

The effect of physiotherapy on body balance and pain intensity of elite female handball player after anterior cruciate ligament reconstruction and medial meniscus fixation: A case study

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ABSTRACT

BACKGROUND: Knee injuries are relatively common in court- and field-based sports. The anterior cruciate ligament (ACL) and meniscus injuries often require surgical treatment to return to the high-level sports. The recurrence of the ACL tears after reconstruction surgeries carries a high recurrence rate. Balance training plays an important role in injury prevention programs and is important to improve lower extremity function and decrease the risk of knee injury recurrence.

OBJECTIVE: Research aim. To evaluate the effect of physiotherapy for elite female handball player's body balance and pain intensity after anterior cruciate ligament reconstruction and medial meniscus fixation.

METHODS: Body balance was evaluated with the Posturomed platform with two-dimensional measurement by MicroSwing software. Pain intensity was measured by using Visual Analogue Scale (VAS). Physiotherapy program with the unstable oscillatory platform was developed and used to train the athlete's body balance.

RESULTS: Posturomed platform oscillations decreased from 34.1 cm to 16 cm in the frontal plane on left leg and from 46 cm to 24.4 cm on right leg; in the sagittal plane platform distance changed from 273 cm to 256 cm on left leg and 207 cm to 211 cm on right leg.

The average platform disturbance in frontal plane was 22.73 ± 6.75 cm on left leg and 31.21 ± 9.37 cm; the average disturbance path in sagittal plane was 254.5 ± 61.48 cm on left leg and 223 ± 37.56 cm in right leg. Balance stability increased from 55% (right leg) and 65% (left leg) to 89% (right leg) and 88% on (left leg). During 6 weeks of intervention the pain intensity changed from 7 to 3 scores (VAS).

CONCLUSIONS: Six weeks physiotherapy program with unstable oscillatory platform (Posturomed) improved body balance and decreased the pain intensity.

KEYWORDS: elite handball player, anterior cruciate ligament, body balance, Posturomed platform.