

Effect of Core Strengthening on Function, Grip Strength and Core Strength in Racket Sport Athletes with Lateral Epicondylitis

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ABSTRACT

Introduction: Lateral epicondylitis in racket sport athletes is widely managed through conventional physiotherapy targeting the distal elbow. However, the lumbopelvic core has been largely ignored in rehabilitation protocols. No randomised controlled trial to date has examined this.

Aim: The study aimed to determine whether integrating a structured, progressive core strengthening programme with conventional physiotherapy significantly yields greater improvement in functional disability, grip strength, and lumbopelvic stability in any racket sport athletes with lateral epicondylitis.

Materials and Methods: A parallel group, single-blind, randomised controlled trial was conducted. Fifty-two competitive racket sport athletes (18 to 40 years) with confirmed lateral epicondylitis and core stability deficit - defined as a pressure deviation ≥ 10 mmHg on the Sahrmann core stability test level 3 with the pressure biofeedback unit were included in the study. The experimental group (Group A, n=26) received a progressive 5-week core strengthening

program alongside conventional physiotherapy, while the control group (Group B, n=26) received conventional physiotherapy alone. Patient Rated Tennis Elbow Evaluation (PRTEE), Grip Strength (dynamometry) and SCST level 3 PBU deviations were assessed at baseline and week 5.

Results: There were statistically significant differences between pre-test and post-test results among all subjects ($p < 0.001$). The group of subjects A had better performance than group B on functional disability (PRTEE reduced by ~ 15 points; $t(50) = -8.761$, $p < 0.001$) and core stability (SCST PBU deviation reduced by ~ 7.38 mmHg; $t(50) = -8.94$). Grip Strength improved in both groups with no statistically significant difference.

Conclusion: Conventional physiotherapy with a targeted, progressive core strengthening program produces significantly superior improvements in functional disability and lumbopelvic stability, while grip strength increased equally in both groups.

Keywords: Functional disability, Kinetic chain rehabilitation, Sahrmann core stability test.

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