

adiponectin and all-cause mortality further using data collected on 3525 men and women who were participants in the Long Life Family Study (LLFS), a multicenter cohort study of two-generation families with a clustering of healthy aging and exceptional survival. Fasting serum adiponectin levels were measured at study entry. Date of death was abstracted from death certificates and proxy. Cox proportional hazards models were used to estimate the risk of mortality per one SD increase in adiponectin. We adjusted for age, sex, field center, education, lifestyle factors, BMI, comorbid conditions (diabetes, hypertension, lung diseases, heart disease, stroke, and cancer) and intra-familial correlation structure. The mean age of participants at study entry was 71.7 ± 16.3 years (range, 32-110 years; 44.4% male). A total of 1147 deaths occurred during an average 11 years of follow-up (25295 person-years). Higher serum adiponectin was associated with increased mortality even after adjusting for several potential confounding factors (Hazard ratio [95% CI]: 1.19 [1.12, 1.27]; $P < 0.0001$). Consistent with prior studies and contrary to its beneficial metabolic properties, higher adiponectin level was associated with greater all-cause mortality among long-lived individuals and their offspring. Further studies are needed to assess the potential mechanisms underlying this paradoxical association.

DETERMINANTS OF QUALITY OF LIFE IN COMMUNITY-DWELLING OLD ADULTS

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Background: Quality of life (QoL) has been regarded as a critical predictor of successful aging in gerontological research. Aim: The aim of this study was to examine the associations between physical activity, muscle strength, body composition, physical-/cognitive function and disease with quality of life community-dwelling older adults. Methods: Participants (N=225, 73.7±5.7yrs, 58.2% female) from the Reykjavik capital area in Iceland took part in this cross-sectional study. Socioeconomics, QoL, body composition, muscular strength, timed up and go test (TUG), six minute walk for distance (6MWD) and disease related information were measured. Fasting blood samples were analyzed for routine clinical measures. Results: In our subjects, only 19.1% had QoL below the age and gender corrected norm score of 50. A simple comparison between subjects with QoL below 50 vs subjects with a score above 50 indicated that participants with higher QoL had higher physical and cognitive function, higher muscular strength, lower blood glucose, exercised more and used a lower number of medicines. Differences in education, smoking, alcohol consumption, dietary intake and gender distribution were not significant. According to age and gender corrected linear models, TUG ($B = -0.54, P = 0.022$), number of drugs ($B = -0.67, P = 0.018$) and fasting glucose ($B = -0.96, P = 0.025$) were the strongest independent correlates of QoL. In the models insulin/glucose and TUG/6MWD were interchangeable. Conclusion: Physical function, number of drugs and glucose metabolism are independently related to QoL and represent therefore potentially modifiable targets for future interventions in order to improve QoL in community dwelling old adults.

LIVING ALONE IS ASSOCIATED WITH POORER PHYSICAL FUNCTION AND BONE MINERAL DENSITY IN ICELANDIC OLD ADULTS

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Background: Loneliness and living alone have been significant public health concerns among older adults given their association with a wide range of adverse health outcomes. Aim: The aim of this study was to examine whether living alone is associated with physical function and bone health in community-dwelling older adults. Methods: This was a secondary analysis of existing cross-sectional data of old adults (N=182, 73.7±5.7yrs, 58.2% female) from the Reykjavik capital area in Iceland. Information on socioeconomics, health, dietary intake and physical function was collected. 25-hydroxy-vitamin D (25OHD) and bone mineral density (BM) were grouped retrospectively into "living alone" and into "in cohabitation". Results: Of our subjects, 76.4% were in cohabitation and 23.6% lived alone. Participants who lived alone were older (74.5 ± 5.6 vs. $72.1 \pm 5.0, P = 0.008$) and more often female (74.4 vs. $53.2\%, P = 0.014$), but there were no differences in education, smoking, number of medications, physical activity (PA) or body mass index (BMI). According to age and gender corrected analyses, participants in cohabitation had higher grip strength (6.2 ± 2.4 lb, $P = 0.011$), higher 25OHD (13.1 ± 6.3 nmol/L, $P = 0.037$) and higher BMD (z-score lumbar: $1.195 \pm 0.417, P = 0.005$; z-score femur: $0.421 \pm 0.219, P = 0.054$; z-score total: $0.846 \pm 0.290, P = 0.004$). Statistical correction for PA, BMI, education and fish oil intake did not change the results. Conclusion: In comparison to old adults who live in cohabitation, Icelandic old adults who live alone have poorer physical function, lower 25OHD and lower BMD, which increases their risk for wrist or hip fracture. These differences between groups were not explained by physical, dietary or social confounding variables.

POLYPHARMACY IN DIABETIC PEOPLE: EVIDENCE FROM THE ENGLISH LONGITUDINAL STUDY OF AGEING (ELSA)

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Diabetes among older people is becoming more common worldwide, and usually accompanied by polypharmacy. However, the role of polypharmacy in older people with diabetes remains uncertain. A nationally representative cross-sectional study, ELSA 2012/2013, was used and 7729 participants aged 50-109 were investigated. Polypharmacy was defined as taking five to nine long-term used medications daily for chronic diseases or chronic symptoms, while using ten or more medications was excessive polypharmacy. The presence of illness was defined as either self-reported diagnosis or being prescribed specific medications for the condition. Data showed the prevalence of polypharmacy was 21.4%, and only 3% was excessive polypharmacy. 51.6% of diabetic people reported polypharmacy and 10.2% excessive polypharmacy. These rates were significantly higher than the 16.4% polypharmacy and 1.8% excessive polypharmacy among people without diabetes ($p < 0.001$). Among people with three or more

comorbidities, polypharmacy was present in 61.5% of people with diabetes, compared with 36.0% in people without diabetes. Significant risk factors for polypharmacy were diabetes (Relative-risk ratios/RRR=4.06, 95% CI 3.38, 4.86), older age (RRR=1.02, 95% CI 1.01, 1.03), male (RRR=0.64, 95% CI 0.55, 0.75), more comorbidity (RRR=2.46, 95% CI 2.30, 2.62), living with a partner (RRR=1.20, 95% CI 1.01, 1.42), and less wealth (RRR=0.93, 95% CI 0.87, 0.98). However, age, cohabitation, and wealth were not significantly related to excessive polypharmacy. Diabetes and the number of comorbidities were predominant risk factors for excessive polypharmacy. Current evidences confirmed both health condition and socioeconomic status were associated with medication use in older adults.

LONGITUDINAL RELATIONSHIP BETWEEN ENERGY UTILIZATION AND PHYSICAL AND COGNITIVE PERFORMANCE AS A FUNCTION OF AGE

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Energy utilization, which becomes more inefficient with age and is measured by a ratio of energy-cost-to-energy-capacity ("cost-ratio"), has been associated with functional decline. However, the interplay between longitudinal changes in energy efficiency and physical/cognitive functioning remains unclear. We investigated this relationship in 1020 participants of the Baltimore Longitudinal Study of Aging (baseline age: 68.9 (IQR: 59.8, 80.5), male: 44.7%). In linear mixed effects models adjusted for baseline age, sex, and height, an increasing cost-ratio was associated with faster decline in usual gait speed among those aged 50-64 years (beta = -0.20 m/s, p = 0.003), and ≥65 years (beta = -0.16 m/s, p less than 0.001), but not those less than 50 years (beta = -0.22 m/s, p = 0.178). In models adjusted for baseline age, sex, race, and years of education, higher cost-ratio was associated with faster declines in executive function, as measured by time to finish Trail B, among those aged ≥65 years (beta = 22.96 seconds, p = 0.020), but not <50 years (beta = -13.65 seconds, p = 0.557) or 50-64 years (beta = -15.61 seconds, p = 0.353). Together, these results suggest that energy utilization becomes more inefficient in the two to three decades prior to change in physical and cognitive functioning, implying it may act as an early marker of physiological aging. Further research is needed to understand the drivers of energy inefficiency, which may shed light on the biological mechanisms contributing to these declines.

SENSITIVITY OF SELF-REPORTED COMORBIDITIES COMPARED TO MEDICARE CLAIMS IN OLDER ADULTS WITH TRAUMATIC BRAIN INJURY

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Patient reported history of comorbid illness may be the only information available to the treatment team during an acute injury admission. Nevertheless, acute injury, particularly traumatic brain injury (TBI) which affects cognition, may decrease the patient's ability to accurately report medical history. Thus, the objective of this study was to evaluate the accuracy of patient-reported comorbid illness burden compared to the patient's Medicare administrative claims. Records of older adults treated for TBI at an urban level 1 trauma center 2006-2010 were linked to their Medicare administrative. Comorbidities were recorded in Medicare claims based on ICD9 codes and were reported in the trauma registry (TR) based on patient medical history recorded by a physician or nurse. Prevalence of each of the following comorbidities was calculated using information from the TR and claims: Alzheimer's disease and related dementias, chronic kidney disease, COPD, heart failure, diabetes, depression, stroke, and hypertension. Sensitivity of each patient-reported comorbidity was calculated using Medicare claims as the gold standard. We identified patient factors associated with accurate self-report using logistic regression. Among 408 older adults with TBI that linked to their Medicare claims, prevalence of each comorbidity was higher in Medicare claims compared to the TR, except for hypertension. Sensitivity for detecting these comorbidities using the TR ranged from 2% to 68%, with the highest sensitivity observed for hypertension. Older age and race were predictors of less accurate reported medical history. Reconciling self-reported patient history of these comorbidities with those reported in claims can better inform decisions regarding treatment.

ASSOCIATION BETWEEN GRIP STRENGTH AND COGNITIVE FUNCTION AMONG COMMUNITY-DWELLING OLDER ADULTS

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Background: Decline in both physical function and cognition among older adults has been associated with increased risk of dementia. Physical activity (PA) is beneficial for the improvement of both physical and cognitive function. The purpose of the study was to investigate the association between baseline physical function and cognitive function after 12 weeks of resistance training among older adults. Methods: Two hundred and thirty-seven community-dwelling older adults (N=237, 73.7±5.7 years, 58.2% female) participated in a 12-week resistance exercise program (3 times/week; 3 sets, 6-8 repetitions at 75-80% of the 1-repetition maximum), designed to increase strength and muscle mass of major muscle groups. Body composition, physical activity status, grip strength, cardiovascular risk factors, 6 minutes walking distance (6MWD), and Mini-Mental State Examination (MMSE) were measured at baseline and endpoint. The linear regression model was used to examine the association. Results: