independently perform activities of daily living (ADL). This quasi-experimental controlled trial aims to analyze the effects of a 6-month MT intervention on functional capacity of individuals diagnosed with NCD. Forty-three subjects (N Major NCD: 36) participated in the Body&Brain Project and were subdivided in exercise group (EG; N: 23; 75.09 ± 5.65 years; age range: 61-83) or a control group (CG; N:20; 81.90 ± 5.95 years; age range: 70-89). The EG was submitted to bi-weekly exercise sessions, and the CG received monthly recreation sessions. At baseline and at post-intervention Timed-Up-and-Go (TUG), 6-meters Walk Speed and Handgrip tests were applied to evaluate lower body mobility, walking speed and handgrip strength, respectively. Results from linear mixed models revealed a statistically significant interaction between group (intervention vs. control) and time for TUG and walk speed test, but not for handgrip strength. The 6-month MT intervention improved lower body mobility and walking speed of older adults diagnosed with NCD, which might potentially impact ADL independence and quality of life. Trial registration: ClinicalTrials.gov - NCT04095962. Supported by FCT: "Body and Brain" (POCI-01-0145-FEDER-031808), CIAFEL (FCT/UIDB/00617/2020), and Ph.D. Grants (SFRH/BD/136635/2018) to FM and [2020.05911.BD] to DB.

DUAL-TASK COSTS IN GAIT SPEED DIFFERS ACROSS AGE GROUPS

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With age, there are simultaneous reductions in gait speed (GS). This decrease in GS has been associated with an increased fall risk and negatively impacts independence. Further, GS naturally declines with the addition of a secondary stimulus (i.e., cognitive requirements). Combined, these decrements can be additive in nature potentially leading to robust declines with advancing age. Therefore, the aim of this study was to examine age-related effects of dual-task cost (DTC) while walking. Adults (N = 145), over the age of 45 years, completed two walking trials for each GS condition: habitual (HAB) and fast (FST), with and without a DT (i.e., counting backwards by serials of three). Subjects were classified into four age groups: youngest-old (YG ≤ 64 years, n = 24), young-old (YO, 65-74 years, n = 46), middle-old (MO = 75-84 years, n = 54), and oldest-old (OO ≥ 85 years, n = 21). DTC was calculated and ANOVAs were used to assess differences between the groups. There was no difference in HAB DTC between the age groups (p=.61). However, there was a significant difference in FST DTC (p=.04) between the YO (M±SD: -14 ± -11%) and OO (M±SD: -24 ± -12%). These data indicate there was an age-related affect for fast dual-task cost, but not for habitual dual-task cost while walking. An increase in dual-task cost among the oldest-old may be associated with an inability to properly maintain a faster cadence while performing an arithmetic task which may be related to task prioritization.

EFFECT OF HIGH-INTENSITY INTERVAL TRAINING ON RHEUMATOID ARTHRITIS CD4+ T CELL OXIDATIVE METABOLISM

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Persons with rheumatoid arthritis (RA) have poor cardiorespiratory fitness and accelerated biological aging driven by systemic impairments in metabolism and inflammation. In this study of older RA participants, our goal was to identify the effects of a high-intensity interval training (HIIT) program on cardiorespiratory fitness and peripheral CD4+ T cell metabolism. We isolated CD4+ T cells from peripheral blood mononuclear cells in sedentary female RA participants (n=6; age=64.0+/-6.3 years) who underwent cardiopulmonary exercise testing and phlebotomy before and after 10 weeks of HIIT. HIIT improved RA cardiorespiratory fitness by 6.5+/-6.0% (pre-HIIT VO2 peak=25.1+/-5.1 ml/kg/min, post-HIIT VO2 peak=26.7+/-5.0; p=0.05). As measured by Seahorse XF Mito Stress Test, there were no significant mean changes in CD4+ T cell oxidative (oxygen consumption rate (OCR); pmol/min) or glycolytic (extracellular acidification rate (ECAR); mpH/min) metabolism, however there was large interindividual variability. RA peripheral CD4+ T cells preferred glycolytic metabolism (pre-HIIT mean basal OCR/ECAR ratio=0.78+/-0.13 pmol/mpH), while HIIT non-significantly shifted cellular preference toward oxidative metabolism (post-HIIT mean basal OCR/ECAR ratio=0.86+/-0.16; p=0.30). Increases in RA cardiorespiratory fitness following HIIT were significantly associated with increases in RA peripheral CD4+ T cell OCR/ECAR ratio (Spearman's rho=1.0, p<0.001) and basal and maximal respiration (rho=0.89, p=0.02 for both). Additionally, increases in CD4+ T cell mitochondrial ATP-linked respiration were significantly associated with increased quantities of circulating naïve CD4+CCR7+CD45RA+ T cells (rho=0.89, p=0.02). Our findings suggest that targeting cardiorespiratory fitness may be key in modulating T cell specific oxidative metabolism and function to prevent immunosenescence in older patients with chronic inflammatory diseases.

EFFECT OF VIDEO ASSISTED HOME-BASED EXERCISE INTERVENTION ON FALL RISK AND GAIT PARAMETERS IN OLDER ADULTS IN INDIA

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Countries across the globe recommended isolation to protect older adults from COVID-19 infection. However, this led to decreased mobility and physical inactivity potentially increasing their risk of fall. The study was conducted in a group of 88 older adults between 60-74 years with known gait impairments and high fall risk. The participants were part of our cohort study on fall prevention program. Fall risk and gait impairments were measured using wearable sensors during the Timed-up and go test (TUG) at baseline. Using technology, a 16-week video assisted home based exercises intervention was delivered to reduce fall risk and improve gait parameters. The intervention consisted of flexibility, strengthening, balance and gait training exercises given