RAPID RESEARCH

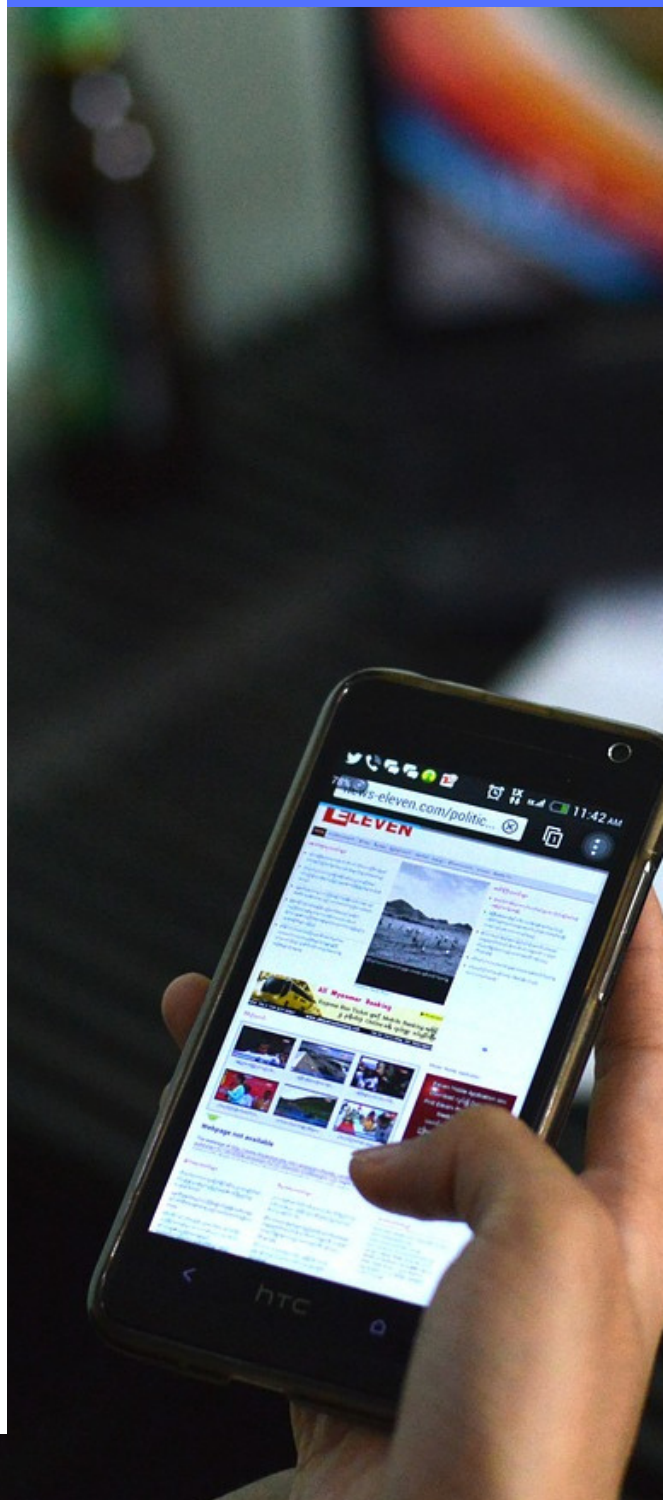
@physicaltherapyresearch

January 2022

Inside This Week:

Anterior Cruciate Ligament (ACL)

- Hamstring vs. Patellar Tendon Grafts for ACL Reconstruction
- Accuracy of Lever Sign Test for Acute, Chronic, and Post-Op ACL
- Limb Symmetry Indexes & Knee Function After ACL Injury

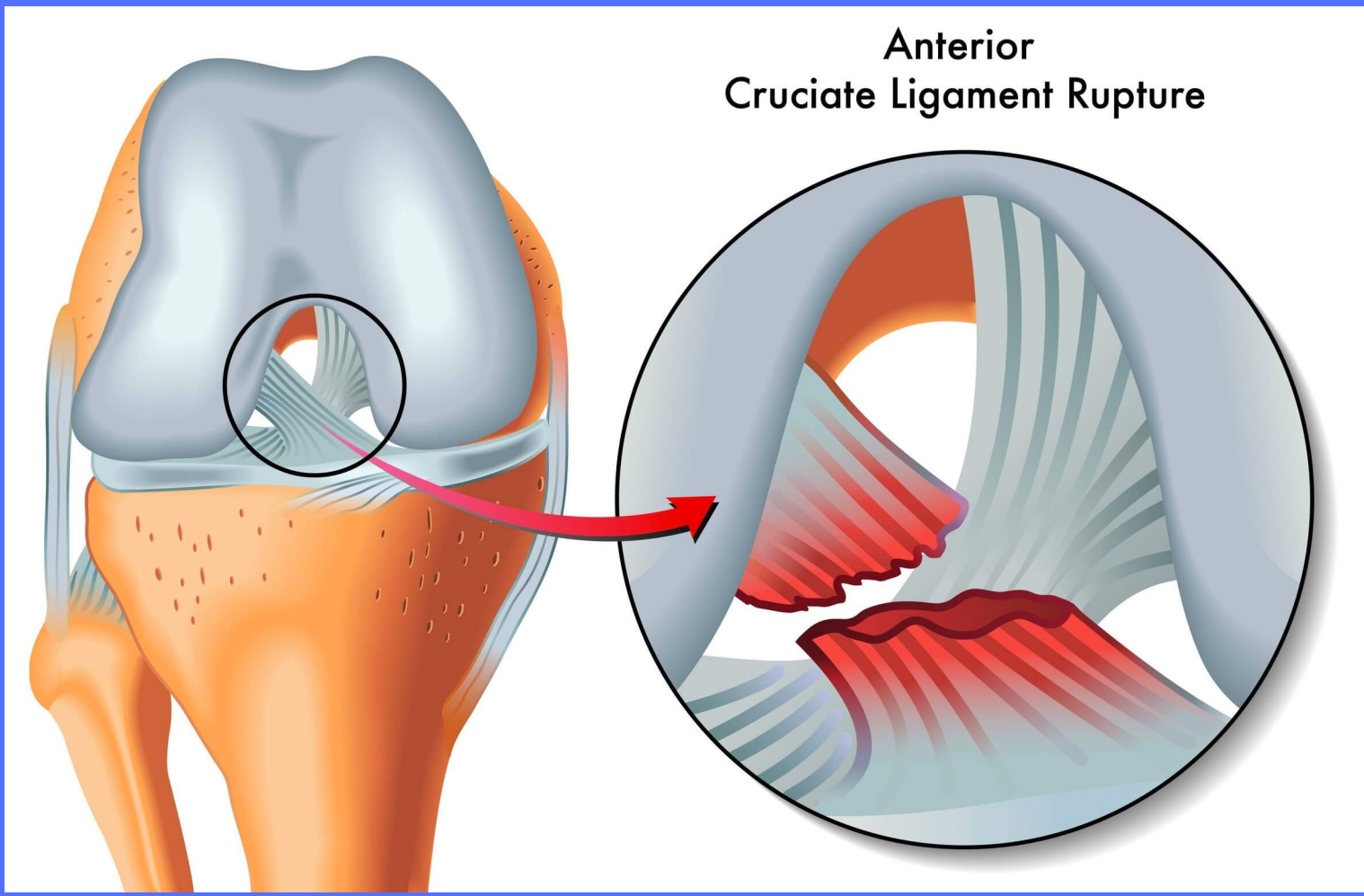


JANUARY 2022

HAMSTRING VS PATELLAR TENDON AUTOGRAFT FOR ACL RECONSTRUCTION

Click for Full Text (Samuelsen et al 2017)

This large meta-analysis with over 47,000 participants investigated which graft type for ACL reconstruction (bone-tendon-bone or hamstring) has a higher risk of (1) graft rupture and/or (2) graft laxity?



KEY FINDINGS

Included A total of 47,613 ACL reconstructions
(39,768 bone-tendon-bone and 7845 hamstring).

212 of 7560 (2.80%) bone-tendon-bone grafts ruptured.
1123 of 39,510 (2.84%) hamstring grafts ruptured.

235 patients would need a bone-tendon-bone graft vs. a hamstring tendon graft to **prevent 1 graft rupture.**

(318 of 1433) 22% of bone-tendon-bone group had laxity.
(869 of 4783) 18% of hamstring tendon group had laxity.

Pivot shift testing was positive in:
(291 of 1508) 19% of bone-tendon-bone group.
(844 of 5062) 17% in the hamstring group.

Lachman testing was positive in:
(71 of 280) 25% of bone-tendon-bone grafts.
(73 of 288) 25% in the hamstring grafts.

MAIN TAKEAWAYS

In short-to-mid-term follow-up after primary ACL reconstruction:
Hamstring autografts failed at a higher rate than bone-tendon-bone autografts.

Failure rates were low in each group, with minimal difference.

Both graft types showed similar levels of laxity.

Both graft types are viable options for primary ACL reconstruction.

Difference in failure rate is one part of a larger discussion, along with complication rates, and patient-reported outcome measures.

JANUARY 2022

ACCURACY OF LEVER SIGN TEST FOR ACUTE & CHRONIC ACL TEARS

Click for Full Text (GürpJnar et al. 2019

This research determined the diagnostic accuracy of lever sign test in acute, chronic, and post-reconstructive ACL injuries.

Negative Test
ACL NOT TORN

Positive Test
ACL TORN

KEY FINDINGS

Sensitivity, Specificity & Accuracy in Acute Phase:

Lachman- 80.6%, 62.5% & 76.9%

Anterior draw- 77.4%, 68.8% & 75.6%

Pivot Shift- 51.6%, 93.8% & 60.3%

Lever test- 91.9%, 93.8% & 92.3%

Sensitivity, Specificity & Accuracy in Chronic Phase:

Lachman- 83.9%, 68.8% & 80.8%

Anterior draw- 79.0%, 75% & 78.2%

Pivot Shift- 56.5%, 93.8% & 64.1%

Lever test- 91.9%, 93.8% & 92.3%

MAIN TAKEAWAYS

An ideal test for diagnosing the integrity of the ACL should be easy to perform and reproducible with high sensitivity and specificity.

From this perspective, the lever test seems to be a good additional test for acute and chronic ACL tears.

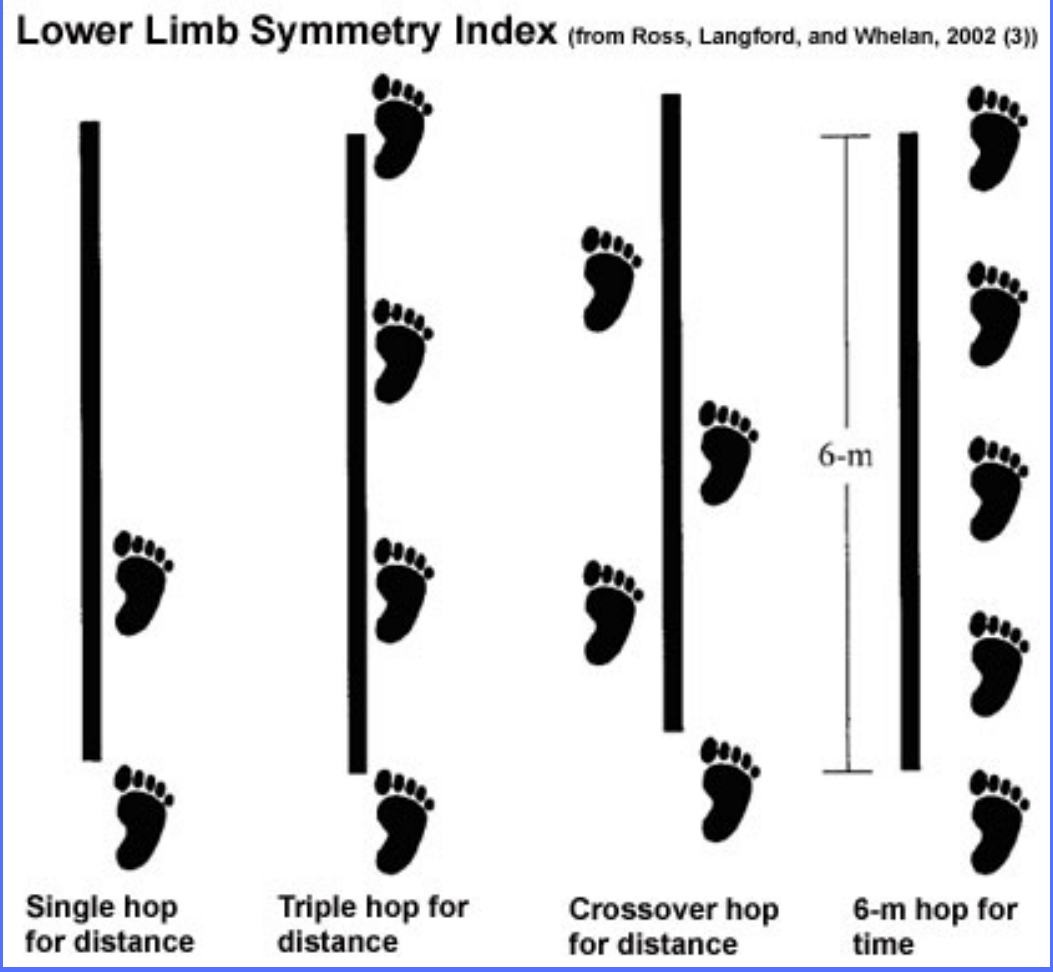
A battery of tests should be performed.

JANUARY 2022

LIMB SYMMETRY INDEXES & KNEE FUNCTION AFTER ACL INJURY

Click for Full Text (Wellsandt 2017)

There is a high risk of ACL re-injury when returning to sport. This study evaluated limb symmetry indexes (LSI's) utilized in return-to-sport testing and its relationship with second ACL injury rates.



KEY FINDINGS

70 athletes, Quad strength and 4 single-legged hop tests before & 6mo after ACL reconstruction (ACLR).
Estimated pre-injury capacity (EPIC) levels were used as reference.
2nd ACL injury tracked for a minimum 2-year follow-up.

40 (57.1%), achieved **90% LSI's for Quad strength & all hop tests.**
20 (28.6%) met **90% EPIC levels for Quad strength and all hop tests.**
24 (34.4%) who achieved 90% LSI's for all measures, **did not achieve 90% EPIC levels for all measures.**

11 athletes sustained a 2nd ACL injury within 2 years.

EPIC levels were **more sensitive vs. LSI's** in predicting 2nd ACL injuries.

MAIN TAKEAWAYS

Even with the use of rigorous return-to-sport criteria, **recovery of knee function is frequently overestimated when using limb symmetry index (LSI).**

Inability to restore original knee function prior to ACLR may increase risk for 2nd ACL injuries.

Variable return-to-sport criteria utilized in current clinical practice after ACL injury **may not be stringent enough to achieve a safe and successful return-to-sport.**

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Leave Review