

before practice ( $p = 0.85$ ; effect size = 0.10) and participation in other sports ( $p = 0.10$ ; effect size = 0.15) are not associated with the occurrence of injuries in recreational BT practitioners.

**Conclusion:** The incidence of injuries in BT practitioners is relatively low and is not associated with training volume.

**Implications:** The results may contribute to the understanding of injuries in BT practitioners and indicate variables that do not need to be the focus of attention in injury prevention protocols in this population.

**Keywords:** Athletic injuries, epidemiology, injury prevention

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## MOBILITY, DYNAMIC POSTURAL BALANCE AND NEUROMUSCULAR CONTROL OF SOCCER PLAYERS WITH AND WITHOUT A HISTORY OF LATERAL ANKLE SPRAIN

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**Background:** Lateral ankle sprain (LAS) is one of the most common injuries in soccer and is associated with persistent functional deficits, affecting mobility, dynamic balance, and neuromuscular control. Despite its high prevalence, there is still a gap in understanding the long-term implications of LAS on the physical performance of young athletes. Assessing these parameters is crucial to optimizing rehabilitation strategies and injury prevention.

**Objectives:** To compare mobility, neuromuscular control, and dynamic balance in under-20 soccer players with and without a history of LAS.

**Methods:** This is an observational, descriptive, analytical, and cross-sectional study conducted with 75 under-20 athletes (46 with a history of LAS and 29 without). Data collection included anthropometric and functional assessments using the Cumberland Ankle Instability Tool (CAIT) and the Foot and Ankle Ability Measure (FAAM) questionnaires, as well as functional tests such as the Weight-Bearing Lunge Test (WBLT), Hop Test, and Y Balance Test (YBT).

**Results:** Athletes with a history of LAS showed significantly lower neuromuscular control and dynamic balance. The LAS group performed worse in the Triple Hop Test for the right lower limb (mean difference = -25.42 cm; 95% CI: -45.63 to -5.21;  $p = 0.018$ ; Cohen's  $d = 0.67$ ). In the Y Balance Test, the anterior reach of the right lower limb was lower in the LAS group (mean difference = -2.91 cm; 95% CI: -5.78 to -0.04;  $p = 0.046$ ; Cohen's  $d = 0.54$ ). Additionally, ankle mobility, assessed by the WBLT, was lower in the LAS group (mean difference = -2.37°; 95% CI: -4.53 to -0.21;  $p = 0.031$ ; Cohen's  $d = 0.49$ ). The Cumberland Ankle Instability Tool questionnaire indicated lower stability in the LAS group for the right lower limb (mean difference = -2.38 points; 95% CI: -3.95 to -0.81;  $p = 0.003$ ; Cohen's  $d = 0.74$ ) and for the left lower limb (mean difference = -1.78 points; 95% CI: -3.01 to -0.55;  $p = 0.005$ ; Cohen's  $d = 0.61$ ). The Foot and Ankle Ability Measure questionnaire indicated poorer functionality in daily and sports activities ( $p < 0.05$ ).

**Conclusion:** The findings highlight persistent functional deficits in mobility, dynamic balance, and neuromuscular control among athletes with a history of LAS. These deficits may contribute to a higher risk of re-injury and impaired sports performance. Identifying these deficiencies allows for targeted interventions in rehabilitation, injury prevention, and performance optimization.

**Implications:** This study reinforces the importance of implementing preventive and rehabilitative strategies for young soccer players with a history of LAS. Addressing deficits in mobility, balance, and neuromuscular control may improve performance and reduce recurrence rates. Integrating these assessments into sports routines can enhance clinical decision-making in physiotherapy, supporting long-term athletic development and injury prevention programs.

**Keywords:** Ankle Injuries, Postural Balance, Motor Activity

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## WOMEN WITH PATELLOFEMORAL PAIN SHOW FUNCTIONAL DEFICITS WHEN COMPARED TO ASYMPTOMATIC WOMEN

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**Background:** Patellofemoral pain (PFP) is characterized by pain in the anterior region or around the patella during weight-bearing activities, being more prevalent in women. Its high recurrence rate can compromise the performance of daily activities. Functional tests are simple and low-cost tools widely used to assess functional performance in patients with musculoskeletal disorders. However, the functional deficit identified through these tests is still underexplored in the PFP population. Therefore, investigating whether functional tests can detect performance differences compared to asymptomatic individuals may be relevant to improve assessments in clinical practice.

**Objectives:** Compare the performance in functional tests between women with and without PFP.

**Methods:** Sixty women, aged between 18 and 35 years, physically active, participated in this study, divided into two groups: PFP ( $n = 30$ ) and control ( $n = 30$ ). Initially, anamnesis was performed to obtain personal data and eligibility criteria. Functional assessment was conducted through three tests. The forward jump test, in which the participant had to stand on one leg, jump as far as possible, and land without losing balance. The test was performed three times, and the best performance was considered for data analysis. The one-legged chair rise test, in which the participant had to rise from a chair and then sit back down using only the assessed leg, performing as many repetitions as possible in 30 seconds. The step-down test, in which the participant was asked to touch the ground with the heel of the non-tested leg while keeping the tested leg on the step, then return to the initial position, performing as many repetitions as possible in 30 seconds. For data analysis, an independent samples t-test was applied, with a significance level of  $p < 0.05$ .

**Results:** Women with PFP showed a deficit in functional performance in the forward jump test ( $p = 0.005$ ), step-down test ( $p < 0.001$ ), and one-legged chair rise test ( $p = 0.042$ ) compared to asymptomatic women.

**Conclusion:** Women with PFP show a decline in performance in functional tests when compared to asymptomatic women, which can be detected through clinical tests.

**Implications:** Functional tests should be incorporated into the assessment and monitoring of rehabilitation programs for women with patellofemoral pain, allowing for the identification of the level of impairment and the progression of functional capacity throughout the treatment. Furthermore, it is recommended that rehabilitation include exercises that simulate activities of daily living, aiming to improve functionality and the quality of life of these patients.

**Keywords:** Women, Functionality, Muscle Strength

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## MANUAL THERAPY IN THE BODYBUILDING: INTEGRATIVE REVIEW

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**Background:** Physiotherapy has several approaches and instruments that act in rehabilitation and pain relief. Among the resources to be used is manual therapy. Its use in sports is well known, including in bodybuilding, where it demonstrates benefits both in injury prevention and muscle recovery.

**Objectives:** To analyze the use of manual therapy in bodybuilding.

**Methods:** This is an integrative review, in which the search strategy was carried out according to the PICO strategy, being (P) Bodybuilders, (I) Manual therapy, (C) Control or other intervention, (O) Health and functional performance, and with the use of descriptors present in the Health Sciences Descriptors (DeCS/MeSH) and Medical Subject Headings (MeSH), in addition to complementary terms due to the absence of specific descriptors for this audience. Then, the search was carried out on the Pubmed, Cochrane, Web of Science, Scopus and Virtual Health Library (VHL) platforms, with no restrictions regarding time and language. The inclusion criteria were articles with a specific sample of bodybuilders and using at least one manual therapy technique. In parallel, the exclusion criteria were review studies, books, course completion papers, theses and monographs. After the bibliographic survey, the data were directed to the Rayyan software, in which duplicates were excluded, title and abstract screening and full-text screening were performed. The data from the selected articles were displayed in an Excel spreadsheet for analysis of the results.

**Results:** A total of 239 studies were identified, of which 6 duplicates were removed. Then, 3 articles were selected in the screening by title and abstract and in the end only 2 articles were included. Among the included studies, one quasi-experimental study and one randomized clinical trial were obtained, which analyzed different outcomes. Regarding the sample, there were different approaches, with one study focused on bodybuilders with chronic low back pain (n = 48) and another on male bodybuilders (n = 30). Among the manual therapy techniques used were massage (n = 2) and dry needling (n = 1), performed for 30 minutes. Among the tests, scales and assessment instruments, the following were observed: visual pain scale, visual analogue scale, modified Schober test, portable

goniometer, mechanical scale, blood sample by venipuncture, agility test, vertical jump displacement and maximum isometric torque test. It was possible to observe that dry needling demonstrated benefits mainly in relation to pain, while massage obtained advantages in relation to range of motion and in optimizing the athletes' performance.

**Conclusion:** Manual therapy can be an effective resource in the health and performance of bodybuilders. However, it should be emphasized that there are few studies available with this audience, and it is essential to carry out new research that investigates more techniques in different situations and outcomes.

**Implications:** Identifying the effectiveness of manual therapy in bodybuilding is essential for the practice of sports physiotherapists, who can use low-cost techniques capable of benefiting athletes in their daily lives and performance.

**Keywords:** Resistance Training, Physical Functional Performance, Musculoskeletal Manipulations

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## ACUTE EFFECTS OF MANUAL MYOFASCIAL RELEASE ALONE OR IN COMBINATION WITH INSTRUMENT OR PERCUSSION DEVICE ON DELAYED ONSET MUSCLE SORENESS

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**Background:** Amateur athletes frequently experience delayed-onset muscle soreness (DOMS), impacting training and daily activities. Myofascial release, a massage technique for DOMS management, can be performed manually or with instruments. Recently, percussion devices, such as massage guns, have gained popularity. While several studies have examined foam rollers for self-myofascial release, no research has compared physiotherapist-administered manual myofascial release with instrument-assisted or percussion-based techniques for DOMS treatment.

**Objective:** To evaluate the effects of a single session of manual myofascial release alone or combined with instrument-assisted soft tissue mobilization or a percussion device massager on DOMS in amateur athletes.

**Methods:** Randomized controlled trial. Amateur athletes were classified as "very active" according to the International Physical Activity Questionnaire (IPAQ), and pain reporting associated with exercise practice was included. Exclusion criteria included athletes with pain due to a previously diagnosed musculoskeletal injury and those unable to read and understand the questionnaire. Athletes were randomized into one of three groups: Manual Myofascial Release (MMR), Manual + Instrument-Assisted Soft Tissue Mobilization (MMR + IASTM), or Manual + Percussion Device Massager (MMR + PDM). An assistant researcher conducted the randomization process. Assessments were carried out by a trained evaluator blinded to group allocation. Initially, participants identified the muscle group experiencing pain. The evaluator then palpated the affected muscle group and asked the athlete to quantify their pain using the Visual Analog Scale (VAS) from 0 to 10. Following this assessment, a trained physiotherapist administered the assigned intervention. Each