

Surgery is the default treatment for ACL injuries, but it's not the only way

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Credit: Andrea Piacquadio from Pexels

The anterior cruciate ligament (ACL) is an important ligament in the knee. It runs from the thigh bone (femur) to the shin bone (tibia) and helps stabilize the knee joint.

Injuries [to the ACL](#), often called a "tear" or a "rupture," are common in sport. While a ruptured ACL has just sidelined [another Matildas star](#), people who play sport recreationally are also at risk of this injury.

For decades, surgical repair of an ACL injury, called a reconstruction, has been the primary treatment [in Australia](#). In fact, Australia has among the [highest rates of ACL surgery](#) in the world. Reports indicate [90% of people](#) who rupture their ACL go under the knife.

Although surgery is common—around [one million](#) are performed worldwide each year—and seems to be the default treatment for ACL injuries in Australia, it may not be required for everyone.

What does the research say?

We know ACL ruptures can be treated using [reconstructive surgery](#), but [research](#) continues to suggest they can also be treated with rehabilitation alone for many people.

Almost 15 years ago a randomized clinical trial published in the [New England Journal of Medicine](#) compared early surgery to rehabilitation with the option of delayed surgery in young active adults with an ACL injury. Over half of people in the rehabilitation group did not end up having surgery. After five years, [knee](#) function [did not differ](#) between treatment groups.

The findings of this initial trial have been supported by more research since. A [review of three trials](#) published in 2022 found delaying surgery and trialing rehabilitation leads to similar outcomes to early surgery.

A [2023 study](#) followed up patients who received rehabilitation without surgery. It showed one in three had evidence of ACL healing on an MRI after two years. There was also evidence of improved knee-related

quality of life in those with signs of ACL healing compared to those whose ACL did not show signs of healing.

Regardless of treatment choice the rehabilitation process following ACL rupture is lengthy. It usually involves a minimum of nine months of [progressive rehabilitation](#) performed a few days per week. The length of time for rehabilitation may be slightly shorter in those not undergoing surgery, but more research is needed in this area.

Rehabilitation starts with a physiotherapist overseeing simple exercises right through to resistance exercises and dynamic movements such as jumping, hopping and agility drills.

A person can start rehabilitation with the option of having surgery later if the knee remains unstable. A common sign of instability is the knee giving way when changing direction while running or playing sports.

To rehab and wait, or to go straight under the knife?

There are a number of reasons patients and clinicians may opt for early surgical reconstruction.

For [elite athletes](#), a key consideration is returning to sport as soon as possible. As surgery is a well established method, athletes (such as [Matilda Sam Kerr](#)) often opt for early surgical reconstruction as this gives them a more predictable timeline for recovery.

At the same time, there are risks to consider when rushing back to sport after ACL reconstruction. Re-injury of the ACL is very common. For every month return to sport is delayed until nine months after ACL reconstruction, the rate of knee re-injury is [reduced by 51%](#).

Historically, another reason for having early surgical reconstruction was

to reduce the risk of future knee osteoarthritis, which increases following an ACL injury. But [a review](#) showed ACL reconstruction doesn't reduce the risk of knee osteoarthritis in the long term compared with non-surgical treatment.

That said, there's a need for more high-quality, long-term studies to give us a better understanding of how knee osteoarthritis risk is influenced by different treatments.

Rehab may not be the only non-surgical option

Last year, [a study](#) looking at 80 people fitted with a specialized knee brace for 12 weeks found 90% had evidence of ACL healing on their follow-up MRI.

People with more ACL healing on the three-month MRI reported better outcomes at 12 months, including higher rates of returning to their pre-injury level of sport and better knee function. Although promising, we now need comparative research to evaluate whether this method can achieve similar results to surgery.

What to do if you rupture your ACL

First, it's important to seek a comprehensive medical assessment from either a sports physiotherapist, sports physician or orthopedic surgeon. ACL injuries can also have associated injuries to surrounding ligaments and cartilage which may influence treatment decisions.

In terms of treatment, discuss with your clinician the pros and cons of management options and whether surgery is necessary. Often, patients don't know not having surgery is an option.

Surgery appears to be necessary for some people to achieve a stable knee. But it may not be necessary in every case, so many patients may wish to try [rehabilitation](#) in the first instance where appropriate.

As always, prevention is key. Research has shown [more than half](#) of ACL injuries can be prevented by incorporating prevention strategies. This involves performing specific exercises to strengthen muscles in the legs, and improve movement control and landing technique.

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