A-20 Thematic Poster - **A Wonder Drug for Healthy Aging: Physical Activity**

Wednesday, May 31, 2017, 9:30 AM - 11:30 AM
Room: 505

80 **Chair:** Loretta DiPietro, FACSM. *The George Washington University, Washington, DC.*
(No relationships reported)

81 Board #1 May 31 9:30 AM - 11:30 AM

Intermittent Walking has Similar Effects on 24-Hour Glycemia as a Calorically Equivalent Continuous Walk in Older Adults

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Reported Relationships: K. Lyden: *Consulting Fee; PAL Technologies.*

Older adults spend more time engaged in sedentary behavior (SB) than any other segment of the population. Interrupting sedentary time with short bouts of walking improves 24-hour glycemic control compared to uninterrupted sitting. However, it is not known if short-walking bouts are as beneficial to 24-hour glycemia as a single bout of continuous exercise.
PURPOSE: To compare the effectiveness of multiple, short intermittent walking bouts and one, calorically equivalent continuous bout of walking on 24-hour glycemia in older adults.
METHODS: Healthy, overweight/obese older adults (N=18, 67 ± 5 y, BMI = 32.2 ± 4,3 kg/m^2) completed two, 24h conditions in a whole room indirect calorimeter; 1) Intermittent walking (IW): 1.5 min of moderate intensity treadmill walking (36 min total) every 30 minutes and 2) continuous walking (CW): 36 min continuous, moderate intensity treadmill walking performed in the morning (~8AM). Outside of the prescribed walking times, subjects remained in SB for the remainder of the waking day. Continuous glucose monitoring was used to measure interstitial glucose concentrations every 5 minutes. Energy and macronutrient intake was standardized between conditions.
RESULTS: 24-hour energy expenditure (2257 ± 329 vs. 2165 ± 302 kcal, mean ± SD) and RQ (0.84 ± 0.03 vs. 0.84 ± 0.03) were similar during IW and CW, respectively. Peak postprandial glucose following dinner was lower ($p<0.05$) during IW (120.4 ± 10.7 mg/dl) compared to CW (135.3 ± 15.3 mg/dl). No differences were observed in any other 24 hour glycemia variables, including 24 hour area under the glucose curve (IW = 154862 ± 12724 mg/dl, CW = 158096 ± 15156 mg/dl), glycemic variability (standard deviation of 24 hour glucose concentrations) (IW = 12.2 ± 4.4 mg/dl, CW = 12.2 ± 4.2 mg/dl), and peak postprandial glucose concentrations following breakfast (IW = 144.0 ± 22.7 mg/dl, CW = 144.8 ± 27.2 mg/dl) and lunch (IW = 137.9 ± 17.1 mg/dl, CW = 139.2 ± 17.8 mg/dl).
CONCLUSION: These results suggest IW had similar effects as CW on 24-hour glycemia, although the postprandial glucose response to meals consumed later in the day may be lower with IW. IW may improve cardiometabolic health in older adults.

82 Board #2 May 31 9:30 AM - 11:30 AM

Mobility Improvement After an Exercise Program for Older Adults: Role of Initial Mobility

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Basic mobility tasks are often used to assess improvement in response to physical activity interventions for older adults. However, it can be argued that if strength and endurance capacities are adequate prior to engaging in a program of exercise, further increases in capacity are not expected to alter basic tasks. Usual Gait Speed (UGS), 6 Minute Walk (6MW), and Timed Up and Go (TUG) are often used in research evaluate the efficacy of an exercise training program for older adults. However, the change in these measures has not been evaluated in relation to initial mobility.
PURPOSE: To evaluate the improvement in basic mobility tasks in response to a ten-week community based exercise program for older adults with high or low functional ability.
METHODS: Sixty-one older adults (age= 72.7 yrs+7.9); BMI=32.3+7.2) completed the 10-week Physical Activity for Seniors for Life (PALS) group exercise and lifestyle behavior change program. TUG (time in seconds to rise from a chair, walk 3 meters, return to chair and sit), 6MW (distance covered in 6 minutes), and UGS (meters/second to walk 6 m distance) were measured before and after the exercise program. Participants were divided into upper and lower functional groups based on the median for each mobility task. Repeated measures ANOVA and Effect Size (Cohen's d) were used to examine mean differences within the two groups.
RESULTS: After the exercise program, the lower functional group showed significant improvement in all basic mobility tasks ($p<0.001$). The upper functional group showed significant improvement in 6MW ($p<0.001$) and TUG ($p=0.006$), with no significant change in UGS ($p=0.816$). Importantly, the lower functional group demonstrated much higher effect sizes in all three tests (6MW: 763 vs 1121 feet, d=0.936; TUG: 13.3 vs 11.2 seconds, d=0.858; UGS: 6.3 vs 5.4 seconds d=0.800), pre, post respectively, while the higher functional group showed only moderate or low effect sizes, 6MW (1414 vs 1522 feet, d=0.562), TUG (9.1 vs 8.3 seconds d=0.577), UGS (4.65 vs 4.62 seconds d=0.041) pre, post respectively.
CONCLUSION: These results suggest that UGS may be better suited for use with a frail population, while TUG and 6MW may be useful across a wider range of functional ability in older adults.

83 Board #3 May 31 9:30 AM - 11:30 AM

Unemployed Older Adults' Social Participation was Associated with More Physical Activity and Less Sedentary Time

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PURPOSE: Social participation provides health benefits for older adults, but it is not known whether social participation is associated with their being more physically active or less sedentary. We examined these associations in a population-based sample of older Japanese adults.
METHODS: A mail survey conducted in 2010 and gathered data from 1146 community-dwelling, non-working older adults (mean age: 70.1 years, 43% men) on social participation, physical activity, sedentary time and socio-demographic characteristics. Median splits were used to categorize social participation, physical activity and