

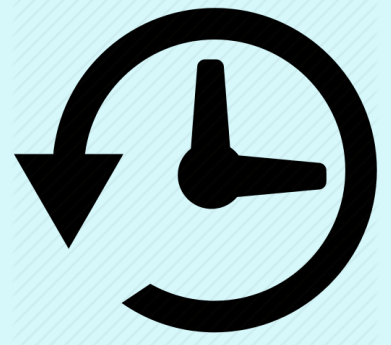


# ANTERIOR CRUCIATE LIGAMENT (ACL) INJURY

## Evidence-based diagnosis & treatment

### HISTORY

70-80% of ACL ruptures occur during a **non-contact knee injury**, typically when decelerating to change direction or when landing on one leg. At the time of injury, the person usually experiences significant **pain**, a characteristic '**pop**' and an inability to continue the activity. ACL ruptures are the most common cause of **rapid swelling** within the knee (~2 hours) and can result in knee instability when pivoting/twisting.



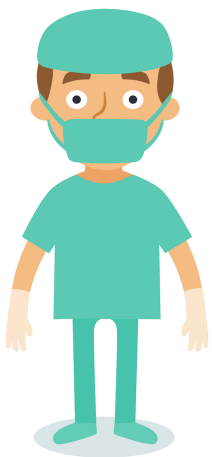
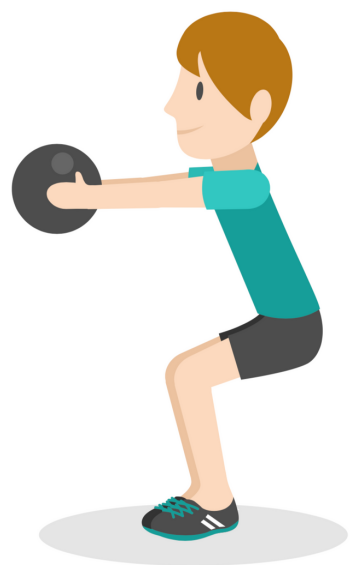
### DIAGNOSIS

ACL injury can be diagnosed using a combination of patient history and clinical examination. The **Lachman test** is the best test for ruling out an ACL rupture when negative, while the **pivot shift test** is the best test for ruling in an ACL rupture when positive. The diagnostic ability of these clinical tests is not dissimilar to magnetic resonance imaging (MRI).

**Lachman test** (acute) pooled **Sn:** 94% **Sp:** 97% **LR+** 9.4 **LR-** 0.1  
**Pivot shift test** (acute) pooled **Sn:** 32% **Sp:** 100% **LR+** 1.3 **LR-** 1.0  
**MRI** pooled **Sn:** 92% **Sp:** 99% **LR+** 44.5 **LR-** 0.07

### TREATMENT

**Conservative management** should be trialled before considering surgical reconstruction of the ACL. 5 years after injury, **49%** of patients with an isolated ACL rupture can cope without ACL reconstruction with no impact on sporting activity, further injury or X-ray evidence of knee osteoarthritis. ACL reconstruction should be considered in patients with persistent instability or in high-risk individuals.



### ACL RECONSTRUCTION

If ACL reconstruction is indicated, pre-operative rehabilitation has been shown to improve outcomes after surgery. **81%** of patients undergoing ACL reconstruction return to some form of sport; **65%** return to their pre-injury level of pivoting sports and **55%** return to competitive level sport. **83%** of elite athletes return to pre-injury level of sport.

### REFERENCES

Ardern CL et al *Br J Sports Med.* 2014;48(21):1543-52  
 Décary S, et al *Phys Ther Sport.* 2017;23:143-55.  
 Frobell RB et al *BMJ.* 2013;346:f232  
 Lai CC et al *Br J Sports Med.* 2017  
 Monk AP et al *Cochrane Database Syst Rev.* 2016;4:CD011166  
 Smith C, et al *Am J Roentgenology.* 2016 Aug;207(2):369-77.

