

ACL rupture: the Lachman test

The patient. A 24-year-old netball player landed from a jump, felt her knee give way and heard a pop. The knee swelled within a few hours. She is seen five days later.

Starting chance. For this exercise, assume a 50% chance of ACL rupture before testing. This is a teaching assumption, not a published figure.

Question. You suspect an ACL rupture and perform the Lachman test. What would a positive or a negative result do to the chance?

Teaching case: Answer

The test. Knee bent to 20–30° with the thigh supported and hamstrings relaxed. Steady the femur with one hand and draw the tibia forward with the other. Positive: More forward translation than the other knee, with a soft or absent end-feel.

Why this test. The library rates this test as ‘best used to rule in’ for ACL rupture. Sensitivity 81%, specificity 85%; LR+ 5.72, LR– 0.24.

Result	Likelihood ratio	Chance after the test
Positive	5.72	about 85%
Negative	0.24	about 19%

Take-home point. The positive result is the useful one: it moves the chance from 50% to about 85%. A negative result brings it down to about 19%, so about 19 in 100 people like this would still have the condition; a negative does not rule it out on its own.

Figures: Sokal PA, Norris R, Maddox TW, Oldershaw RA. The diagnostic accuracy of clinical tests for anterior cruciate ligament tears are comparable but the Lachman test has been previously overestimated: a systematic review and meta-analysis. *Knee Surg Sports Traumatol Arthrosc.* 2022;30(10):3287–3303. They describe the patients in that study, not every patient. Worked with odds: starting odds $\times$ likelihood ratio = odds after the test.