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Effectiveness of Heated IASTM on Superficial Back Line of Fascia for Low Back Pain in Professional Male Rowers: An Experimental Trial

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ABSTRACT

Introduction: Low back pain is widely reported in rowing due to repetitive lumbar loading and posterior-chain demands during training and ergometer work. Instrument-Assisted Soft Tissue Mobilisation (IASTM) is used in sports physiotherapy to address myofascial restrictions and pain; however, evidence in rowing-specific populations and for heated IASTM applications targeting the superficial back line remains limited. Establishing short-term clinical effects may support evidence-informed rehabilitation strategies for performance athletes.

Aim: To determine whether a 2-week heated IASTM programme improves (1) low back pain intensity, (2) superficial back line/posterior-chain flexibility, and (3) rowing-specific performance in professional male rowers.

Materials and Methods: A total of sixty-eight (68) professional male rowers were available at the Chandigarh Sports Department Rowing Training Centre during the study period. From this population, 32 professional male rowers were selected and included in the study. Participants were recruited based on their professional rowing status and the presence of low back pain consistent with repetitive posterior-chain loading demands associated with rowing training. An experimental pre–post trial was conducted over 2 weeks (a total of 6 sessions for each included rower; 3 sessions/week). Outcomes were recorded at baseline (T0) and post-intervention (T2). Pain was measured using the Numeric Pain Rating Scale (NPRS), flexibility using the Sit-and-Reach Test (cm), and performance using a 500 m rowing ergometer test (time in seconds). Quantitative analysis was performed in SPSS using paired t-tests with $p<0.05$.

Results: All primary outcomes improved significantly from T0 to T2. NPRS decreased from 4.09±1.38 to 0.75±1.05 ($p<0.001$). Sit-and-Reach increased from 10.20±11.79 cm to 17.48±8.23 cm ($p<0.001$). 500 m ergometer time improved from 124.84±15.57 s to 116.81±12.79 s ($p<0.001$).

Conclusion: Heated IASTM was associated with clinically meaningful reductions in low back pain and significant improvements in posterior-chain flexibility and rowing performance over 2 weeks. Future controlled trials should confirm efficacy and assess the durability of effects.

Keywords: Instrument-assisted soft tissue mobilisation, Posterior-chain flexibility, Sports rehabilitation.

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