

# Quadriceps Tendon Graft for Anterior Cruciate Ligament Reconstruction: THE GRAFT OF THE FUTURE!



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## Quadriceps Tendon Graft for ACL reconstruction

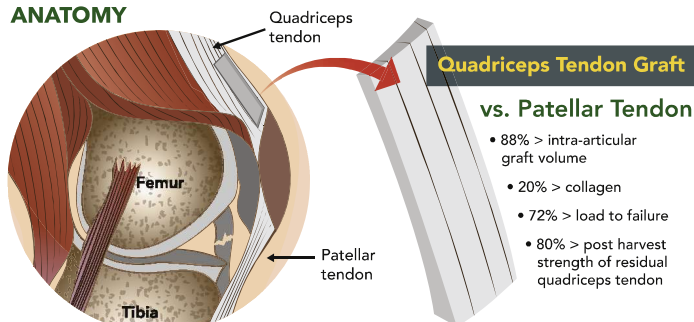
THE GRAFT OF THE FUTURE!

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### ANATOMY



### Quadriceps Tendon Graft

#### vs. Patellar Tendon

- 88% > intra-articular graft volume
- 20% > collagen
- 72% > load to failure
- 80% > post harvest strength of residual quadriceps tendon

### GRAFT CHARACTERISTICS

- 7-11 mm grafts easily obtained
- Length/area tailored to patients needs
- Minimal harvest site morbidity
- Customized for primary and revision surgeries

### HARVESTING TECHNIQUE



### GRAFT PREPARATION



Whipstitch 1.5 cm of each end of the graft

### OUTCOMES

- Total Graft Failure rate = 4%
- Failure rate (15-20 years of age) = 8%
- Failure rate (20-25 years of age) = 3%

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**Abstract:** Anterior cruciate ligament (ACL) reconstruction is one of the most common orthopaedic surgeries performed on active people in the world. One of the most important surgical decisions is graft type for use in the reconstruction. Despite extensive research on optimal graft choice for ACL reconstruction, discrepancy exists among practicing surgeons' graft preference. Recently, the quadriceps tendon has gained popularity for use as a graft source for ACL reconstruction.

The all soft tissue quadriceps graft offers many advantages over other autograft choices. Histologically it has 20% more collagen fibrils per cross-sectional area than the patellar tendon (PT). Biomechanically, its ultimate load is 70% > than that of a similar width PT graft, while its modulus is more similar to the native ACL than either the PT or hamstring graft. Anatomically the quadriceps tendon has significantly more volume than the PT. Thus, even after harvest of the quadriceps graft, the remaining quadriceps tendon is still 80% stronger than the intact PT!

The length and cross-sectional area of the quadriceps tendon graft can be tailored to the needs of the patient. On any patient over 5 feet tall, a graft length of 7 cm can be obtained. Because the thickness of the tendon is almost twice the thickness of the same patient's PT, a graft diameter from 7 to 11 mm can easily be achieved. Thus, this graft can be customized for both primary and revision surgeries.

Harvest site morbidity is minimal. An incision less than 2 cm in an area with no significant cutaneous nerves without harvest of any patella bone leads to no significant harvest site pain, numbness, or palpable defect.

Clinical outcomes using this graft are excellent. Our prospective data on nearly 1,000 grafts, with a mean patient age of 20 years old, show a 4.2% failure rate. Thus, the all soft tissue quadriceps graft will be the surgical choice for ACL reconstruction for future athletes.

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