

during aging. By comparing late passage (P15) vs early passage (P5) MSC, no fundamental changes were found on the large-scale chromatin spatial structures including compartment switching and TAD boundaries. However, when focused on super enhancers, which act as major cis-regulatory hubs associated with lineage-specific functions, a large number of significant promoter-super enhancer interaction changes were discovered. Further examination revealed that YY1, a key regulator of promoter-enhancer looping, was highly enriched in these promoters and their corresponding super-enhancers. The expression of the genes involved in such changes is positively correlated with the variation of promoter-super enhancer interaction, indicating that the spatial communications between promoter and super-enhancer positively regulate gene expression. GO-term and TFBS enrichment analysis showed that these genes involved in cell cycle, adipocyte and osteoblast differentiation. Collectively, these results suggest that YY1-mediated promoter-super enhancer looping is an important regulatory mechanism for MSC multipotency during replicative aging.

PREVENTING FALLS AMONG OLDER FALLERS: LIVE-LIFE

Sarah L. Szanton,¹ Lindy Clemson,² Minhui Liu,³ Laura N. Gitlin,⁴ David L. Roth,³ Melissa D. Hladek,³ Sarah LaFave,¹ and Marianne Granbom⁵, 1. *Johns Hopkins University, Baltimore, Maryland, United States*, 2. *University of Sydney, Sydney, Australia, Australia*, 3. *Johns Hopkins University School of Nursing, Baltimore, Maryland, United States*, 4. *Drexel University, Philadelphia, Pennsylvania, United States*, 5. *Lund University, Lund, Sweden, Sweden*

OBJECTIVES: To evaluate whether a fall prevention intervention, adapted from the LiFE program, reduces fall risk in older adults who have previously fallen. **DESIGN:** Randomized controlled pilot trial **SETTING:** Participants' homes **INTERVENTION:** LIVE-LIFE is an occupational therapy delivered fall prevention intervention that integrates strength and balance training into daily habits in 8 visits over 12 weeks. The intervention also provides 1) up to \$500 in home safety changes prioritized by the participants 2) vision contrast screening and referral, and 3) personalized fall risk medication recommendations to Primary Care Providers (PCP) from a Pharmacist. This multi-component intervention was compared to a control condition consisting of CDC fall prevention materials and an individualized fall risk summary. **MEASUREMENT:** Primary outcome: Fall risk measured by Timed Up and Go (TUG) and Tandem stand. Secondary outcomes: Falls efficacy, feasibility and acceptability of the intervention. **RESULTS:** The sample of 37 people was 65% female, 65% white and an average 77 years old. Two were lost to follow up (95% retention). Compared to the control group, the mean of each outcome improved in the intervention. The LIVE-LiFE intervention had a large effect size (1.1) for amount of time study participants could hold a tandem stand, a moderate effect (0.5) in falls efficacy, and a small effect (0.1) in the TUG. **CONCLUSION:** LIVE-LIFE was acceptable to participants, feasible to provide, and averaged large to small effect sizes. Simultaneously addressing preventable fall risk factors is feasible and should be investigated due to the growing population at risk for falls.

FRAILITY IN HEALTHY OLDEST OLD: CHARACTERIZING THE FRAILITY INDEX OF SUPER-SENIORS

Betty Chinda,¹ Xiaowei Song*,² Shirromi Sarveswaran,¹ Kenneth Rockwood,³ and Angela Brooks-Wilson*⁴, 1. *Department of Biomedical Physiology and Kinesiology, Simon Fraser University, Burnaby, British Columbia, Canada*, 2. *Health Research and Innovation, Surrey Memorial Hospital, Fraser Health Authority, Surrey, British Columbia, Canada*, 3. *Dalhousie University, Halifax, Nova Scotia, Canada*, 4. *Genome Sciences Centre, BC Cancer, Vancouver, British Columbia, Canada*

People at advanced ages often have multiple comorbidities and high frailty. We characterized frailty in "Super-Seniors", individuals 85 or older who have never been diagnosed with cancer, cardiovascular or lung disease, diabetes or dementia. Super-Seniors were enrolled in the Vancouver Healthy Aging Study that consisted of Phase1 (2004-2007; n=486; age=88.6±3.1 years; female=67.5%) and Phase2 (2014-2019; n=167; age=89.2±3.8 years; female=65.3%). A frailty index (FI) that assesses the accumulation of health deficits was calculated as the proportion of deficits present over those considered (here, 30). The FI distribution patterns, mean, median, 99% limit values, relationship to age, and sex differences were analyzed. The FI of Super-Seniors is right-skewed, with a mean of 0.19±0.09 (median=0.17; limit=0.54) in Phase1 and 0.22±0.08 (median=0.21; limit=0.47) in Phase2. Most Super-Seniors (79% and 61% in Phases 1 and 2) had ≤8 of the 30 deficits; FI≤0.24. The FI increased with age (r's=0.29 and 0.24); women showed a higher mean FI than men. Data demonstrated the known and consistent characteristics of the FI. The Super-Seniors, who are healthier than the general population of oldest old, have a significantly lower FI that is more typical of individuals aged about 65. The low FI of these healthy oldest old is consistent with their health and high physical and cognitive function, and underscores their suitability for study as a healthy aged group. Further research will investigate how the FI of Super-Seniors is related to lifestyle and genetic factors and health outcomes.

SHORT-TERM INTRAINDIVIDUAL DYNAMICS OF HEART RATE AND COGNITIVE FUNCTIONING IN OLDER ADULTS

Jonathan Rush,¹ Tomiko Yoneda,¹ Rebecca Venditelli,¹ Jamie E. Knight,¹ Nathan A. Lewis,¹ Philippe Rast,² and Scott Hofer³, 1. *University of Victoria, Victoria, British Columbia, Canada*, 2. *University of California, Davis, Davis, California, United States*, 3. *University of Victoria, Victoria, B.C., United States*

Short-term intraindividual variability in cognition can provide insights into the underlying processes that cannot be captured by only examining mean levels (MacDonald et al., 2003). This variability is often dependent on a number of individual or contextual characteristics. Thus, modeling the heterogeneity of the within-person variance and including meaningful covariates to account for why individuals are more variable on some occasions than others is an alternate way to understand process. The present study utilized a 14-day intensive measurement design to examine the effects of fluctuations in daily heart rate on variability in cognitive performance. Fifty-five older adults (Mage = 70.1 years)