes for the older adult population. As the U.S. population ages, opportunities for development designed specifically for older adults should be a focus for healthcare organizations. While there are challenges and barriers to enabling new technology within this population, research shows that older adults are adopting new technology. This symposium is focused on these emerging technologies and will showcase diverse examples of ICT implemented across various older adult populations and clinical application areas. The first paper describes the validation of Gaitbox, a walking speed measurement device. The second paper describes using multiple sensors to capture real-world loss of balance and recovery responses. The third paper reports the feasibility of using fitness gamification with a Virtual Reality Treadmill in older adults. The fourth paper describes a smartphone-based assessment of dual task standing and walking. The fifth paper describes wearable sensor-based assessment of falls risk of Timed Up-and-Go test. The Claude D. Pepper Centers maintain year-round coordination and collaboration through a national coordinating center. This powerful network, working towards the common goal of improving the lives of older Americans, has sparked technologic advances that will be highlighted here.

CAPTURING REAL-WORLD LOSSES OF BALANCE AND RECOVERY RESPONSES IN OLDER ADULTS AT RISK FOR FALLS

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Losses of balance (LOBs) such as trips can lead to falls in older adults; what actually happens during real-world LOBs is unclear. With 4 wearable inertial measurement units (IMUs), we recorded feet, trunk and wrist movements over 2 weeks. Using a wrist voice recorder to report the LOBs, we applied our IMU processing algorithms and reconstructed the full body LOB and recovery motions. We recruited 7 at-risk older adults (M=76 yrs) who reported 114 LOBs of which we reconstructed over 90%. Using a rating system, 52% of the LOBs involved a significant trip, stumble, recovery step, and/or large trunk motion. 25% involved double or stutter steps and smaller trunk motions. The other 23% had less striking associated motions. These data suggest that most, but not all, self-reported real world LOBs involve substantial postural destabilization and near falls. Analyses of the voice-recorded context under which the LOBs occurred are ongoing.

VALIDATION OF A WALKING SPEED MEASUREMENT DEVICE: GAITBOX

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The NIH 4m Walk Test is a clinically validated tool to measure adult walking speed. Human reaction limitations can contribute to measurement error when manually timing gait speed. This is important considering a 0.10m/s decrease in walking speed is associated with a 12% decrease in life expectancy for older adults. The goal of this study was to validate a low cost, custom built device, Gait Box (GB), compared to human timer (HT) and a research grade Sprint Timing System (STS) with an older adult (mean 72.4 + 7.4 years of age) population (N = 35). Validity was assessed via accuracy (correlations), precision (mean differences), and bias (Bland-Altman plots). Results showed strong correlations between the GB and HT (0.99) and the GB and STS (0.98), with negligible mean differences. This demonstrates the GB can be used to accurately and precisely measure gait speed in clinical and research settings.

FEASIBILITY OF VIRTUAL REALITY TREADMILL TRAINING IN OLDER ADULTS WITH MOBILITY AND FITNESS DEFICITS

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Only 23.6% of adults and <10% of adults age >75 years meet physical activity (PA) guidelines (aerobic & muscle-strengthening). Health benefit gym memberships has not