

Keywords: Aged, Risk Factors, Maximum Respiratory Pressures

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EFFECTIVENESS OF AEROBIC EXERCISE ON THE FUNCTIONALITY AND QUALITY OF LIFE OF CHILDREN WITH CEREBRAL PALSY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: The main alterations associated with cerebral palsy (CP) include impairments in body functions and structures, activity limitations and participation restrictions. Thus, the health of individuals with CP can be affected in all domains of the International Classification of Functioning, Disability and Health (ICF). Aerobic exercise showed beneficial results for this population. Most studies report its benefits on body structures and functions; however, the results regarding activity and participation are less explored. The literature does not have comprehensive systematic reviews addressing the benefits of aerobic exercise for individuals with CP in the three domains of the ICF.

Objective: To investigate the effectiveness of aerobic exercise on the functionality of children and adolescents with (CP). The effectiveness of aerobic exercise on quality of life (QoL) was verified secondarily.

Methods: A systematic review with meta-analysis was conducted, taking into account the recommendations of the Report Items Referenced for Systematic Reviews and Meta-analyses (PRISMA) statement. An extensive search for articles was carried out in the electronic databases PubMed, PEDro, Embase and CINAHL. This systematic review was registered in the PROSPERO International Prospective Registry (nr. CRD42021251361). The methodological quality and certainty of the evidence were assessed using the PEDro and GRADE scales (Evaluation Rating, Development and Evaluation of Recommendations). The effects of aerobic exercise were investigated with meta-analytical techniques.

Results: 15 randomized controlled clinical trials (RCTs) were included, with 414 participants. As for the methodological quality, a low risk of bias was revealed. Aerobic exercise was effective in improving aerobic capacity (standardized mean difference [SMD] = 0.81; 95% confidence interval [CI] = 0.16–1.47; $p < 0.002$; $I^2 = 68\%$), gross motor function (SMD = 0.70; 95% CI = 0.21–1.19; $p = 0.005$; $I^2 = 49\%$), mobility (SMD = 0.53; 95% CI = 0.05–1.05; $p = 0.03$; $I^2 = 27\%$), balance ($p < 0.05$), and participation (SMD = 0.74; 95% CI = 0.10–1.39; $p = 0.02$; $I^2 = 0\%$). Aerobic exercise did not prove to be more effective in terms of muscle strength, spasticity, gait parameters and QoL ($p > 0.05$). The certainty of evidence for most comparisons was moderate to low.

Conclusion: The results show that aerobic exercise improves aerobic capacity, gross motor function, mobility, balance, and participation, but it did not show significant effects on muscle strength,

spasticity, gait parameters and quality of life. The certainty of the evidence was moderate to low. Given the small sample size, heterogeneity may be underestimated, leading to uncertainties regarding effect estimates. New RCTs involving larger samples are needed for definitive conclusions to be reached.

Implications: Clinicians should cautiously replicate this intervention, as new studies with larger sample sizes and quality must be conducted.

Keywords: Cerebral palsy, Aerobic exercise, Randomized controlled clinical trial

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THE EFFECTS OF RESISTANCE EXERCISE AND ELECTROSTIMULATION ON PELVIC FLOOR STRENGTHENING IN PATIENTS WITH PROSTATE CANCER

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Background: The literature on exercise linked to electrical stimulation of the upper pelvic floor muscles in the treatment of urinary incontinence after radical prostatectomy is scarce and reports different techniques for the treatment of urinary incontinence. In this context of care for cancer patients, functional exercises and electrostimulation can act as additional therapies. Studies show positive effects of functional pelvic floor training in patients with urinary incontinence after prostate surgery. In addition, as a second treatment option is electrostimulation that can be used together with functional training or separately (LATORRE, 2020). Electrostimulation facilitates the contraction of the periurethral striated muscles by inhibiting the detrusor muscle and activating the sphincter (KAKIHARA CT, 2007). The structure that maintains urinary continence is the external urinary sphincter, urinary incontinence is a consequence of sphincter injuries of the less favorable urethrovaginal junction to maintain urinary continence, generating greater demand for the external urethral sphincter. To improve the effectiveness of the urethral sphincter, physical therapy treatment is recommended, which includes pelvic muscle training; functional electrostimulation together with indo-anal electrode; the two methods can be executed together or separately (KAKIHARA CT, 2007).

Objectives: To verify the effects of resistance exercise and electrical stimulation on clinical outcomes and quality of life of cancer patients undergoing prostatectomy.

Methods: The present study sought to analyze scientific articles based on a systematic literature review. The research focused on analyzing articles that addressed the terms involved in the construction of the study. They were consulted in the electronic databases SciELO, PubMed, Cochrane, Bvs for selection and review of articles originally published in English and Portuguese.

Results: Twenty published studies were summarized. Most studies demonstrate physiological and quality of life benefits. However, most of these studies have limitations because they are not randomized clinical trials or use small samples.