





# International Journal of Sport Studies for Health

Journal Homepage






## The Effect of Sportmetrics Soccer Training Program on Postural Control in Soccer Players with and without Previous Anterior Cruciate Ligament Reconstruction

Amir. Shamlou Kazemi<sup>1\*</sup>, Hasan. Daneshmandi<sup>1</sup>, Parisa. Sedaghati<sup>1</sup>, Yasin. Hosseini<sup>2</sup>

<sup>1</sup> Department of Sports Injuries and Corrective Exercises, Faculty of Physical Education and Sport Sciences, University of Guilan, Rasht, Iran.

<sup>2</sup> Department of Physical Education and Sport Science, School of Literature and Humanities, Malayer University, Malayer, Iran.

\* **Corresponding author email address:** amir.sh63288@gmail.com

E d i t o r	R e v i e w e r s
Karim Chamari  Tunisian Research Laboratory "Sports Performance Optimization" National Center of Medicine and Sciences in Sports (CNMSS), Tunis, Tunisia pademil@hotmail.com	<b>Reviewer 1:</b> Masoud Mirmoezi  Department of Physical Education and Sport Sciences, Islamic Azad University, Central Tehran Branch, Tehran, Iran. Email: massoudmirmoezi@live.com <b>Reviewer 2:</b> Mohammad Reza Khodabakhsh  Department of Psychology, Neyshabour Branch, Islamic Azad University, Neyshabour, Iran. Email :hodabakhsh@ut.ac.ir

### 1. Round 1

#### 1.1 Reviewer 1

Reviewer:

The statement, "In the post-training assessment, there were no notable discrepancies found in the (M-L) and (A-P) components between the two groups." should be elaborated. The authors should clarify whether this result suggests that the SMST program benefits both groups equally or if other factors may have contributed to this outcome.

The sentence, "After collecting demographic data, the participants completed a jump and then performed a soccer-specific heading task in the air before landing on a force plate using Double-leg (Figure I)." needs clarification. Was the jump a standardized movement (e.g., drop jump), and were any instructions given to ensure consistency across participants?

In Table 2, the reported mean BMI values ( $22.13 \pm 2.39$  for Experimental 1 and  $21.98 \pm 1.04$  for Experimental 2) are within a normal range. However, it would be useful to report the range of BMI values to determine if any outliers might have influenced the results.

The results in Table 3 indicate a significant difference in ML displacement ( $p = 0.021$ ) in the non-ACLR group. However, in Table 4, multiple significant values (e.g.,  $p = 0.011$  for mean ML displacement) are presented without effect sizes. The authors should report Cohen's  $d$  or eta squared to provide a better understanding of the magnitude of these differences.

The findings in Table 5 show significant pre-test differences between groups for ML displacement ( $p = 0.014$ ), maximal displacement AP ( $p = 0.018$ ), and mean displacement ML ( $p = 0.021$ ). These differences suggest that the groups were not entirely comparable at baseline. The authors should discuss whether this pre-existing discrepancy affected the post-training results.

Author revised the manuscript and uploaded the updated document.

## 1.2 Reviewer 2

Reviewer:

The phrase, "Almost 70% of soccer-related injuries occur in the lower extremities, with the knee being the most commonly affected area (3)." requires a recent reference. The citation used is from 2002; a more updated epidemiological study would strengthen the claim.

The discussion on return-to-play (RTP) rates ("According to recent reports, 86% of elite male soccer players continued to participate in soccer 3 years after ACLR, although only 65% were able to compete at the same level as before their injury (8).") would benefit from additional discussion on female athletes, as gender-based differences in ACL injury risk and recovery are well-documented.

The authors state, "Measuring the displacement of the Center of Pressure (COP) is a typical approach for evaluating postural control." This statement could be improved by briefly explaining why COP displacement is a valid and reliable metric for postural control assessment.

The sentence, "Neuromuscular training (NMT) is considered the best and most effective way to prevent injury and improve performance techniques (17)." should be more nuanced, as some studies have suggested that other interventions, such as proprioceptive training, may also be effective. A comparative discussion would strengthen this section.

Table 6 reports no significant differences in post-test results. The authors should clarify whether this suggests that the SMST program had a uniform effect on both groups or if other variables (e.g., baseline postural stability) influenced the findings.

The sentence, "Our findings indicate that altering biomechanical and neuromuscular risk factors may play a key role in the effectiveness of injury prevention programs aimed at reducing ACL tears." should discuss whether these findings align with previous studies on NMT and ACL prevention.

The authors state, "Postural control enhancement after ACLR and NMT may also be credited to brain neuroplasticity." This claim is interesting but lacks direct evidence from the study. The authors should provide references supporting the role of neuroplasticity in postural control recovery.

Author revised the manuscript and uploaded the updated document.

## 2. Revised

Editor's decision after revisions: Accepted.

Editor in Chief's decision: Accepted.