Objectives: The primary aim of this study is to evaluate how many sessions of cerebellar spinal tDCS associated with a gait training protocol a sample of individuals with ACS should receive until they stop showing improvements in the time, they can remain standing on one limb bottom. The impact of this intervention on measures of balance and gait performance will also be evaluated.
Methods: This is a pragmatic clinical trial protocol, in which 20 patients with different types of ACS will receive tDCS sessions associated with a gait training protocol with progressively greater difficulty. The tDCS will be applied for 20 min and intensity of 2mA, with the anode electrode positioned on the cerebellar region and the cathode on the thoracic region of the medulla (approximately T8). At each session, the time individuals manage to remain in unipodal support will be computed (less than three attempts). When the time in unipodal support is like that of age- and sex-matched healthy individuals, the protocol will be discontinued. Patients will also be evaluated before and after the end of the intervention using the Scale for the Assessment and Rating of Ataxia (SARA), dynamDynamic Gait Index (DGI), Minibest.
Results: It is expected that multiple sessions of cerebellar-spinal tDCS associated with gait training promote an increase in the time that each participant is able to remain standing on one leg independently, resulting in a more stable gait and better balance.
Conclusion: The study is under development. The project will be defended this semester and after approval by the institution's research ethics committee, the volunteer recruitment phase will begin.
Implications: This study will help physiotherapists who use tDCS in patients with SCA3 in choosing the number of sessions that should be used to obtain satisfactory results regarding balance and gait in this population.
Keywords: tDCS, Spinocerebellar ataxia, Balance

Conflict of interest: The authors declare no conflict of interest.

Acknowledgment: Not applicable.

Ethics committee approval: Not applicable.

https://doi.org/10.1016/j.bjpt.2024.100639

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BLADDER TRAINING IN THE IMPROVEMENT OF OVERACTIVE BLADDER SYMPTOMS: A SYSTEMATIC REVIEW OF RANDOMIZED CONTROLLED TRIALS

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Background: Bladder training (BT) is characterized by a programmed voiding regimen with gradually adjusted voiding intervals and is commonly used in the conservative treatment of individuals with overactive bladder (OAB).
Objectives: To investigate and update the literature on the effectiveness of BT treatment alone and/or combined with other therapeutic strategies that can promote improvement in OAB symptoms and quality of life and report adverse events.
Methods: The systematic review was performed in eight databases, including PubMed, PEDro, SciELO, LILACS, Cochrane Library, Web of Science, EMBASE and CINAHL. After selecting the titles, abstracts and full texts retrieved. To assess the risk of bias of the studies, the Cochrane RoB 2 tool and the GRADE system were used to determine all the evidence of the studies analyzed. The protocol of this study is available in the PROSPERO systematic review protocol registry database with the registration number (PROSPERO CRD42022301522).
Results: The search generated a total of fourteen randomized controlled trials (RCTs) included in the review. The total participants were 2,319 (men and women) from 9 countries. The minimum age of the sample was 18 and the maximum age was 80 years. RCTs featured BT isolated (n=12), BT + intravaginal electrical stimulation (IVES) (n=2), BT + DT (drug treatment) (n=5), DT (n=7), BT + Biofeedback (BF) + IVES (n=1), PFMT + BF (n=1), BT + PFMT + behavioral education/therapy (n=2), BT + PTNS (percutaneous tibial nerve stimulation) or BT + TTNS (transcutaneous tibial nerve stimulation) (n=1). To the meta-analyses BT combined with IVES in the short-term follow-up period promoted improvement in nocturia (DM: 0.89, 95% CI: 0.59-1.20), urinary incontinence (DM: 1.93, 95% CI:1.32-2.55) and quality of life (DM: 4.87, 95% CI: 2.24-7.50). Three RCTs were considered with a "High" risk of bias, nine studies with "Some concerns," and two with a "Low" risk. In the GRADE system, the RCTs showed very low, of evidence to the GRADE system.
Conclusion: BT combined with IVES showed favorable results for treating OAB in the short-term follow-up period. Thus, the use usingined with IVES is recommended for treating individuals with OAB.
Implications: For individuals with OAB treated with BT + IVES there is a report of reduced episodes of nocturia, urinary incontinence and improved quality of life in the short-term follow-up period. The methodological quality of the studies was the best possible for the moment; aspects of the currently available RCTs were analyzed to update the current literature. Most of the data in this review comes from moderate-sized RCTs of very low to moderate methodological quality, verified by GRADE, in addition to heterogeneous risk of bias across RCTs. The findings corroborate the recommendations of the societies guiding conservative treatment for OAB. BT should be offered in combination with IVES as supplemental therapy in conservative treatment to increase treatment efficacy in the short-term follow-up period.
Keywords: Bladder training, Rehabilitation, Overactive bladder

Conflict of interest: The authors declare no conflict of interest.

Acknowledgment: Thanks to the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brazil (CAPES) (Funding Code 001) and the Universidade Federal de Alfenas (UNIFAL-MG).

Ethics committee approval: Not applicable.

https://doi.org/10.1016/j.bjpt.2024.100640

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AUTOMATIC ROTATIONAL THERAPY IN MECHANICALLY VENTILATED INDIVIDUALS AND LONG STAY IN AN INTENSIVE CARE UNIT: SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Invasive ventilatory support and prolonged immobility in bed are predictive factors for the development of respiratory and musculoskeletal complications in critically ill patients, favoring

increased length of hospital stay, morbidity and mortality, and costs associated with long hospital stays.
Objectives: To evaluate the impact of automatic rotational therapy on length of stay in the intensive care unit (ICU) in mechanically ventilated patients.
Methods: Systematic review conducted from December to January 2023 with randomized clinical trials, following criteria reported in PRISMA (Preferred Reporting Items for Systematic Review and Meta-Analysis) registered in PROSPERO (CRD42022384258). The search strategy was built based on health sciences descriptors (DeCS), Medical Subject Headings (MeSH), keywords and synonyms most found in the literature. The search was carried out in seven databases: MEDLINE/PubMed, EMBASE, Scopus, Science Direct, Cochrane Library, CINAHL, and Web of Science. The eligibility criteria involved studies that evaluated automatic rotational therapy compared with changing the manual decubitus position during the length of stay in the ICU in individuals of both genders aged 18 years or older using invasive mechanical ventilation for a period. greater than 24 hours. There was no restriction on language or year of publication. The risk of bias was assessed using the Cochrane collaboration tool.
Results: 118 articles were identified, after excluding duplicates and reading in full, 9 were eligible, involving 679 participants. The number of individuals evaluated per article ranged from 27 to 124 in the control and intervention groups. For meta-analysis, four studies were included, totaling 323 participants. The standardized mean (SMD) difference was -0.03 days (95% CI -0.40, 0.35, p=0.90) between automatic rotational therapy and conventional recumbency, with no significant difference between groups with high evidence of overall heterogeneity (χ2 8.26, p= 0.04, I2 = 64%).
Conclusion: Automatic rotational therapy did not have a significant impact on the length of stay in the ICU in mechanically ventilated critical patients. Therefore, it is not possible to make definitive recommendations on this therapy, reinforcing the need for new randomized clinical trials to better answer the research question.
Implications: The development of this systematic review and meta-analysis enabled the expansion of knowledge about the possible benefits of automatic rotational therapy in critically ill patients, for future contributions to the scientific community and, due to the high heterogeneity between studies, it is shown as a field to be explored in future studies.
Keywords: Patient positioning, Ventilators, Mechanical, Intensive Care Units

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: UFPE PROPG, CAPES-Código 001, CNPq (403341/2020-5) e FACEPE (APQ-0249-9.08/20).
Ethics committee approval: Not applicable.

https://doi.org/10.1016/j.bjpt.2024.100641

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ACUTE EFFECTS OF DIFFERENT ISCHEMIC PRECONDITIONING PROTOCOLS ON NEUROMUSCULAR PERFORMANCE IN CROSSFIT PRACTITIONERS: "CROSSOVER STUDY"

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Background: CrossFit is a modality that is characterized by high-intensity intervals, providing practitioners with the development of skills that promote improved sports performance. Similarly, ischemic preconditioning (ICP) is a form of training that aims to optimize muscle performance by increasing tissue tolerance to episodes of ischemia followed by reperfusion.
Objective: To compare the acute effects of different PCI protocols on muscle performance and superficial thermal response in amateur CrossFit athletes.
Methods: This is a crossover study. The participants were 15 subjects (10 men and 5 women) of both genders, aged between 18 and 35 years, with no history of metabolic, cardiovascular, or locomotor system diseases with an Ankle Brachial Index (ABI) between 0.91 and 1.30 and who responded negatively to all items of the Physical Activity Readiness Questionnaire/PAR-Q. After selection, they randomly performed one of the following three protocols: 1) ischemic preconditioning with 2 limb ischemia cycles (PCI-2C); 2) ischemic preconditioning with 4 cycles of limb ischemia (PCI-4C); 3) control ischemic preconditioning (PCI-CONT). Isometric strength measurements of elbow and knee extensors were performed before and after (WOD) and infrared thermography, at baseline, after PCI and WOD. Data were analyzed using SPSS software (v. 20.0), adopting a $P \leq 0,05$. ANOVA (one way) was used to analyze the time of execution of the WOD and to analyze the isometric strength of the elbow and knee extensors, in addition to repeated measures ANOVA to compare the averages, normalized, of the temperatures throughout the moments of evaluation.
Results: No significant differences were found between the protocols regarding the WOD execution time (F:2;12=0.09; P=0.916), as well as for the isometric strength of elbow extensors (F:2; 12=0.248; P=0.781) and knee (F:2;12=0.827; P=0.439). For the upper, lower and facial ROI thermograms, no significant differences were observed between the protocols ($P>0.05$); however, there were significant differences between assessments ($P<0.05$).
Conclusion: The protocols behaved similarly in terms of execution time and isometric strength of elbow and knee extensors. However, the normalized temperature means decreased over the course of the evaluations.
Implications: Contribute to an improvement in neuromuscular performance in CrossFit practitioners, in addition to showing a greater understanding of the surface temperature of the skin after application of ischemic preconditioning and training.
Keywords: Blood flow restriction, Performance, Thermography

Conflict of interest: The authors declare no conflict of interest.
Acknowledgment: To family, employees, and volunteers.
Ethics committee approval: Ethics and Research Committee of the Health Sciences Center of the Federal University of Paraiba (CEP/CCS/UFPB), under CAAE 53658721.4.0000.5188 and opinion n°. 5.158.427

https://doi.org/10.1016/j.bjpt.2024.100642

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TRANSCRANIAL DIRECT CURRENT STIMULATION AND NEURAL MOBILIZATION IN INDIVIDUALS WITH SCIATICA: RANDOMIZED CONTROLLED TRIAL PROTOCOL

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Background: Low back pain is the leading global cause of disability and Years of Life lived with Disability. About 10% of these episodes are classified as specific, with an identified cause, and may be related to discopathies with neurological deficits, including low