

### HIGH INTENSITY WALKING REDUCES FRAILTY AND IMPROVES PHYSICAL FUNCTION AMONG OLDER ADULTS LIVING WITH HIV

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Walking is a preferred mode of exercise for older adults, yet limited evidence exists on the optimal intensity to promote health gains, particularly among those with the frailty syndrome. Older adults aging with HIV have physical function impairments and higher prevalence of frailty, yet there is a paucity of evidence on therapeutic options to help these individuals maintain or improve their physical functioning. The purpose of this study was to investigate the feasibility and efficacy of a high intensity walking training (HIWT) intervention for pre-frail and frail older adults living with HIV. We enrolled n=11 older adults (>50 years of age and pre-frail or frail on the SHARE-FI). Participants underwent 16 walking sessions 2x/week consisting of 5 minute intervals of stair climbing, fast walking, weighted walking, balance tasks, and steps ups for a total of 30 minutes of high intensity (>70% of HRmax or >15 Rating of Perceived Exertion) activity. All participants were able to achieve the targeted high intensity levels throughout the sessions. We used a t-test to compare pre-post test means on a variety of physical performance measures. We found statistically significant improvements in the frailty score on the SHARE-FI, PROMIS fatigue, self-selected gait speed, Short Physical Performance Battery (SPPB), and Six Minute Walk Test. Importantly, all improvements were far above minimally clinically important differences suggesting this novel exercise approach may contribute to substantial improvements in physical function to reduce frailty in this population of older adults. Participants had no adverse events and were highly satisfied with training.

### IMPACT OF FRAILTY ON MEDICAL AND LONG-TERM CARE EXPENDITURES FOR THE ELDERLY AGE 75 OR OVER IN JAPAN

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This study examined the impact of frailty on medical and long-term care expenditures in an older Japanese population. The subjects were those aged 75 years and over who responded to the survey (March 2018) in Bibai, Hokkaido, Japan (n=1,203) and have never received certification of long-term care insurance at the survey. We followed up 867 individuals (72.1%) until the end of December 2018 (10 month-period). We defined frailty as a state in performing 4 items and over of 15 items which were composed of un-intentional weight loss, history of falls, etc. Among 867 subjects, 233 subjects (26.9%) were judged to be frailty group, and 634 subjects (73.1%) non-frailty group. We compared period to the new certification of long-term care insurance (LTCI), accumulated medical and long-term care expenditures adjusted for age and gender between the two groups during the follow-up period. Cox proportional hazard models were used to examine the association between baseline frailty and the new certification of LTCI. The

relative hazard ratio (HR) was higher in frailty group than non-frailty group (HR=3.51, 95% CI : 1.30-9.45, P=.013). The adjusted mean accumulated medical and long-term care expenditures per capita during the follow-up were significantly (P=.002) larger for those in the frailty group (629,699 yen), while those in the non-frailty group were 450,995 yen. We confirmed strong economic impact of frailty in the elderly aged 75 or over in Japan.

### INFLUENCE OF FRAILTY ON DISCHARGE SETTING FOR OLDER ADULTS WITH HIP FRACTURE AT INPATIENT REHABILITATION FACILITIES

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Inpatient rehabilitation Facilities (IRFs) provide intensive rehabilitation therapy to patients to reduce functional impairment, enhance independence and return patients back to the community. Determination of eligibility for IRF is currently based on a preadmission screening. Frailty, a pervasive characteristic in older adults with hip fractures has not been examined as a clinical factor influencing function and discharge destination IRF outcomes. This study purpose was to determine the prevalence of frailty among older adult IRF patients with hip fractures and determine the association between frailty and function and discharge destination among IRF hip fracture patients. A retrospective cohort study design using CMS 2014 Inpatient Rehabilitation Facility-Patient Assessment Instrument file. Frailty was measured using a Frailty Index of 30 items. The final sample included 26,134 patients. Frailty, pre-frailty, and nonfrailty were present in 0.92% (n=24043), 3.3% (n=862), and .076% (n=199) of hip fracture patients, respectively. The majority (65%) of the patients were discharged home. There were significantly greater proportion of females than males discharged home and those of white race, 65 to 74 years of age, and those with higher functional status. Regression analysis showed significantly lower functional status at discharge (p < .0001) for males and those of non-white race, older age and frail. Study implications include the use of frailty status to identify hip fracture patients at high risk for adverse outcomes and need for future studies to explore the potential of frailty to provide value-added utility to IRF clinical settings and identify ongoing opportunities to guide person-centered care.

### MICROSTRUCTURAL NEUROIMAGING OF FRAILTY IN COGNITIVELY NORMAL OLDER ADULTS

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Physical frailty is an age-related clinical syndrome that is related to adverse health outcomes, including cognitive impairment and dementia. Recent studies have shown structural neuroimaging correlates with frailty. However, most existing evidence relies on brain volumetric measures. Whether brain microstructure is associated with frailty and its spatial distribution have not been explored. In the Baltimore Longitudinal Study of Aging, we identified 776 cognitively normal participants aged 50 and older who had concurrent data on frailty and brain microstructure by diffusion tensor imaging (DTI),