Artículo científico

Título: Effects and optimal dosage of resistance training on strength, functional capacity, balance, general health perception, and fatigue in people with multiple sclerosis: a systematic review and meta-analysis.

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Abstract

Purpose: To analyze the effectiveness of resistance training programs (RTP) on strength, functional capacity, balance, general health perception, and fatigue for people with Multiple Sclerosis (MS) and to determine the most effective dose of RTP in this population.

Methods: Studies examining the effect of RTP on strength, functional capacity, balance, general health perception, and fatigue in MS patients were included. 44 studies were included. The meta-analysis, subgroup analysis and meta-regression methods were used to calculate the mean difference and standardized mean difference.

Results: Significant group differences were observed in knee extensor ($p = 0.01$) and flexor ($p < 0.001$), but not in 1-repetition maximum. Regarding functional capacity and balance, differences between groups, in favour of the RTP group, were found in the Timed Up and Go Test ($p = 0.001$), walking endurance, ($p = 0.02$) gait speed ($p = 0.02$) and balance ($p = 0.02$). No significant differences between groups were observed in fatigue or general health perception. The results regarding the optimal dose are inconsistent.

Conclusions: RTP improves strength, functional capacity, balance, and fatigue in people with MS.

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Implications for rehabilitation Resistance training is a valid strategy to improve isometric strength and functional capacity in MS patients.RTP using long durations (more than 6 weeks), high intensity (more than 80% 1-RM) and two-day weekly training frequency may be a correct stimulus to improve strength, functional capacity, balance, and fatigue

in people with MS.Trainers and rehabilitators should consider these indicators in order to maximize muscular and functional adaptations in this population.
Keywords: Resistance training; exercise; nervous system diseases; neurological disorder.