with activities of daily living. Using the 2011-14 National Health and Nutrition Examination Survey (NHANES), we selected five self-reported hand-related functional limitations to classify older adults reporting one or more limitations versus those with no limitations. We identified 2,064 older adults (age≥65), 31% of whom reported a hand-related limitation. Odds ratios were used to assess the association between grip strength quartile and the likelihood of a hand limitation while controlling for sex, race/ethnicity, education level, income, and pain. Receiver operator curves were used to evaluate the degree to which grip strength discriminates between those with limitations versus those without. Older adults with very low grip strength (lowest quartile) were more likely to have at least one limitation (OR:6.1, 95% CI:3.2,11.8) than those with high grip strength (highest quartile). However, self-reported hand limitations were associated with lower grip strength, it was a relatively poor predictor of hand impairments among older adults. This study suggests grip strength may not predict hand function as well as previously thought. Better assessments are needed to adequately evaluate upper extremity impairments to help older adults maintain functional independence.

RESISTANCE TRAINING IMPROVES MOBILITY DISABILITY IN COMMUNITY-DWELLING OLDER ADULTS: A META-ANALYSIS

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Mobility disability is the impairment in function that affects the performance of daily tasks due to declines in physical function. Exercise interventions, particular resistance training, may have a positive impact on mobility disability, but the evidence for the effects of resistance training in older adults with mobility disability has not been previously systematically reviewed. This study was a systematic review of evidence related to resistance training on physical function for adults over 65 years of age with mobility disability. Four databases (PEDro, MedLine, Ovid, Web of Science) were searched from inception to February 2, 2021 for randomized controlled trials. Twenty-four articles from 22 studies (3,656 participants) were included in the review. Mean participant age ranged from 63-87 years and exercise interventions ranged from 10 weeks to 12 months in duration. Greater changes in 6-minute Walk Test (6MWT) distance (n=638, p<0.0001; mean difference (MD) 16.1 metres; 95%CI 12.3-19.9), lower extremity strength (n=785, p<0.0001; standard MD 2.01; 95%CI 1.27-2.75) and usual gait speed (n=2,106, p<0.001; MD 0.05 metres/second, 95%CI 0.03-0.07) were seen with resistance training as compared to control. These results were maintained if resistance training was a sole intervention or a component of a multi-component program. Sensitivity analysis based on risk of bias concerns did not change results. This review demonstrates that resistance training improves walking capacity, strength and walking speed in community-dwelling older adults and may facilitate aging in place. Since improvements in strength and gait speed contribute to independence, our results indicate highly beneficial outcomes for older persons.

SEX DIFFERENCES IN POWER DECREMENT IDENTIFIED ACROSS THE LIFESPAN

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Muscular power has been shown to be a significant predictor of physical function in older adults, but assessments of power have traditionally been performed in movements not specific to activities of daily living (ADLs). Recent research examined power in the context of ADL-specific movements, but it is unclear how ADL-specific lower-body power differs over lifespan in males and females. This investigation sought to describe ADL-specific power decline across the lifespan and analyze differences between the sexes. Adults (n = 557) aged 18-89 volunteered and were divided into age cohorts (18-30, 50-59, 60-69, 70-79, and 80-89 years). Participants performed a sit-to-stand (STS) task with as much velocity as possible while connected to a linear position transducer (LPT). The LPT calculated average and peak power. The average result of 5 individual STS trials was analyzed for each of the power variables. The first significant decrement in average STS power (p < .01) was observed at an earlier age cohort in males than females (60-69 in males vs. 70-79 in females). The per decade magnitude of power decrement after age 60 was larger in males than females in both absolute magnitude and percent decrease (11.74 vs. 10.09% decrease per decade). As power and physical function are correlated, this may have implications for the rate and age of functional decline in males. Additionally, understanding the differences in ADL-specific power decline between males and females gives clinicians and health professionals valuable information for developing preventative fitness paradigms specific to members of a given sex.

STIMULATING A MATURE BODY’S DEFENSE SYSTEM BY MAINTAINING PHYSICAL ACTIVITY: A LITERATURE REVIEW

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This review provides summary of research findings on the effects of exercise for changes in the immune system most associated with aging. Immunosenescence is identified as an immune dysregulation with aging that leaves an older adult susceptible to infections and a host of immune-related disorders. Extrinsic modulators of immunosenesence include pathogens, mental stress, nutrition, and exercise. Moderate short acute exercise over time enhances the immune system. Heavy exertion or prolonged exercise bouts may contribute to immunosenescence. In one study, a J-curve result was identified for upper respiratory tract infection. A moderate exercise workload was associated with a 40-50% decrease in upper respiratory tract infections while a 2-6-fold increase was identified among individuals consistently completing heavy exertion. Transient increases of the inflammatory markers of C-reactive protein and Interleukin-6 are noted.
Studies suggested that people with low vision are more likely to have worse sleep quality and less frequent participation in physical activities compared with people with better vision. Studies also showed that physical activities is a very important factor for one’s sleep. However, there is relatively little research on the association between vision acuity, sleep, and physical activity. This study examines the relationships between vision acuity and sleep duration among middle-aged and older adults in the US, and the role of leisure-time physical activity in this relationship. Using nationally representative data from the National Health and Nutrition Examination Survey 2007-2008, a cross-sectional analysis on adults age 50 years and older was conducted (n=2,247). Visual acuity was assessed by participant’s vision of better-seeing eye (i.e., none, mild, moderate, and server visual impairment), and we measured sleep duration (i.e., short, average, and long duration) and leisure-time Physical Activity (i.e., inactive/insufficiently active and sufficiently active). Descriptive analysis showed that 31.06% of older adults experienced moderate or severe visual impairment, and 46.81% respondents experienced abnormal sleep duration. Multinomial logistic regression analyses showed that compared to people without visual impairment, people with moderate or severe visual impairment were more likely to have longer sleep duration than normal sleep duration (OR, 1.62, p<0.05). Leisure-time physical activity was not found to significantly mediate the relationship between visual acuity and sleep duration. Other variables were controlled in the models. Findings suggest that US adults age 50+ with low vision are at greater risk of experiencing abnormal sleep duration.

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POLICY, FINANCING, AND SOCIAL SERVICE DELIVERY

A POLICY MAPPING ANALYSIS OF THE U.S. CONGRESSIONAL APPROACH TO MEDICAL AID-IN-DYING

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Oregon was the first state to legalize medical aid-in-dying (MAID), in 1994. Since then eight states and Washington, DC have legalized MAID through legislation. Despite literature exploring the legal and ethical aspects of MAID, very little research examines MAID policy at the federal level. This study aimed to 1) examine the objectives of MAID legislation introduced to the US Congress, and 2) investigate whether these bills increase or decrease access to MAID. This study used the congress.gov website to search for bills related to MAID introduced by the US Congress between 1994 and 2020. From the 98 bills identified, we excluded bills that were not directly related to MAID or were introduced in subsequent congresses. In total, 23 bills were retained and analyzed. The greatest number of bills aimed to restrict funds for MAID, followed by bills that sought to regulate the drugs used for MAID. Other bills prohibited the development of...