



The risk factors for second anterior cruciate ligament (ACL) tear after ACL reconstruction

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Anterior cruciate ligament (ACL) tear is one of the most common sports-related injury.^[1] It causes knee instability and increases risk of future knee osteoarthritis.

Individuals may not return to their physical activity routines; it may even affect sexual functions adversely in **males**.^[2]

Anterior cruciate ligament injury prevention programs focusing on the reduction in non-contact ACL injuries have been developed to target high-risk populations, such as **female athletes**.^[3]

The Delaware-Oslo ACL cohort study revealed that high rates of second ACL injury in **young athletes** might be driven by a mismatch between return to sport (RTS) rates and functional readiness to RTS. **More time prior to RTS, and improving rehabilitation and RTS support** may reduce second ACL injury rates in young athletes with ACL reconstruction.^[4]

Small ACL inclination angle and medial meniscus bone angle can be a risk factor for ACL tear.^[5] Medial meniscus posterior base angle and the lateral meniscus posterior base angle values above 84.5° and 93.15°, respectively **are new indirect magnetic resonance imaging findings** of ACL injury.^[6]

Anterior cruciate ligament **repair** using dynamic intraligamentary stabilization provides a **similarly successful outcome** as all-inside ACL reconstruction with a faster psychological recovery in moderately active patients.^[7]

A study cohort consists of 1,661 soccer players from the Swedish National Knee Ligament Registry with 10 year-follow up after a primary ACL reconstruction revealed that players that return to soccer had a significantly higher risk of sustaining further ACL injury. **Only half of the soccer players returned to play after ACL reconstruction** and, in two-thirds of those who did not return, the reason was knee related. **The high risk of sustaining additional knee injury is of serious concern to the player's future knee health and should be considered while deciding on a return to play.**^[8]

Finally, a systematic review and meta-analysis revealed that **soccer players experienced high ACL injury rates after primary ACL reconstruction** and demonstrated similar reinjury rates, consistent with previous literature of athletes who participated in high-demand pivoting sports.^[9]

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REFERENCES

1. Atik OŞ, Kaya İ. Is it possible to prevent ACL injury? Jt Dis Relat Surg 2022;33:263-4. doi: 10.52312/jdrs.2022.57905.
2. Mazlum EC, Gunay AE, Kahraman M, Sahbaz E, Ekici M, Ozan F. Effects of anterior cruciate ligament rupture and reconstruction on sexual activity of male patients. Jt Dis Relat Surg 2023;34:138-43. doi: 10.52312/jdrs.2023.784.

3. Webster KE, Hewett TE. Meta-analysis of meta-analyses of anterior cruciate ligament injury reduction training programs. *J Orthop Res* 2018;36:2696-708. doi: 10.1002/jor.24043.
4. Grindem H, Engebretsen L, Axe M, Snyder-Mackler L, Risberg MA. Activity and functional readiness, not age, are the critical factors for second anterior cruciate ligament injury - the Delaware-Oslo ACL cohort study. *Br J Sports Med* 2020;54:1099-102. doi: 10.1136/bjsports-2019-100623.
5. Gültekin MZ, Dinçel YM, Keskin Z, Arslan S, Yıldırım A. Morphometric risk factors effects on anterior cruciate ligament injury. *Jt Dis Relat Surg* 2023;34:130-7. doi: 10.52312/jdrs.2023.910.
6. Yaka H, Türkmen F, Özer M. A new indirect magnetic resonance imaging finding in anterior cruciate ligament injuries: Medial and lateral meniscus posterior base angle. *Jt Dis Relat Surg* 2022;33:399-405. doi: 10.52312/jdrs.2022.653.
7. Kayaalp ME, Sürücü S, Çerçi MH, Aydın M, Mahiroğulları M. Anterior cruciate ligament repair using dynamic intraligamentary stabilization provides a similarly successful outcome as all-inside anterior cruciate ligament reconstruction with a faster psychological recovery in moderately active patients. *Jt Dis Relat Surg* 2022;33:406-13. doi: 10.52312/jdrs.2022.631.
8. Sandon A, Engström B, Forssblad M. High risk of further anterior cruciate ligament injury in a 10-year follow-up study of anterior cruciate ligament-reconstructed soccer players in the Swedish National Knee Ligament Registry. *Arthroscopy* 2020;36:189-95. doi: 10.1016/j.arthro.2019.05.052.
9. Hong IS, Pierpoint LA, Hellwinkel JE, Berk AN, Salandra JM, Meade JD, et al. Clinical outcomes after ACL reconstruction in soccer (football, futbol) players: A systematic review and meta-analysis. *Sports Health* 2023;15:788-804. doi: 10.1177/19417381231160167.