significantly improved processing speed over time (MD: -4.67, 95%-CI [34,41, 43,81], p=.023), whereas no changes (p=.051) were shown for participants with SPMS. No improvements were observed for the CG. Pairwise comparisons revealed no significant changes for verbal memory.
CONCLUSION: Compared to the CG, HIIT shows stronger impact on processing speed for RRMS. SPMS-type showed no changes. However, results should be interpreted cautiously, as the data set reveals no significant main effects for group and MS-phenotypes.
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Effect Af A Multicomponent Exercise Program On Functional Capacity And Cognitive Function In Frail Community Elders With Cognitive Decline

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(No relationships reported)

PURPOSE: Both frailty and mild cognitive impairment are prevalent issues among the geriatric population but have traditionally been evaluated on separate terms. Given the growing evidence that these two conditions might share a biological substrate, interventions aiming to improve physical function might as well induce benefits on cognitive function. The main objective was to test the effect of a multicomponent exercise program (VIVIFRAIL) on both domains in frail and pre-frail patients (according to Fried criteria) with evidence of mild cognitive impairment or mild dementia (Reisberg GDS 3 and 4).
METHODS: We performed a preliminary analysis of 96 recruited patients (mean age 83±5) from three Spanish hospitals (San Sebastian, Pamplona and Getafe). Subjects were randomized to a control or an intervention group, the last one undergoing a 12-week multicomponent exercise program (VIVIFRAIL). Changes in functional capacity were evaluated through Short Physical Performance Battery (SPPB), one leg press repetition maximum strength (1-RM) and Barthel index, and those in cognitive function with the Montreal Cognitive Assessment test (MOCA), verbal fluency and the Mini Mental State Examination (MMSE).
RESULTS: Significant improvement was found in the following variables: SPPB improved in 1.14 points (p=0.002), 1-RM improved in 12 points (p=0.035), MOCA test improved in 3.32 points (p=0.033) and verbal fluency improved in 2 points (p=0.028) in the intervention group versus the control group.
CONCLUSIONS: A multicomponent exercise intervention program using the VIVIFRAIL methodology improves both functional capacity and cognitive function in frail and prefrail elderly patients who exhibit mild cognitive impairment and mild dementia.

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Exercise Is Associated With Decreased Fracture Odds In Young Adults With Attention Deficit Hyperactivity Disorder

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Young adults with Attention Deficit Hyperactivity Disorder (ADHD) have higher fracture rates than healthy adults. While exercise is recommended for people with ADHD to alleviate hyperactivity-impulsivity, little is known about the relationship between exercise and fracture in this population.
PURPOSE: To explore the association between exercise and fractures in young adults with ADHD, not using medication.
METHODS: We performed a retrospective analysis of data of young adults with ADHD treated at the University of Alabama at Birmingham Health Systems. We selected a case if an individual was previously diagnosed with ADHD using ICD-10 code F90 and ages between 21 and 35 years. The comparison group were individuals with ADHD and have not had a fracture within the same age limits. The outcome variable was whether a patient with ADHD diagnosed with a fracture or not during this period. Exercise files included data about exercise status (i.e., yes or no), frequency (i.e., low, moderate, or high), and type (i.e., aerobics or non-aerobics). Exercise assessment was within the year before the fracture date for fracture group and within the year before data acquisition for the non-fracture group. We ran a multivariable logistic regression analysis to test the association between fractures and 1) exercise status, 2) exercise frequency, and 3) exercise type, controlling for sex. We analyzed the data using STATA SE 15.1.
RESULTS: Our analyses included 296 persons with a mean age of 27.29 ± 4.17 years for the comparison group and 28.0 ± 3.58 years for the fracture group. The mean age of fracture in the fracture group was 25.09 ± 3.45. Also, the logistic regression that was controlled for sex, showed that individuals who exercised had significantly lower odds of having a fracture compare to those that reported no exercise [OR: 0.14, 95% CI: 0.08, 0.27]. Of those, females compared to males, were also significantly associated with sustaining fewer fractures, controlling for exercise status [OR: 2.86, 95% CI: 1.53, 5.35]. Finally, exercise frequency and exercise type were not significantly associated with fracture risk.
CONCLUSIONS: Engaging in exercise might decrease the odds of sustaining a fracture in young adults with ADHD. Exercise needs to be studied more in young adults with ADHD to determine how exercise may protect against fractures.

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Physical Activity Is Critical To Preserve Cognitive Function In Nephrology Patients

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Chronic kidney disease (CKD) associates with earlier onset of cognitive impairment. Physical activity (PA) improves neuronal plasticity and cognitive function among older adults. However, limited data exist exploring the effect of PA on cognitive function in CKD patients.
PURPOSE: To investigate the effect of regular physical activity on cognitive function in CKD patients.
METHODS: We analyzed 68 patients with CKD admitted to a Midwestern hospital between January 2017 and July 2018. All subjects provided a health history, had a comprehensive metabolic panel with estimated glomerular filtration rate (eGFR), and reported whether they engaged in regular physical activity (PA). Cognitive impairments, including dementia, Alzheimer's, and Parkinson's disease were documented. Independent-samples t-tests and chi-squared tests compared patient profiles between sedentary and active patients. Logistic regression analyses tested the effect of PA on cognitive impairments holding constant other significant predictors.
RESULTS: Patients were 64.7 ± 17.4 years old, had an eGFR of 24.7 ± 13.8 mL/min, 66.2% were sedentary, and 25.0% had a cognitive impairment. Older subjects were more likely to have a diagnosis of cognitive impairment (p=0.051) and the prevalence was higher in sedentary patients (33.3%) than in those who were physically active (8.7%; p=0.026). Holding constant the age of the patient and the stage of CKD, engagement in PA shared a trending association with mental impairment (p=0.056), predicting a 79.8% reduction in the likelihood of diagnosis (Pseudo R^2 = 0.187; 95% CI of OR: 0.039 to 1.040). Similarly, controlling for eGFR rather than CKD stage, the significance of PA as a predictor remained stable (p=0.057; 95% CI of OR: 0.039 to 1.052).
CONCLUSIONS: Patients with CKD experience a higher risk of cognitive impairment than age-matched controls. In our sample, engagement in regular physical activity demonstrated a protective effect, and sedentary behavior influenced diagnosis more than age.