Graduated ACL Tibial Guide for ACL Reconstruction Surgery

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ACL Reconstruction

- Over 200,000 ACL injuries occur in the US annually and up to 150,000 of these undergo reconstruction.[1]
- Median total societal cost of $32,276 per ACL reconstruction surgery.[2]
- 10%-25% of ACL reconstruction surgeries will require some sort of revision surgery. [1,3,4]

ACL Tear[5]

1. Wilde J et al. Revision Anterior Cruciate Ligament Reconstruction. Sports Health. 2014.
2. Herzog M et al. Cost of Outpatient Arthroscopic Anterior Cruciate Ligament Reconstruction Among Commercially Insured Patients in the United States, 2005-2013. Orthop J Sports Med. 2017.
3. Samitier G et al. Failure of anterior cruciate ligament reconstruction. Arch Bone Jt Surg. 2015.
4. Werner BC et al. A Prospective Evaluation of the Anterior Horn of the Lateral Meniscus as a Landmark for Tibial Tunnel Placement in ACL Reconstruction. Orthop J Sports Med. 2017.
5. http://www.craigloucksmd.com/acl-tears-hip-knee-peak-orthopedics-denver.html

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Tunnel malposition leads to graft failure

- Tunnel malposition is cited as the most common reason for graft failure.[1,2]

- Independent femoral tunnel drilling technique was developed to uncouple the tibial and femoral tunnels and allow the surgeon to position tunnels independently of each other.
  - May lead to greater stability, but there is controversy over optimal tibial tunnel placement
  - Tibial tunnel placement as a percentage of the anterior-to-posterior distance across the tibia standardizes tunnel placement, but requires intraoperative fluoroscopy to optimize tunnel location
  - Intra-articular landmarks do not require fluoroscopy, but yield inconsistent tunnel location

- **Clinical problem**: There are currently no solutions available that enable surgeons to identify optimal tibial tunnel placement as a percentage of the anterior-to-posterior distance across the tibia without the use of intraoperative fluoroscopy or other imaging techniques.

1. Samitier G., Marcano A.I., Alentorn-Geli E., Cugat R., Farmer K.W., Moser M.W. Failure of anterior cruciate ligament reconstruction. Arch Bone Jt Surg. 2015;3:220–240. [PubMed]
2. Werner BC et al. A Prospective Evaluation of the Anterior Horn of the Lateral Meniscus as a Landmark for Tibial Tunnel Placement in ACL Reconstruction. Orthop J Sports Med. 2017.

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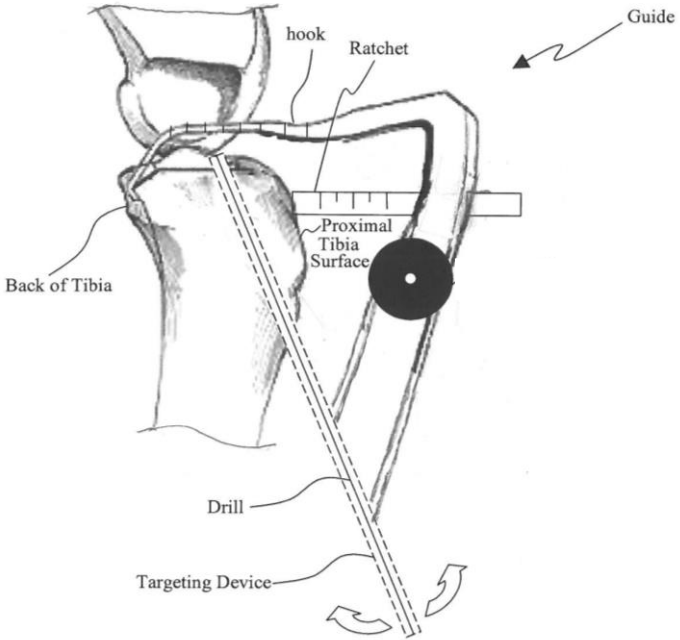

Graduated Tibial Guide

- ✓ Efficiently and reliably visualize and measure optimal tibial tunnel location
  - ✓ Does not require fluoroscopy
- ✓ Reduce drilling inaccuracy with the use of a guide pin to mark the path of a bone tunnel
- ✓ Reduce risk of post-surgical complications including graft failure and revision surgery

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Intellectual Property

UVA TechID: MILLERM-ACL (2015-126)

Title: Adjustable device for identifying a target location for a tibial tunnel and related method thereof

US patent application no. 15/838,565 filed December 12, 2017

Scientific Publications

A prospective evaluation of the anterior horn of the lateral meniscus as a landmark for tibial tunnel placement in anterior cruciate ligament (ACL) reconstruction

Werner BC, Burrus MT, Gwathmey FW, Miller MD

Knee. 2016 Jun;23(3):478-81. doi: 10.1016/j.knee.2015.10.009. Epub 2015 Nov 6.

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