ACL Update 2015

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Dr. DeLee has no relevant financial relationships with commercial interests to disclose.

CME Accreditation
This live activity is designated for a maximum of 1 AMA PRA Category 1 Credit. Physicians should claim only credit commensurate with the extent of their participation in this activity.
Learning Objectives

1. To review the most recent research on Anterior Cruciate Ligament Reconstruction.
2. To review the importance and incidence of the Anterior Lateral Ligament.

Rahr-Wagner, L, Thillemann, T, Pedersen, A, & Lind, M
Comparison of Hamstring Tendons and Patellar Tendon Grafts in ACL Reconstruction in a Nationwide Population-Based Cohort Study
• Reviewed 13,647 ACL Reconstructions
  — Hamstring revision rate: 0.65%
  — Patellar Tendon graft revision rate: 0.16%
• Hamstring reunion rate greater than Patellar Tendon - particularly first year post-op.

Persson, A, Fjaldsguard, K, Gjerlsen, J, et al
Increased Risk of Revision with Hamstring Tendon Grafts Compared with Patellar Tendon Grafts after ACL Reconstruction
• Reviewed 12,643 ACL Reconstructions
• 5.1% of Hamstrings revised at 5 years
• 2.1% of Patellar Tendon grafts revised at 5 years
• The difference most marked on younger age groups
Mariscalco, MW, Magnussen, RA, Mehta, D, et al

Autograft versus Non-irradiated Allograft Tissue for ACL Reconstruction
• Reviewed nine studies comparing autografts and non-irradiated allografts
• No significant difference in post-operative laxity or patient-reported outcomes
• These results based on 20-30 year old patients.
  — Data does not apply to younger adults.


Risk Factors of Subsequent Operations after Primary ACL Reconstruction.
AJSM Vol. 42 No 3 pp. 619-25 March 2014
• Reoperation rates after ACL reconstruction are relatively low
• Risk factors for subsequent surgery include:
  — previous meniscal repair
  — female sex
  — allografts
  — prior surgery
  — older patient age

Webster, K, Feller, J, Leigh, W, Richmond, A

Younger Patients are at Increased Risk for Graft Rupture and Contralateral Injury after ACL Reconstruction
AJSM Vol. 42 No 3 pp. 641-7 March 2014
• Studied 750 patients with returned questionnaire
• One patient in 3.4 (younger than 20 years) had a graft rupture or contralateral ACL injury within 5 years
• This high re-injury rate is of concern to younger patients
Barenius, B, Ponzer, S, Shalabi, A

Increased Risk of Osteoarthritis after ACL Reconstruction
AJSM Vol. 42 No 5 pp. 1049-57 May 2014
• 3-fold increase of risk of OA after ACL injury treated with reconstruction compared with the contralateral healthy knee
• No difference in OA rate between BPTB and quadrupled hamstrings
• Meniscus resection was strongest risk factor for OA

Filbay, S, Ackerman, I, Russell T

Health-related Quality of Life after Anterior Cruciate Ligament Reconstruction
AJSM Vol. 42 No 5 pp. 1247-55 May 2014
• Reviewed 14 studies evaluating quality of life after ACL reconstruction
• Patients using knee-specific measures to evaluate their quality of life reported poorer HRQoL scores
• Revision surgery, meniscal injuries, and radiographic OA were associated with poorer health outcomes

Wittstein, J, Vinson, E, Garrett, W

Comparison Between Sexes of Bone Contusions and Meniscal Tear Patterns in Noncontact ACL Injuries
AJSM Vol. 42 No 6 pp. 1401-7 March 2014
• No significant difference was detected between sexes with non-contact ACL for location of contusions or meniscal tears

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Beynon, B, Vacek, P, Newell, M, et al
The Effects of Level of Competition, Sport, and Sex on the Incidence of First-Time Noncontact ACL Injury
AJSM Vol. 42 No 8 pp. 1806-12 July 2014
• Females twice as likely to have ACL injury compared to males
• College athletes have significantly higher rates for ACL tears compared to high school athletes
• Soccer and rugby players have significantly higher rates for ACL injury

Wyatt, R, Inacio, M, Liddle, K, Maletis, G
Prevalence and Incidence of Cartilage Injuries and Meniscus Tears in Patients Who Underwent Both Primary and Revision ACL Reconstructions
AJSM Vol. 42 No 8 pp. 1841-46 June 2014
• Prevalence of cartilage injuries increased from 14.9% at primary ACLR to 31.8% at revision ACLR
• Prevalence of meniscal tears decreased from 54.8% at primary ACLR to 43.7% at revision ACLR

Mather, R, Hettrich, C, Dunn, W, Cole, B
Cost-Effectiveness Analysis of Early Reconstruction Versus Rehabilitation and Delayed Reconstruction for ACL Tears
AJSM Vol. 42 No 7 pp. 1583-91 May 2014
• Early ACL reconstruction (less than 10 weeks post injury) was less costly and more effective than rehabilitation and delayed ACL reconstruction
Gans, I, Baldwin, K, Ganley, T

Treatment and Management Outcomes of Tibial Eminence Fractures in Pediatric Patients
AJSM Vol. 42 No 7 pp. 1743-50 Nov 2013
- No evidence to support arthroscopic versus open fixation
- No evidence to support screw versus suture fixation techniques
- Types III & IV fractures heal with greater laxity and greater loss of motion after treatment

Sonnery-Cottet, B, Mogos, S, Thaunat, M, Archbold, P, et al

Proximal Tibial Anterior Closing Wedge Osteotomy in Repeat Revision of Anterior Cruciate Ligament Reconstruction
AJSM Vol. 42 No 8 pp. 1873-80 May 2014
- Posterior Tibial Slope (PTS) average was 13.6° pre-operatively and post-operative average was 9.2°
- Anterior laxity was 10.4mm pre-operatively and 2.8mm post-operatively
- Anterior closing wedge osteotomy and ACL re-revision combined to produce a stable knee

Thank You!