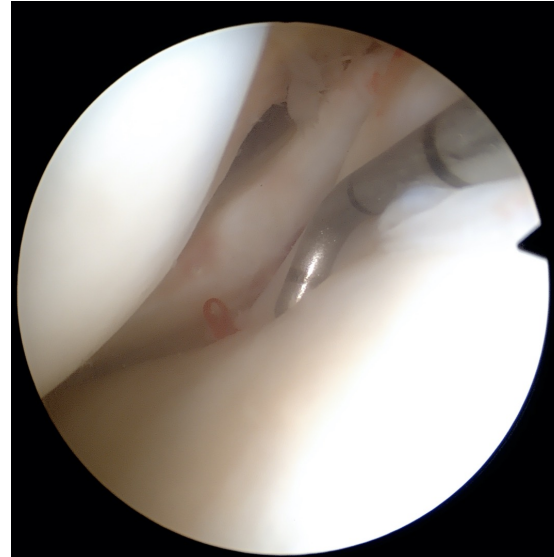


Anatomy, biomechanics and classification of posterior lateral root tears



Disclosure

1. Royalties from Move Up and SBM
2. Consulting income from Arthrex, Move-Up and SBM



10th

**Advanced Course
on Knee Surgery**

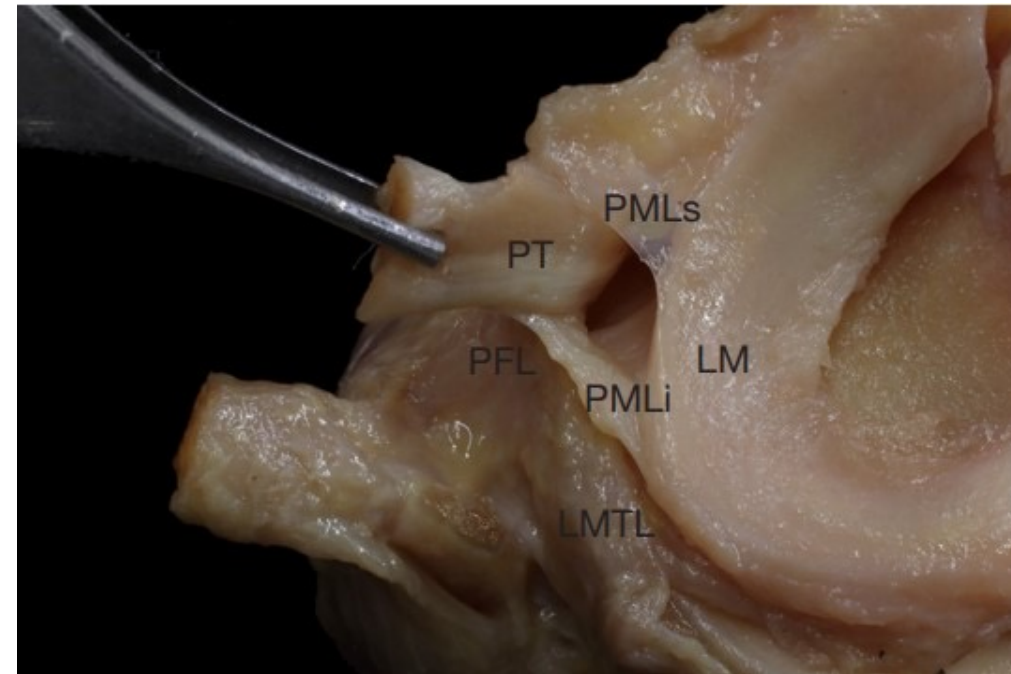
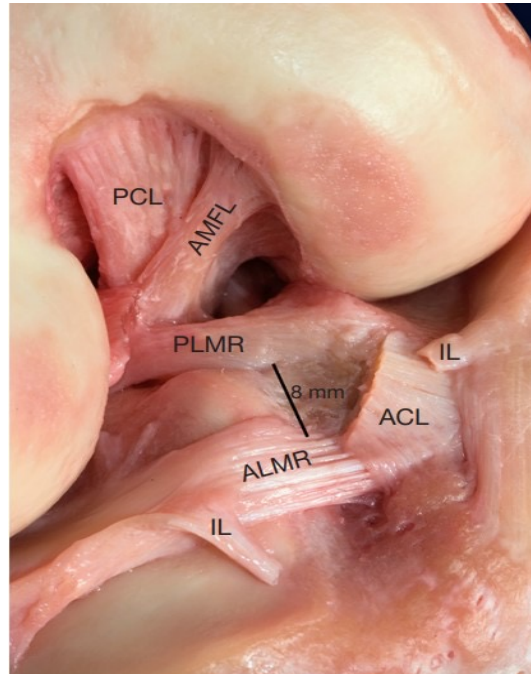
Global Anatomy

Anatomy of lateral meniscus

Simone Perelli^{1,2^}, Rodolfo Morales Avalos^{1,3}, Angel Masferrer-Pino¹, Juan Carlos Monllau^{1,2}

Annals of Joint 2022

- Firmly attached to anterior & posterior horns closed to ACL
- No no solid capsular connection with LCL
- Popliteus hiatus
- ≠ MM
- → greater mobility F/E
19 mm excursion

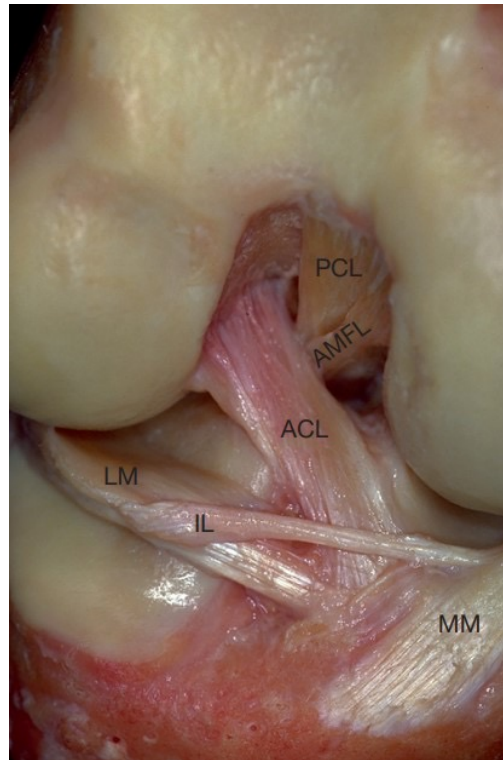


Anterior Horn

Anatomy of lateral meniscus

Simone Perelli^{1,2^}, Rodolfo Morales Avalos^{1,3}, Angel Masferrer-Pino¹, Juan Carlos Monllau^{1,2}

Annals of Joint 2022



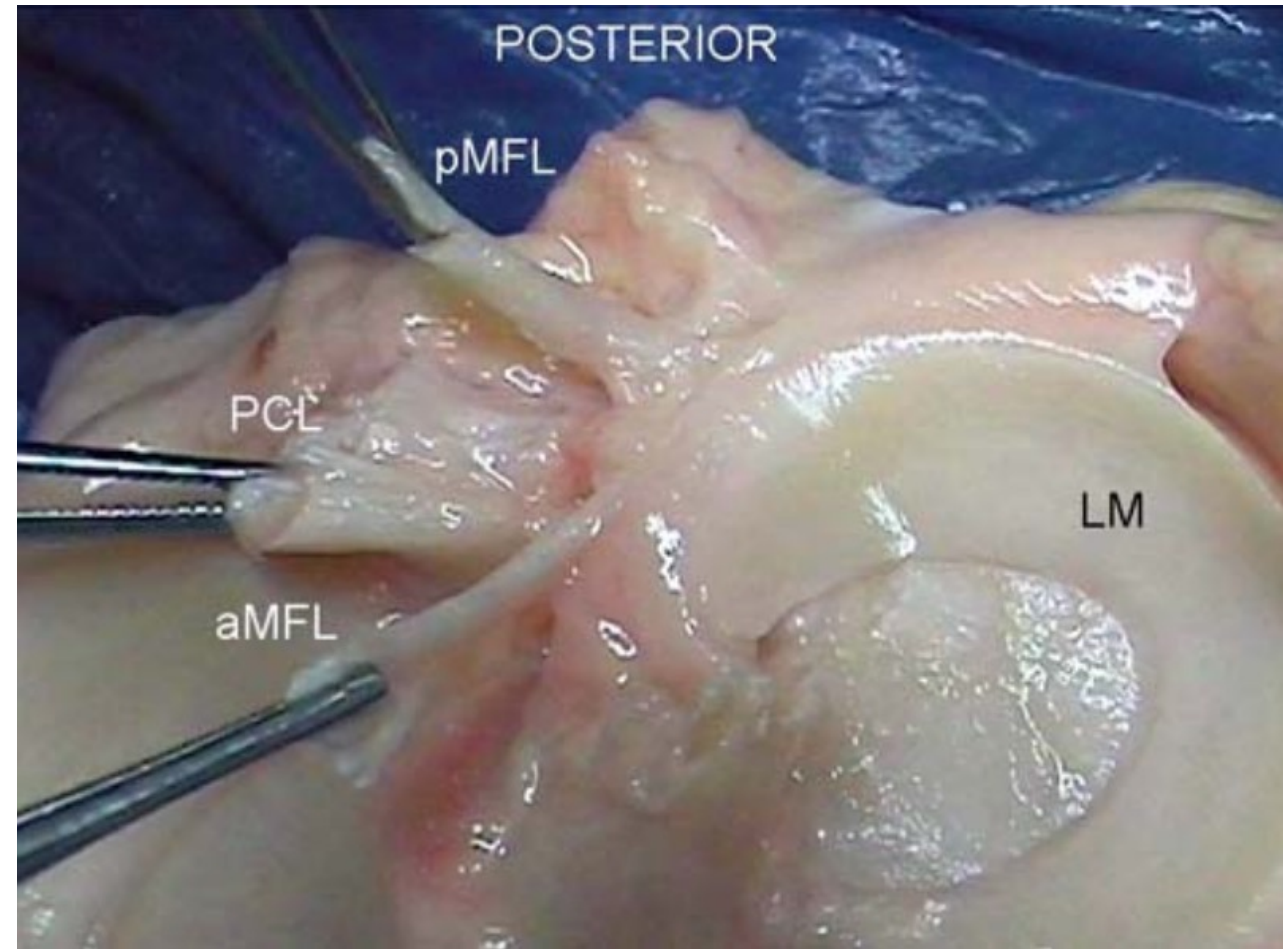
Posterior Horn

Biomechanics of the meniscus-meniscal ligament construct of the knee

S. D. Masouros · I. D. McDermott ·
A. A. Amis · A. M. J. Bull

KSSTA 2008

- Lateral meniscus posterior root attachment
- MeniscoFemoral Ligaments :
 - Anterior :Humphrey (AMFL)
 - Posterior: Wrisberg (PMFL)



Posterior Horn

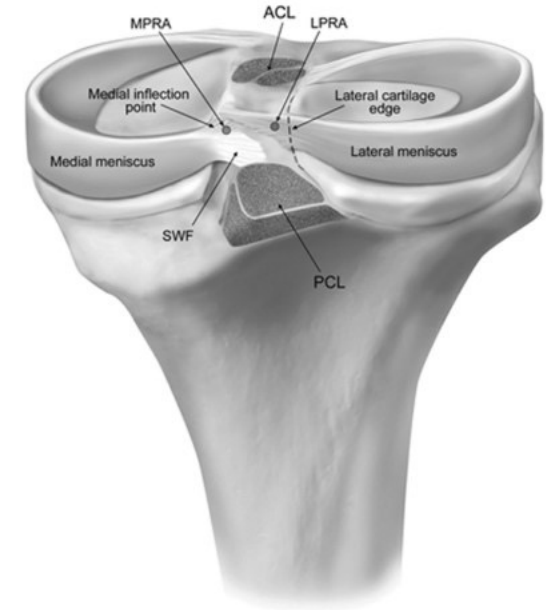
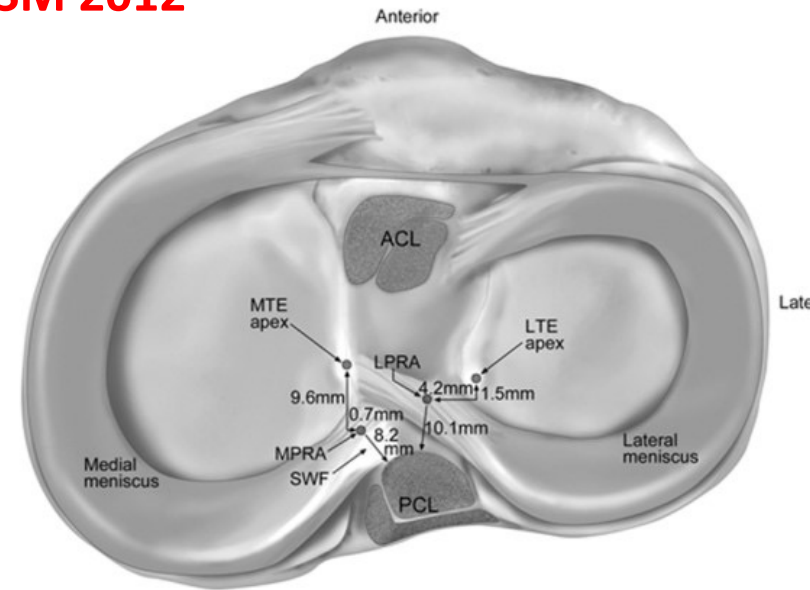
Qualitative and Quantitative Anatomic Analysis of the Posterior Root Attachments of the Medial and Lateral Menisci

Adam M. Johannsen,* BS, David M. Civitaresse,* BA, Jeffrey R. Padalecki,* MD, Mary T. Goldsmith,* MSc, Coen A. Wijdicks,* PhD, and Robert F. LaPrade,*†‡ MD, PhD
Investigation performed at Steadman Philippon Research Institute, Vail, Colorado

Arthroscopic landmarks:

- Lateral tibial eminence: 1.5 mm posteriorly and 4.2 mm medially
- Lateral cartilage reflection folds: 4.3 mm medially
- PCL: 10.1 mm anteriorly

AJSM 2012



Posterior Horn

Anatomy of lateral meniscus

Simone Perelli^{1,2^}, Rodolfo Morales Avalos^{1,3}, Angel Masferrer-Pino¹, Juan Carlos Monllau^{1,2}

Annals of Joint 2022

- **Vascularization** : Middle geniculate artery (highly vascularized)
- **Innervation** : recurrent peroneal branch of the common peroneal nerve
- **Mechanoreceptors +++**
Ruffini endings, Pacinian and Golgi tendon organs



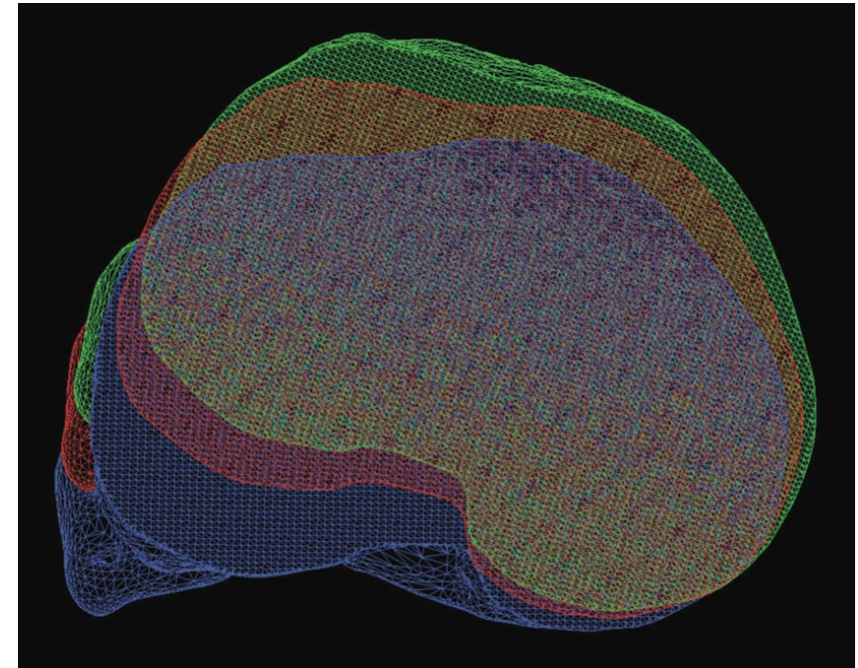
Biomechanics of LM posterior horn

Effect of Lateral Meniscal Root Tear on the Stability of the Anterior Cruciate Ligament-Deficient Knee

Theodore B. Shybut,^{*†} MD, Charles E. Vega,[†] MD, Jebran Haddad,[†] BA, Jerry W. Alexander,[‡] BS, Jonathon E. Gold,[‡] BS, Philip C. Noble,[‡] PhD, and Walter R. Lowe,[§] MD
Investigation performed at The Institute of Orthopedic Research and Education, Houston, Texas, USA

AJSM 2015

- Becomes a Primary stabilizer against IR in flexion in case of ACL deficient knee
→ **Increase of PST +++**
- PLM Root tears further destabilizes the ACL- deficient knee



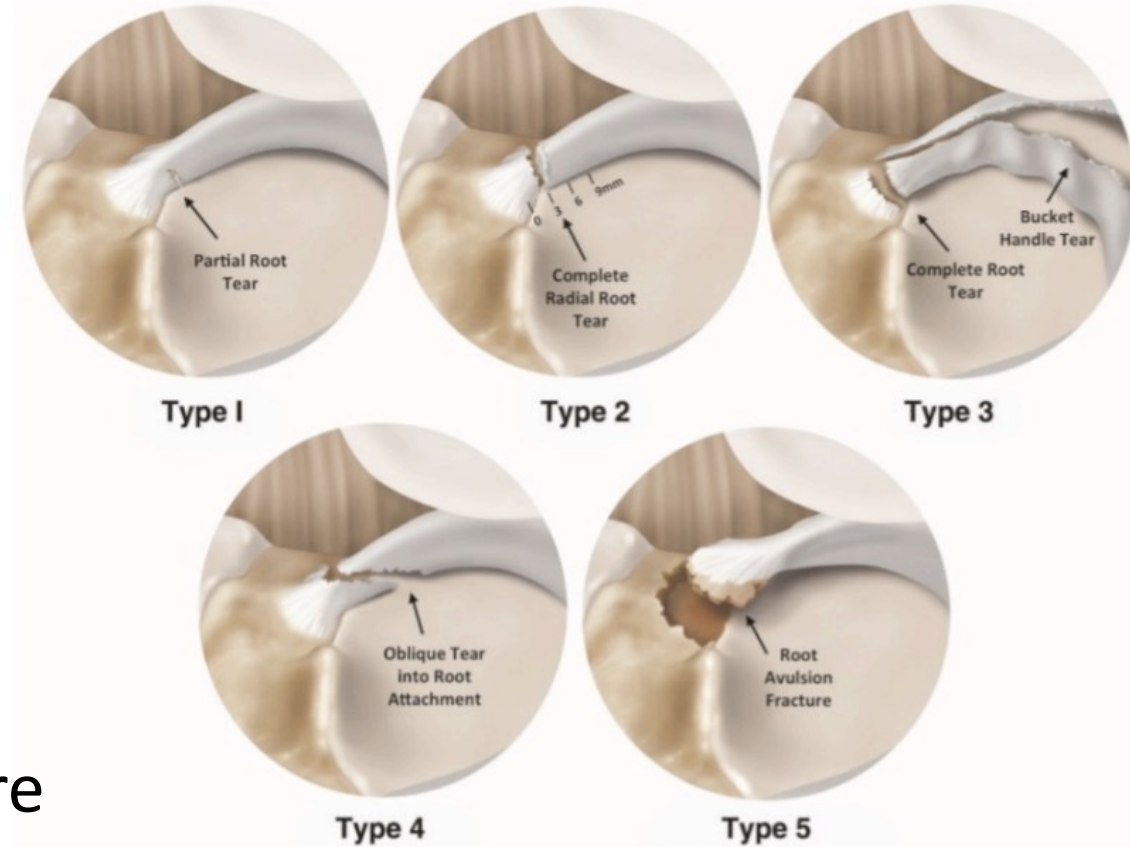
Classification of LaPrade

Meniscal Root Tears: A Decade of Research on their Relevant Anatomy, Biomechanics, Diagnosis, and Treatment

Mark T. Banovetz BS^{1,2}; Lindsay C. Roethke BS^{1,2}; Ariel N. Rodriguez MS^{1,3}; Robert F LaPrade MD PhD¹

Arch Bone Jt Surg. 2022

- Type 1 : 7%
- Type 2 : 68%
- Type 3 : 6%
- Type 4 : 10%
- Type 5 : 10% may be associated with tibial eminence fractures or PCL rupture



Thank you!



Esteban Lobos Centeno

