

## عنوان مقاله:

Rotational Stability of the Knee in a Comparative Study of Anterior Cruciate Ligament Reconstruction Using the Double-Bundle and Single-Bundle Techniques

## محل انتشار:

مجله استخوان و جراحی عمومی، دوره 10، شماره 9 (سال: 1401)

تعداد صفحات اصل مقاله: 10

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## خلاصه مقاله:

**Background:** The purpose of this study was to evaluate the biomechanical outcomes of patients who underwent ACL reconstruction either with the DB or SB technique. We hypothesized that the DB technique would provide better rotation control of the knee following ACL reconstruction. **Methods:** The study included seventy-five participants (۲۶ DB, ۲۲ SB, and ۲۷ healthy volunteers). Only cases with at least one year of postoperative follow-up were included. The participants performed three different demand tasks: walk task, walk and change direction, and stair descent and change direction, which was tracked using a three-dimensional ۴-camera optoelectronic system. The following kinematic data were analyzed: tibial rotation amplitude and maximal internal and external rotation. Knees with ACL reconstruction were compared to contralateral knees with intact ACL and healthy knees. Clinical outcomes were determined using the subjective and objective International Knee Documentation Committee (IKDC) questionnaire and a manual arthrometer (KT ۱۰۰۰). **Results:** Both surgical groups exhibited similar clinical outcomes (mean subjective IKDC ۹۱ SB vs. ۹۰ DB,  $P=۰.۸۱۵$ ; KT ۱۰۰۰ difference: ۲mm in both groups,  $P=۰.۷۷۲$ ). The vertical component of the ground force reaction revealed no differences between the surgical and control groups ( $P>۰.۰۵$ ). Tibial rotation amplitude and maximal internal and external rotation were similar between the control, SB, and DB groups in all three different demand tasks ( $P>۰.۰۵$ ). **Conclusion:** ACL reconstruction using either the SB or DB technique can restore rotational control to the level of a healthy knee. No clinical or functional differences were found between the SB and DB surgical options. Level of evidence: II

## کلمات کلیدی:

anterior cruciate ligament, Anatomy, Anterior cruciate ligament reconstruction, Biomechanical phenomena

