increase to OR=11.98 (5.637-13.23) Considering the severe consequences of frailty over health, the high burden of Osteoarthritis, its high frequency in women, and the strength of the association between both conditions, the screening for frailty is highly recommended in older women with Osteoarthritis.

INTERVENTIONS TO PREVENT THE FRAILTY IN OLDER WOMEN WITH FRAILTY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Frailty is a health challenge related to adverse health outcomes in older adults. Older women are more likely to be frail than older men. However, few studies have reviewed the effectiveness of interventions for older women with frailty is scant. Objective: This systematic review aimed to explore the properties of interventions and to investigate their effectiveness in preventing the progression of frailty in older women with pre-frailty or frailty.

Methods: Narrative synthesis was conducted to identify the contents, outcome variables, and findings of the interventions. Then, a meta-analysis was performed to evaluate the effectiveness of exercise interventions on grip strength, sit-and-reach, sit-to-stand, and timed up and go tests.

Results: Twenty-six studies were selected, including 14 randomized controlled trials and 12 quasi-experimental studies. These studies implemented exercise (96.2%), nutrition (15.4%), hormone replacement (7.7%), toileting strategies (3.8%), and laughter interventions (3.8%). The selected studies assessed physical, psychological (11.5%), and cognitive health (11.5%), as well as quality of life (19.2%). The meta-analysis found significant effects of aerobic and resistance exercise interventions on the sit-to-stand (SMD = 1.30, 95% CI [0.70, 1.90], p < 0.001) and timed up and go scores (SMD = -0.56, 95% CI [-0.93, -0.19], p = 0.003).

Conclusion: Exercise interventions are essential to improve physical health, in particular mobility, in older women with pre-frailty or frailty. Future studies should consider theoretical frameworks and evaluate psychological and cognitive health as well as quality of life to develop and provide effective interventions to prevent the progression of frailty in older women.

BLOOD-BASED BIOMARKER CHANGES IN A PHASE 2B TRIAL ASSESSING LOMECEL-B IN OLDER ADULTS WITH FRAILTY

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Aging frailty (AF) is a multidimensional geriatric syndrome that is characterized by physical and cognitive symptoms, increasing the vulnerability of affected older adults to adverse health outcomes. Mechanistically, a low-grade chronic inflammatory state (inflammaging), endothelial dysfunction, and decreased regenerative capacity are thought to be major contributors to AF pathophysiology. Lomecel-B is an allogenic medicinal signaling cell (MSC) formulation that can potentially ameliorate AF through pleiotropic mechanisms, including anti-inflammatory, pro-vascular, and pro-regenerative activities. We completed a Phase 2b randomized, double-blinded, placebo-controlled trial designed to assess Lomecel-B benefits for AF via change versus placebo in the six-minute walk test (6MWT), to assess the dose-response relationship, and to evaluate bioactivity via changes in blood-based biomarkers. Enrolled subjects were aged 70–85 years with mild-to-moderate AF; a reduced 6MWT of 200-400m, and Tumor Necrosis Factor-α of ≥ 2.5pg/mL indicative of inflammaging. In total, 143 subjects received a single intravenous infusion of Lomecel-B at doses of 2.5 x 107 cells (25M, N=35), 5.0 x 107 cells (50M, N=30), 1.0 x 108 cells (100M, N=33), or 2.0 x 108 cells (200M, N=16), or placebo (N=29). Safety and efficacy assessments were performed at 1, 3, 6, and 9 months post-infusion. Increases in 6MWT and decreases in serum levels of the blood-based biomarker Soluble-Tie-2 were observed at 9 months in the Lomecel-B groups versus placebo. Notably, both observations were seen in a dose dependent fashion with 200M showing the highest effect. Based on the findings, a next-phase trial is being developed to advance this clinical program and will be presented.

POLYPHARMACY, FRAILTY, AND DISABILITY-FREE SURVIVAL IN COMMUNITY-DWELLING HEALTHY OLDER INDIVIDUALS

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BACKGROUND: Polypharmacy and frailty are two common geriatric syndromes. We examined the association between polypharmacy and frailty and if, together, they predicted disability-free survival (DFS), defined as time to the first event of dementia, persistent physical disability or death.

METHODS: We included 19,114 participants from the “ASPirin in Reducing Events in the Elderly” (ASPREE) clinical trial. Polypharmacy was defined as regular, concomitant use of five or more prescription medications. Frailty was assessed using a modified Fried phenotype and a deficit accumulation frailty index (FI) of 66 items. The association between polypharmacy and frailty and if, together, they predicted disability-free survival (DFS), defined as time to the first event of dementia, persistent physical disability or death.

RESULTS: Individuals with polypharmacy (vs. < 5 medications) were 55% more likely to be pre-frail (Relative Risk Ratio or RRR: 1.55; 95% Confidence Interval or CI:1.44, 1.68) and three times more likely to be frail (RRR: 3.34; 95% CI: 2.64, 4.22) according to Fried phenotype. Frail individuals had a two-fold reduction in their survival free of dementia/disability (Hazard ratio or HR: 2.16; 95% CI: 1.56, 2.99), whereas frail individuals with polypharmacy had a four-fold reduction (HR: 4.24; 95% CI: 3.28, 5.47). Effect
The participants of this study consisted of 1,789 older adults from the Korean Longitudinal Study of Aging (2006–2018). Functional limitation associated with frailty among older adults is a risk factor of cognitive decline, sensory impairment, and increased the risk of death, dementia or physical disability among older adults. Addressing polypharmacy in older people could ameliorate the impact of frailty on individuals’ functional status, cognition and survival.

**DEVELOPMENT OF A TRANSITIONAL CARE PROGRAM FOR FRAIL OLDER ADULTS BETWEEN HOSPITAL AND HOME**

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Frail older adults particularly need transitional care between hospital and home due to physical function decline and psychological instability after discharge. This study aimed to develop a transitional care for frail older adults in Korea who are discharged home following hospitalization. The Returning Home (Rehome©) program was established through the three phases according to the Medical Research Council’s 2013 guidelines. 1) Identifying the evidence base phase included a systematic review of literature and needs assessments from interviews with frail older adults. The core intervention components (e.g., geriatric assessment, transitional care planning, home visits, phone follow-up, community service liaison, and family engagement) were determined. 2) At the phase of identifying theory, the transition theory was selected and modified to fit the target population in the context of the Korean healthcare system. 3) Phase three was for the modeling process and outcomes. Based on the result from phases 1 and 2, the Rehome program was developed considering clinically applicable strategies. The final Rehome program consisted of a comprehensive geriatric assessment at admission; structured discharge/transitional care planning (e.g., medication review, education for chronic disease management, emergencies, and geriatric syndromes, and community resource) at discharge; a home visit and six phone follow-up calls up to 12 weeks after discharge; and emotional support and engagement of the family during the entire period. The Rehome program showed good content validity. The Rehome as a frailty-focused transitional care program could improve the transition through implementing a tailored intervention that meets the care needs of these vulnerable populations.

**RISK OF FRAILTY ASSOCIATED WITH COGNITIVE DECLINE, SENSORY IMPAIRMENTS, AND FUNCTIONAL LIMITATION IN OLDER ADULTS**

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The purpose of this study was to examine the effects and risk factors of cognitive decline, sensory impairment, and functional limitation associated with frailty among older adults. We conducted secondary data analysis using data from the Korean Longitudinal Study of Aging (2006–2018). The participants of this study consisted of 1,789 older adults over the age of 65 in South Korea who had never experienced frailty at the beginning of the survey (2006). Participants were classified into two groups, frailty and non-frailty, based on frailty events over time. We used Kaplan–Meier analysis to determine the effects of frailty-related group differences on cognitive decline (K-MMSE), sensory impairment (visual and hearing), and functional limitation (K-ADL) from 2006 to 2018. To determine the risk factors associated with frailty, the Cox regression analysis was performed. This study established that over time, approximately 71.2% of the older adults (n = 1,274) developed frailty. The study also revealed that over time, both physical (sensory impairment and functional limitation) and psychological factors (cognitive decline) could lead to frailty. We also identified that demographic (age, female), physical (BMI, chronic disease, hearing, vision, and K-ADL), and psychological (K-MMSE) factors were associated with frailty. This study provides an opportunity for healthcare professionals and policymakers to implement intervention programs tailored to ensure regular monitoring prevention and among of these risk factors.

**TRAJECTORIES OF SKELETAL MUSCLE MASS AND FAT MASS AND THEIR IMPACTS ON MORTALITY IN OLDER JAPANESE ADULTS**

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Skeletal muscle mass and fat mass have differential impacts on mortality between men and women. We aimed to determine age-related trajectories of skeletal muscle mass index (SMI) and fat mass index (FMI) among men and women and to examine their impacts on mortality risks. This prospective study included 1,770 (863 men and 907 women) aged ≥65 years who participated in health check-ups; the total number of observations was 6,110. SMI and FMI were determined using segmental multi-frequency bioelectrical impedance analysis, and their age-related trajectories from age 65–90 years were examined using group-based semiparametric mixture models. SMI and FMI age-related trajectories for all-cause mortality were determined by multivariate-adjusted hazard ratios (HRs) and 95% confidence intervals (CIs). SMI and FMI trajectories were classified into three trajectories in both sexes: the low- (28.6% and 34.0%), middle- (56.0% and 47.5%), and high-trajectory (15.4% and 18.5%) groups in men and the low- (27.6% and 40.9%), middle- (51.6% and 48.1%), and high-trajectory (20.8% and 11.0%) groups in women. The median follow-up was 5.3 years; 101 (11.7%) men and 56 (6.2%) women died. Compared with the low-trajectory groups, male multivariate-adjusted HRs for mortality in the middle- and high-trajectory groups were 0.89 (95% CI: 0.57–1.39) and 0.34 (0.13–0.93) for SMI, and 0.76 (0.47–1.23) and 1.13 (0.60–2.14) for FMI, respectively. Corresponding female multivariate-adjusted HRs were 1.00 (0.50–2.02) and 1.64 (0.62–4.36) for SMI, and 0.74 (0.38–1.43) and 0.37 (0.12–1.14) for FMI. Maintaining high skeletal muscle mass is important for prolonging life expectancy, especially in men.