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Hamstring Graft Preparation Techniques for Anterior Cruciate Ligament Reconstruction

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Introduction: Anterior Cruciate Ligament (ACL) tears are one of the most frequent injuries in young athletes. Given the importance of its biomechanical function in knee stability, ACL tears are treated surgically whenever there is sports activities demand.
There are key factors in the ACL reconstruction such as graft choice, tunnel positioning, and graft diameter. Grafts less than 8 mm in diameter are a risk factor for re-rupture and relapse. This is especially important if hamstring grafts are used in female patients younger than 20 years old.

Objectives: To describe in detail different hamstring graft preparation techniques to obtain an optimal and individualized graft according to patient´s anatomy and the ideal diameter and length for the reconstruction of the ACL.

Methods: In the surgical lab, different hamstring graft preparation techniques with allografts, Endobutton femoral cortical suspension device (Smith and Nephew), FiberWire # 2 and FiberLoop # 2 (Arthrex) braided suture were prepare above the graft preparation station.

Results: Different techniques of hamstring graft preparation were described in detail:
Two-Strand with one tendon; Three-Strand with one tendon; Four-Strand with one and with two tendons; Five-Strand with two tendons; Six-Strand with two tendons and Eight-Strand with two tendons.

Conclusion: It is essential to master the different hamstring graft preparation techniques in order to obtain an individualized graft with the appropriate diameter and length according to the patient´s anatomy, height and physical demand.

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