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: 52% Sp: 100% LR+: 1.5 LR−: 1.0
MRI pooled Sn: 92% Sp: 99% LR+: 44.5 LR−: 0.07

TREATMENT
Conservative management should be trialed 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 sport and 55% return to competitive level sport. 83% of elite athletes return to pre-injury level of sport.

REFERENCES
Probst R et al BMJ. 2015;546:1252
LaI CC et al Br J Sports Med. 2017