

Effects of two physical training programs on the cognitive status of a group of older adults in Chile

Quezada, H.C.

Martínez-Salazar, C.

Fuentealba-Urra, S.

Hernández-Mosqueira, C.

Garcés, N.A.

Rodríguez-Rodríguez, F.

Concha-Cisternas, Y.

Molina-Sotomayor, E.

Abstract

Introduction: The effect of two physical training methods on older adults should be investigated in greater depth and its results shared with the community. **Objective:** To determine the effects of two types of physical training on the functional features associated with the cognitive state and the effect on a physiological mediator of growth hormone (IGF-1) in older women. **Material and Methods:** Quasi-experimental study that included 12 weeks of training in two groups divided into resistance and aerobic training. The study included a population of 113 women aged 69.39 ± 6.48 years from Talcahuano, Chile. All participants were randomly assigned to either group. The MINIMENTAL test was used to examine the executive functions of cognitive state and blood concentration of IGF-1, which was also used to examine neurotrophic factors. For the assessment of physical condition, an indirect test was used for the maximum mass displaced in one repetition (1RM) by the limbs and the TM6 test to estimate maximal oxygen consumption. **Results:** Significant differences between the groups with respect to the total score obtained in the MINIMENTAL test ($EG1 = 28.13 \pm 2.26$; $EG2 = 28.57 \pm 1.83$ and $CG = 23.47 \pm 2.80$; ANOVA; $p = 0.000$) were observed. A post hoc analysis revealed no significant differences when examining executive functions individually between groups (Bonferroni; $p > 0.05$). An increase in the neurotrophic factor IGF-1 was also recorded in the training groups ($EG1 p = 0.014$ and $EG2 p = 0.005$). The pre-and post-test showed large differences in magnitude in the resistance training group ($ES = 0.9$; 20.41% change). **Conclusion:** Both workouts produce an overall improvement in the functions associated with cognitive status and increase blood concentrations of IGF-1 in older adults.

Author keywords

Aerobic capacity

Cognitive state

Muscular strength

Older adult