

session lasted 40 minutes. The session was evenly divided for interventions combining manual therapy with another approach, with 20 minutes allocated to manual therapy and 20 minutes to the instrument/device intervention. Immediately after the session, the same evaluator reassessed pain levels using the VAS. Twenty-four hours later, the research team contacted participants, instructing them to palpate the painful area and self-report their pain score on the VAS. To assess normality, the Shapiro-Wilk test was applied. For group comparisons, repeated measures ANOVA and one-way ANOVA were used.

Results: A total of 159 athletes completed the protocol: 73 in the MMR group, 47 in the MMR+IASTM group, and 39 in the MMR+PDM group. There was a loss of 24-hour follow-up data in the last two groups due to non-responsiveness to the 24-hour evaluation. No significant differences were found between the three groups in baseline VAS scores: 4.63 for MMR, 4.79 for MMR+IASTM, and 5.59 for MMR+PDM ($p=0.099$). Immediately after the intervention, VAS scores were 2.30 for MMR, 2.34 for MMR+IASTM, and 5.28 for MMR+PDM. At the 24-hour follow-up, VAS scores were 2.38 for MMR, 2.82 for MMR+IASTM, and 4.44 for MMR+PDM. When comparing groups, no significant difference was found between MMR and MMR+IASTM ($p=0.714$), while both showed superior results compared to MMR+PDM ($p < 0.001$ for both comparisons).

Conclusion: MMR alone or in combination with IASTM yielded better outcomes than MMR combined with PDM in treating DOMS.

Implications: A percussion device should not be combined with MMR for DOMS management.

Keywords: myofascial release, myofascial pain, athlete

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

Funding: Not applicable.

Ethics committee approval: CAAE: 83112624.9.0000.5511.

Registration: Not applicable.

<https://doi.org/10.1016/j.bjpt.2025.101343>

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CONCURRENT VALIDITY OF MY JUMP LAB APP IN VERTICAL JUMP PERFORMANCE IN INDIVIDUALS AFTER ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION

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Background: Performance in vertical jump tests, such as jump height and the reactive strength index (RSI), are important metrics for clinicians to monitor during the rehabilitation of individuals following anterior cruciate ligament reconstruction (ACLR). Although force platforms are considered the gold standard for this type of measurement, their limited accessibility and high cost make them unsuitable for clinical settings. In this context, mobile applications, such as the My Jump Lab app, have emerged as potential alternative tools for jump assessment in clinical environments.

Objectives: To verify the concurrent validity of the My Jump Lab app compared to a force platform (gold standard) in assessing vertical jump performance in individuals who have undergone anterior cruciate ligament reconstruction.

Methods: A concurrent validity study following the Guidelines for Reporting Reliability and Agreement Studies (GRRAS). Individuals of both sexes who had undergone ACLR and were eligible to perform jump tests between the sixth and twenty-fourth postoperative

month were recruited. Participants were instructed to complete an assessment form with clinical and anthropometric characteristics and then underwent a five-minute warm-up on a stationary bicycle. They performed two vertical jumps: single-leg vertical jump (SLVJ) and single-leg drop jump (SLDJ). A researcher not involved in the assessment randomized the limbs (operated and non-operated) to determine which limb the participant would start the tests with. The evaluation of jumps using the My Jump Lab app was conducted simultaneously with the force platform assessment (Bertec® Model FP4060-08-1000) by two blinded assessors, each responsible for analyzing the data from one instrument. The smartphone (iPhone 11) was positioned 1.5 meters from the platform with its lenses close to the ground. The jump height in SLVJ and SLDJ and the RSI in SLDJ were collected. Pearson correlation was used to analyze concurrent validity, and Bland-Altman plots were used to assess the agreement between the force platform and the My Jump Lab app.

Results: Eighty participants with ACLR were included in the evaluation. A total of 320 jumps were analyzed using the app. The jump height in SLVJ and SLDJ and the RSI in SLDJ assessed by the My Jump Lab app showed a very strong correlation with the jump height in SLVJ ($r=0.982$, $p < 0.001$) and SLDJ ($r=0.977$, $p < 0.001$) and the RSI in SLDJ ($r=0.972$, $p < 0.001$) assessed by the force platform. The agreement analysis using Bland-Altman plots did not reveal any systematic bias in the results obtained by either method.

Conclusion: The My Jump Lab app is a valid tool for assessing vertical jump performance in individuals who have undergone anterior cruciate ligament reconstruction.

Implications: Due to the high cost of gold-standard instruments, such as the force platform, mobile applications like My Jump Lab offer a more economical and accessible alternative for use in clinical practice.

Keywords: Anterior Cruciate Ligament Reconstruction, Functional Performance, Smartphone

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

Funding: Not applicable.

Ethics committee approval: No. 6.845.754.

Registration: Not applicable.

<https://doi.org/10.1016/j.bjpt.2025.101344>

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CORRELATION BETWEEN DORSIFLEXION AND JUMP PERFORMANCE IN BASKETBALL ATHLETES

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Background: Basketball requires high physical demand, including running, directional changes, and frequent jumping. Jump performance is a key determinant of athletic success, given the sport's specific demands. The jump phases include takeoff, flight, and landing, with the ankle joint playing a crucial role in energy transfer and impact absorption.

Objectives: To evaluate the correlation between ankle dorsiflexion and jump height in basketball athletes.

Methods: This cross-sectional observational study included male basketball players, excluding those with self-reported lower limb pain or injury. Ankle dorsiflexion was assessed using the Lunge Test, in which athletes performed maximal knee flexion while

maintaining heel contact with the ground. An inclinometer was positioned 15 cm below the tibial tuberosity to record measurements. The test was performed three times with 30-second intervals, and the average dorsiflexion of both limbs was used for analysis. Jump performance was assessed using a bilateral countermovement jump, measured with a Baiobit® inertial sensor placed at the S1-S2 vertebral level. Three jumps were performed with 30-second intervals, and the highest recorded value was used for analysis. Data normality was verified using the Kolmogorov-Smirnov test, and the correlation between variables was analyzed using Pearson's correlation coefficient. Statistical analysis was performed using SPSS 20.7.

Results: The study included 51 athletes (age: 20.7 ± 0.4 years; body mass: 78.1 ± 1.94 kg; height: 1.8 ± 0.1 m; BMI: 23.5 ± 0.4 kg/m²; basketball experience: 5.9 ± 0.3 years). A strong, significant positive correlation was observed between dorsiflexion and jump height ($r = 0.81$; $P < 0.001$).

Conclusion: Ankle mobility positively influences jump height in basketball athletes.

Implications: These findings suggest that physiotherapists working with basketball players should assess ankle mobility and incorporate strategies to enhance dorsiflexion in training and injury prevention programs.

Keywords: Physical Functional Performance, Ankle Joint, Correlation Measures

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

Funding: CAPES - Finance Code 001.

Ethics committee approval: No. 5.639.330.

Registration: Not applicable.

<https://doi.org/10.1016/j.bjpt.2025.101345>

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EFFECT OF ISCHEMIC PRECONDITIONING ON THE SUBJECTIVE PERCEPTION OF EFFORT DURING VELOCITY-BASED TRAINING IN BASKETBALL ATHLETES

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Background: Velocity-based training (VBT) is a precise approach that, by measuring movement velocity, allows for the precise prescription and monitoring of training volume and intensity. In this context, ischemic preconditioning (IPC) stands out as a non-invasive ergogenic method associated with improved sports performance. Studies indicate that IPC can influence neuromuscular and physiological variables, affecting the rating of perceived exertion (RPE). Given the role of RPE in regulating training load and physiological response, investigating its relationship with IPC in the context of VBT may provide valuable insights for optimizing sports performance.

Objectives: To analyze the acute effect of IPC on the RPE of basketball athletes during a training session using VBT.

Methods: This is an experimental, cross-over-designed study. The sample consisted of 24 junior basketball athletes (18.2 ± 0.4 years) randomly subjected to four experimental conditions with a wash-out period of 48–72 hours. IPC was applied bilaterally to the lower

limbs (four cycles of 5 minutes of total occlusion alternated with four cycles of 5 minutes of reperfusion) with varying rest periods, all followed by Smith machine squats (3 sets to failure at 50% 1RM): 1) CR15: 15-minute rest; 2) CR30: 30-minute rest; 3) CR45: 45-minute rest; 4) CC: IPC session (20 mmHg) without rest time. The Borg CR-10 rating of perceived exertion (RPE) scale was used to assess athletes' perceived effort. Data were analyzed using the Statistical Package for the Social Sciences (SPSS – 26.0), with a significance level of $P = 0.05$.

Results: The Friedman test identified significant differences in RPE between conditions and overtime ($P < 0.001$). Post hoc analysis with Bonferroni correction revealed significant differences between the first set of CR15 vs. the third set of CR45 ($P = 0.035$) and the third set of CR45 vs. the first set of CR30 ($P = 0.013$). Compared to the control condition, differences were also found between the first and third sets ($P = 0.044$) and between the first set of CC vs. the third set of CR45 ($P = 0.001$).

Conclusion: The CR45 condition elicited significantly higher perceived exertion compared to CC, CR15, and CR30. Additionally, in the CC condition, a progressive increase in RPE was observed throughout the experimental session, highlighting the significant impact of IPC on effort perception regulation during resistance training.

Implications: The rest period after IPC may directly influence RPE, affecting training load regulation and effort tolerance. These findings suggest that adjusting post-IPC recovery time can be a valuable strategy to optimize sports performance, prevent excessive fatigue, and enhance physiological adaptations, benefiting athletes and coaches in velocity-based training prescription.

Keywords: Velocity-based training, Ischemic preconditioning, Basketball athletes

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

Funding: CAPES - Finance Code 001.

Ethics committee approval: CAAE: 5.888.374; 5.807.986.

Registration: Not applicable.

<https://doi.org/10.1016/j.bjpt.2025.101346>

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DIAGNOSIS AND RISK FACTORS OF INJURIES IN WHEELCHAIR FENCING PARATHLETES DURING A NATIONAL CHAMPIONSHIP

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Background: Wheelchair fencing is a sport for para-athletes with physical disabilities. To minimize the impacts of disability, para-athletes are divided into three functional categories: A (highest functionality), B and C (lowest functionality). The sport emerged as a rehabilitation process but has evolved into a high-performance sport. With this evolution, para-athletes have begun to face a greater training load, which can increase the incidence of injuries. In this context, accurate identification of diagnoses and analysis of risk factors are essential for the implementation of preventive strategies.

Objectives: To identify the diagnosis and risk factors of sports injuries in wheelchair fencing para-athletes during a national championship.

Methods: This is a prospective, descriptive, cross-sectional study conducted with male and female wheelchair fencing para-athletes during the Brazilian Para-fencing Championship. The Sports Injury