

Resumen

Vivimos en un mundo envejecido, dónde la esperanza de vida es cada vez más elevada. Factores como la mejora en la dieta, la actividad física y la educación han tenido un efecto positivo en la salud, convirtiéndonos en una población más longeva. Por lo que resulta relevante tratar el tema del envejecimiento con la importancia que requiere, tomando un papel activo en esta etapa de la vida. Uno de los mayores riesgos a la hora de envejecer es sufrir demencia. El presente trabajo tiene como objetivo ayudar a prevenir esta enfermedad, mediante el estudio de los beneficios del ejercicio de resistencia asociados a la función cognitiva. Para ello se llevó a cabo una revisión bibliográfica de artículos que trabajaban con mujeres y hombres mayores de 55 años con un diagnóstico de deterioro cognitivo leve. Las intervenciones tuvieron una duración de entre 12 semanas y 6 meses, con una frecuencia de 2-3 veces por semana. Fueron organizadas con grupos control y grupos experimentales. Estos grupos experimentales empleaban ejercicios de resistencia con: mancuernas, pesas en los tobillos, bandas elásticas y máquinas; así como también otro tipo de entrenamientos como el aeróbico. Mientras que los grupos control no realizaban ninguna actividad física. Los resultados de estos estudios, muestran la gran importancia que tiene el deporte en la salud, tanto física como mental. Se obtuvieron unas puntuaciones significativamente mejores en las pruebas de post-test realizadas en los grupos experimental frente al grupo control. El entrenamiento de resistencia ha mostrado ser uno de los ejercicios más eficaces para la prevención de la demencia. Se ha observado que los cambios positivos a nivel cognitivo durante la práctica de ejercicio, se mantienen en el tiempo protegiendo a la persona frente a enfermedades como la demencia.

Palabras clave: Cognición, ejercicio, resistencia, entrenamiento, envejecimiento, personas mayores

Abstract

We live in an ageing world, where life expectancy is increasing. Factors such as improved diet, physical activity and education have had a positive effect on health, making us a longer-living population. It is therefore relevant to address the issue of ageing with the importance it requires, taking an active role in this stage of life. One of the greatest risks of ageing is dementia. The present research aims to help prevent this disease by studying the benefits of endurance exercise associated with cognitive function. For this purpose, a literature review of articles working with women and men over 55 years with a diagnosis of mild cognitive impairment was carried out. Interventions lasted between 12 weeks and 6 months, with a frequency of 2-3 times per week. They were organised with control and experimental groups. These experimental groups used resistance exercise with: dumbbells, ankle weights, elastic bands and machines; as well as other types of training, such as aerobic. However, the control group did not exercise. The results of these studies show how important sport is for health, both physical and mental. Significantly better results were obtained in the post-testing of the experimental groups compared to the control group. Resistance training has proven to be one of the best and most effective exercises to prevent dementia. Positive cognitive changes during exercise have been found to be persist over time, protecting people against diseases like dementia.

Keywords: Cognition, exercise, endurance, training, aging, old people

EFFECTS OF RESISTANCE TRAINING ON COGNITION TO PREVENT DEMENTIA

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INTRODUCTION

Dementia is one of the most common diseases. The passage of time is one of the major risk factors for developing it. Mild cognitive impairment can be a precursor to dementia (Da Silveira et al., 2019). There is an impairment in brain tissue and in learning, memory and hippocampal neurogenesis as we age. (De la Rosa et al., 2019).

According to Marston et al. (2019), physical inactivity is one of the main reasons for cognitive impairment in older people. Sport may delay such impairment cognitive because it is closely related to this. Sport encourages angiogenesis, neurogenesis and synaptogenesis, as well as improving learning, memory and neuroplasticity (De la Rosa et al., 2019).

RESULTS

| RESEARCH | AGE | HEALTH STATUS | SAMPLE SIZE | INTERVENTION | DURATION | TOOLS | RESULTS |
|---------------------------|------|---------------|-------------|-------------------------|----------|--|--|
| Broadhouse et al. (2020) | ≥ 55 | DCL | 100 | 2-3 x 90 min per week | 26 weeks | MMSE, ADASCog, WAIS-III, COWAT | Improvement in cognition and protection against hippocampal degeneration. |
| Da Silveira et al. (2019) | ≥ 60 | DCL | 52 | 2 x 60 min per week | 24 weeks | MMSE | Improvement in cognitive function, muscular endurance, aerobic capacity and balance. |
| Fiatarone et al. (2014) | ≥ 55 | DCL | 100 | 2 x 60-100 min per week | 6 months | ADASCog, WAIS-III, COWAT, BAYER-ADL, List Learning Memory Sum, BVRT, SDMT | Improvement in cognition and maintenance of gains over 18 months. |
| Lü et al. (2016) | ≥ 65 | DCL | 45 | 3 x 60 min per week | 12 weeks | MMSE, MoCA, ADASCog, TMT-B, DST-F, DST-B, SDMT, Memoria Lógica I y II | Improvement in cognition and risk of falls as there is a benefit in mobility. |
| Mayros et al. (2017) | ≥ 55 | DCL | 100 | 2 x 60-100 min per week | 6 months | ADASCog, WAIS-III, COWAT, List Learning Memory Sum, BVRT, Immediate Memory I, Delayed Memory II, Speed and attention: SDMT | Improvement in cognition, strength and aerobic capacity. |

METHOD

IDENTIFICATION

Records identified in the PubMed database (n=523)

Records after applying exclusion criteria (n=42)

Records deleted as duplicates (n=6)

Records deleted for supplementation issues (n=5)

Records deleted for treating specific diseases (n=8)

Records deleted for entering other interventions (n=17)

Records deleted for age or gender inappropriateness (n=4)

Records included (n=2)

Total record (n=5)

Records deleted (n=481)

Additional records (n=3)

DISCUSSION

Endurance exercises are the most effective exercises for preventing dementia in people with mild cognitive impairment (Nagamatsu et al. 2012). However, it should be taken into account that the studies included in this research have not been carried out with the same type of exercise or the same intensity. It would, therefore, be appropriate to use a large sample size to study resistance exercise at the same volume and intensity besides to combine different types of exercise in the same intervention to be able to get the most out of each of them. Once the positive effects of resistance exercise have been demonstrated, it would be advisable to adapt it to the lives of older people.

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