education process to remain informed about the most current evidence that appears in the field of medicine.
Keywords: Evidence-Based Medicine, Scientific Evidence, Training in Medicine

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WHAT IS THE MOST COMPLETE OBSERVATIONAL METHOD OF ANALYSIS OF BIOMECHANICAL EXPOSURE IN THE CRITERIA USED?

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Background: There is a wide variety of observational methods for analyzing the biomechanical exposure of workers in the work environment. Valentim et al. (2023) performed a systematic review of these methods and identified 10 explicit observational methods of analyzing biomechanical exposure with high quality of evidence and good measurement properties. The lack of studies that analyze the criteria, the specificity and the way in which these methods evaluate the exposure factors, and their dimensions (frequency, intensity, and magnitude) stimulated this study.
Objectives: To present the characteristics and criteria of the 10 most observational methods with adequate reproducibility and validity measurement properties, and with acceptable quality of evidence.
Methods: This is an analytical and descriptive study of the 10 observational methods for analyzing the biomechanical exposure of workers identified in the systematic review by Valentim et al. (2023), being the most researched and with adequate properties for measuring reproducibility, validity, and acceptable quality. of evidence. Three professionals with knowledge and experience in using the methods carried out a weighted assessment, seeking to identify the main characteristics of each method (occupational task evaluated and main posture of analysis), in addition to data on risk factors, their dimensions and body segments of each method. Finally, the influence of each criterion on the risk exposure classification was evaluated, based on the partial and final scores.
Results: Among the evaluated methods, seven of them present characteristics and criteria that allow a general evaluation of the worker in any main posture. The most evaluated risk factors were joint position and range of motion. The EAWS method is the method that most evaluates biomechanical exposure factors (nine out of the ten listed). The ACGIH HAL TLV and RULA do not assess all biomechanical exposure factors. ROSA is the method that evaluates a greater number of body segments. The trunk and isolated segments, such as the shoulder and wrist, are present in the evaluation of seven of the ten methods. The EAWS, PATH, REBA, ROSA, and RULA methods assess the lower limbs in general. Most of the criteria (exposure factors and body segments) evaluated by the 10 observational methods have a great influence on the classification of risk exposure.
Conclusion: The EWAS, OWAS, PATH, QEC, REBA, RULA and SI methods evaluate any task in general. The ACGIH HAL TLV and ROSA methods are directed to specific tasks. The assessment of biomechanical factors and body parts vary between each method and the most complete and detailed observational method among all analyzed in this study is the European Assembly Worksheet (EAWS).
Implications: Getting to know the methods better is essential and will help both in choosing the most appropriate method for the analysis and in choosing more assertive preventive measures in the work environment. Contributing to the decision-making of professionals and favoring the reduction of work-related musculoskeletal disorders.
Keywords: Occupational Risk, Physiotherapy, Occupational Health

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ELECTROMYOGRAPHIC ACTIVITY OF THE GLUTEUS MAXIMUS DURING PILATES METHOD EXERCISES COMPARED TO THE SQUAT EXERCISE

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Background: Among the muscles worked in the Pilates method exercises, emphasis is placed on activating the Gluteus Maximus (GM), due to its role in pelvic stabilization during functional activities. An ineffective activation of the GM can contribute to lumbopelvic instability and generate overload on the lumbar spine and other joints of the lower limb. In this way, exercises with an emphasis on GM activation are essential for clinical practice in the prevention and rehabilitation of different musculoskeletal disorders, becoming part of the Pilates method and of conventional exercises.
Objectives: To compare the level of muscle activation of the gluteus maximus during Pilates method exercises in relation to conventional exercise.
Methods: This is a cross-sectional study. All participants signed an informed consent form. The following were eligible for the study: women between 18 and 30 years old; without the presence of degenerative diseases in the hip joints and history of injury or trauma in the lower limbs and lumbar spine. Pain in the pelvis and lumbar spine were considered as a criterion for non-eligibility. Personal and anthropometric data from the participants were collected, followed by an exercise protocol associated with the assessment of electromyographic signals from the GM. The Pilates method exercise protocol included: superman, bird dog and pelvic elevation. The squat exercise was performed as part of the conventional protocol. A familiarization of each exercise was performed, followed by three valid executions with an interval of 40 seconds between each repetition and five minutes between each set of exercises. There was a verbal stimulus in relation to the contraction of the GM muscle during the execution. Electromyographic data were performed during the four exercises using Surface Electromyography (EMG). The electrodes were positioned following the SENIAM rules. For the analysis of the electromyographic data, specific routines were used in a Matlab environment, with the mean value of the linear envelope of the three attempts of each exercise and

normalized by the activation peak. After verifying the normality of the data, the One-way Anova test was applied and a significance level of $\alpha<0.05$ was adopted.
Results: There was no statistically significant difference for GM muscle activation during the proposed exercises (α=0.715).
Conclusion: It is possible to conclude that the proposed exercises with an emphasis on the muscle activation of the GM both in the Pilates method and in the conventional exercise protocol, present the same magnitude of muscle recruitment.
Implications: The Pilates method has occupied a prominent place in the prevention and rehabilitation of musculoskeletal disorders of the lumbar spine and other lower limb joints. The squat exercise is also present in clinical practice in conventional rehabilitation protocols, and it was possible to conclude that it has the same muscle activation as the gluteus maximus muscle. Therefore, both methods can be applied as a way of activating and strengthening this musculature with the objective of lumbopelvic stabilization, mainly during functional activities.
Keywords: Electromyography, Exercise Therapy, Muscle Contraction

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EFFECTS OF STRENGTH TRAINING WITH BLOOD FLOW RESTRICTION AND ELECTROSTIMULATION ON MUSCLE STRENGTH AND ACTIVITY – STUDY PROTOCOL

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Background: Increasing muscle strength may allow an athlete to improve their performance while reducing the risk of injury. Blood Flow Restriction (BFR) has emerged as an alternative for increasing muscle strengh because it can promote physiological changes and hypertrophy with a lower degree of mechanical overload. When combined with Neuromuscular Electrostimulation (NME) it offers the possibility of hypertrophy with greater activation of motor units, potentially increasing the effects of BFR.
Objectives: To evaluate the effects of strength training with BFR combined with NME of the quadriceps muscle in physically active individuals on parameters of strength and muscle activation.
Methods: This protocol is a randomized clinical trial with a blinded evaluator for groups and statistical analysis. Eligibility criteria will be age between 18 and 35 years old; both sexes and physically active according to the International Physical Activity Questionnaire. The following criteria are not considered appropriate: Body Mass Index over 30; use of stimulants in the 24 hours before the examinations; risk factors for thromboembolism and hypertension. Anthropometric data will be collected, followed by blood pressure measurement and kirtometers. Subjects will be randomly divided into three groups: Blood Flow Restriction Group (BFRG), Blood Flow Restriction and Electrostimulation Group (BFREG) and Conventional Exercise Group (CEG). A Vascular Doppler will be used to measure Total Occlusion Pressure (TOP). Maximum Repetition Test (1RM) unilateral will be used to determine the load during exercise, with adjustment in four weeks. An isokinetic dynamometer in concentric/eccentric mode at two angular speeds will be uses to assess muscle strenght: 60°/s and 180°/s, and isometric strength by the 30s test at 30° and 60°. Surface Electromyography (EMG) will be used to record the electrical activity of the quadriceps muscles. The intervention protocol consists of four sets of 30, 15, 15, 15 repetitions in the chair for extension, with one minute rest between sets, a load of 30% 1RM and 50% of POT, with adjustment of 5% each week up 80% of POT. The BFREG follows the same methodology, with an asymmetric biphasic current, frequency of 50Hz and a pulse duration of 400us. In the CEG the exercise will be performed without intervention in three sets of ten repetitions at 70% of 1RM. The training lasts eight weeks and takes place twice a week, with reevaluation at the end of the training. The distribution of normality will be analysed by the Shapiro-Wilk test. To analyse the effect of group and the interventions, ANOVA for repeated measures and Bonferroni post test will be performed. The significant level adopted will be 5%.
Conclusion: It is reasonable to assume that BFR and the intervention associated with electrostimulation are superior to conventional training in terms of strength and muscle recruitment parameters.
Implications: Because BFR requires a reduced load and it has been hypothesised that its effects are similar to those of conventional training, BRF offers mechanical and physiological benefits. Reduced loading may produce the same results in terms of hypertrophy and increased muscle strength in individuals without joint overload and prolonged loading.
Keywords: Muscle Strength, Electromyography, Blood Flow Restriction Exercise

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EFFECTS OF TWO TELEREHABILITATION PROGRAMS FOR PEOPLE WITH KNEE OSTEOARTHRITIS: PRELIMINARY RESULTS OF A RANDOMIZED CLINICAL TRIAL

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Background: Physical exercise is among the main indications for non-surgical treatment for knee osteoarthritis (OA), however, people with the problem tend to reduce the practice of physical exercise over time, which is a great challenge for professionals who accompany them. An alternative for the maintenance and continuity of supervised physical exercise is to offer it remotely, using telecommunication technological resources for rehabilitation.
Objectives: To evaluate the effects of two telerehabilitation programs on pain, quality of life, functionality and adherence to exercises in people with knee OA.
Methods: This is a randomized, single-blind clinical trial, with pre- and post-intervention assessments and two groups: synchronous (GS), who performed an exercise program via video call through the WhatsApp messaging application; and asynchronous (GA), who