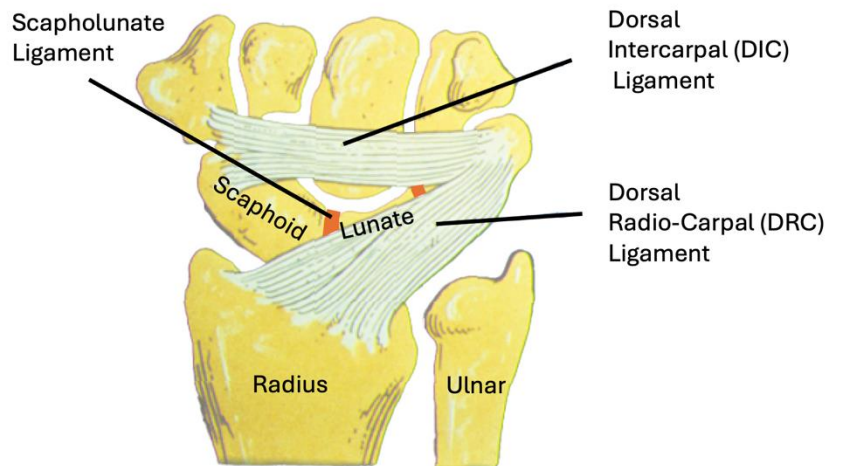
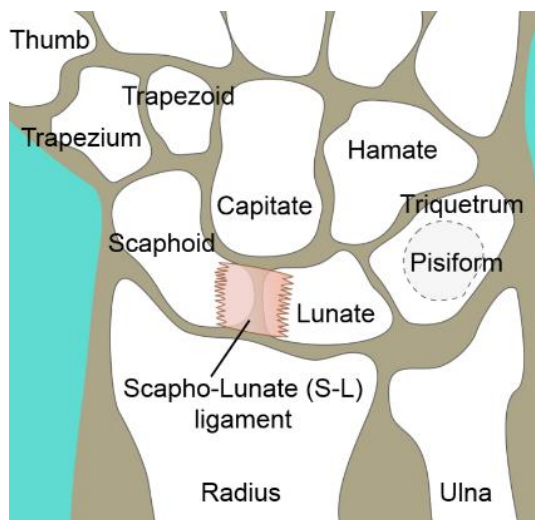




What is a Dorsal Wrist Ligament Injury?

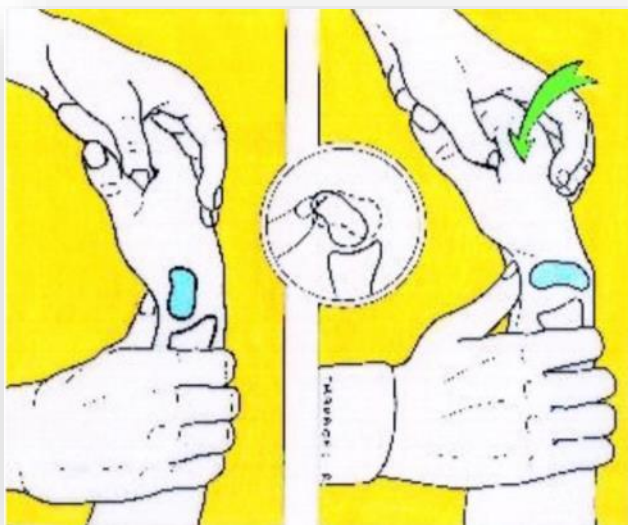
The **scapho-lunate**, **dorsal intercarpal (DIC)** and **dorsal radiocarpal (DRC)** ligaments, are important ligaments that hold the small bones of the wrist together so they can move normally. When these ligaments are injured – usually by being torn off their bone attachment – the scaphoid and lunate separate, the wrist joint becomes unstable and eventually arthritis develops because the scaphoid starts partly dislocating, damage the cartilage lining the joint abnormal biomechanics causing the joint lining to be damaged. This eventually results in arthritis. In the early stages wrist instability causes pain, weakness of grip and stiffness.



How are the dorsal wrist ligaments injured?

Usually a significant force is required to cause instability of the wrist. Contact sports, falls and bicycle/motorcycle accidents are common causes. There is usually marked swelling, weakness and pain. The injured person often feels that their wrist may be broken but the X-rays can initially be normal. A wrist “sprain” may be the first diagnosis and it may be some months before further investigation (repeat X-rays or MRI scan) reveals separation of the scaphoid and lunate.

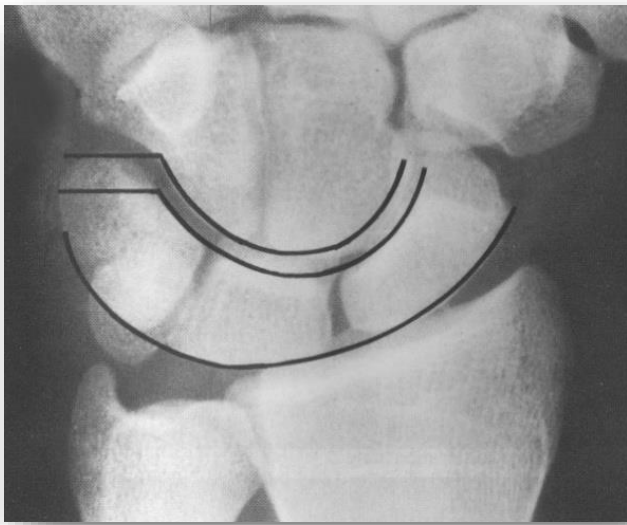
How is a dorsal wrist ligament injury diagnosed?



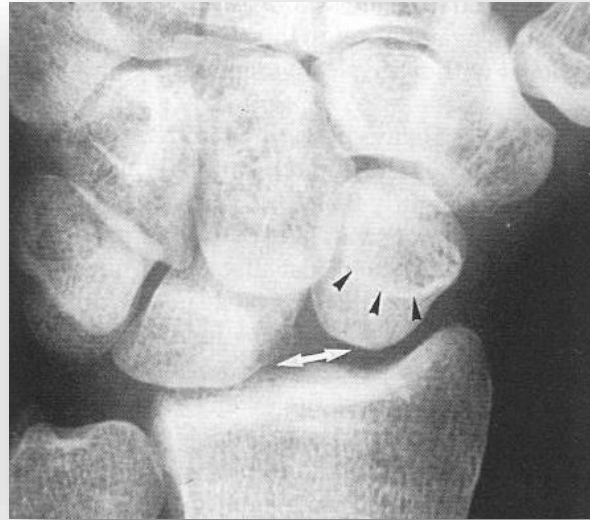
History & Examination

The diagnosis is suggested by a history of significant trauma, mild to moderate wrist swelling, persistent pain & weakness. There will be tenderness over the dorsal side of the wrist. If multiple dorsal ligaments are ruptured there may be a positive Kirk Watson test (image left).

A positive Kirk Watson test is when the scaphoid partly dislocates (subluxed) during with direct pressure on the underside of the scaphoid and movement of the wrist by the examining specialist. An uncomfortable “clunk” or pain occurs when the manoeuvre is performed.



A. Normal Wrist



B. Dorsal Wrist Ligament Rupture

Imaging

If the **x-rays** are normal but the examination suggests carpal instability, an **MRI scan** is used to confirm the injury. As advances in understanding dorsal wrist ligament injuries are relatively recent, only a radiologist who works closely with a hand & wrist surgeon may have the experience to identify and report the sometimes-subtle findings.

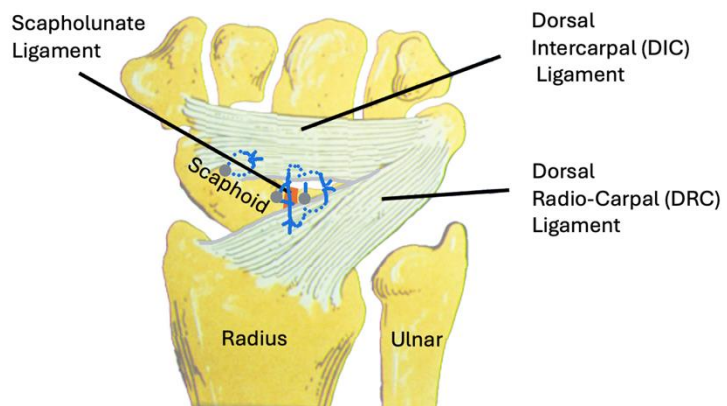
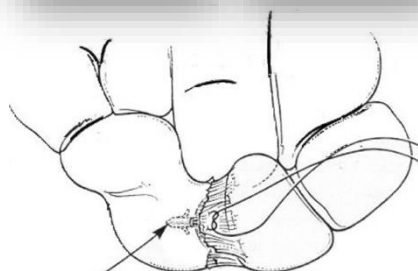
How are dorsal wrist ligament injuries treated?

Ligament injuries without instability

A dorsal wrist ligament injury without instability is usually first managed with splinting & physiotherapy. A course of anti-inflammatories or a steroid injection may also be recommended. Even without major instability, if symptoms of pain or weakness still persist, an MRI and ligament repair may be required.

Ligament injuries with instability

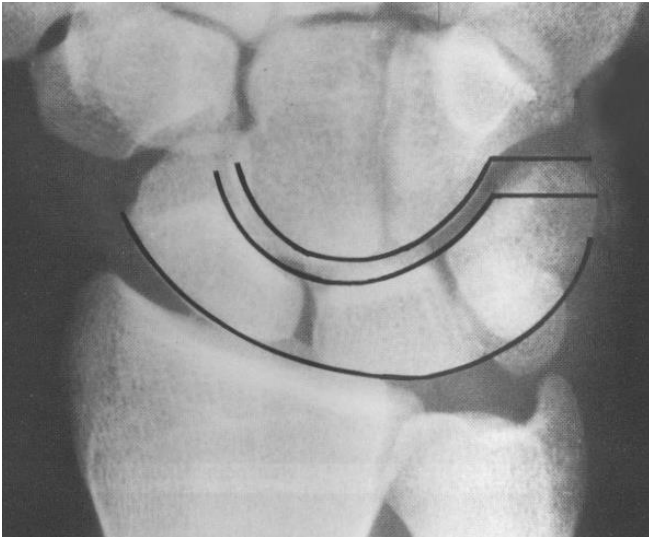
A major ligament rupture will usually be treated with surgery to repair the injured ligaments. The scaphoid and lunate are brought back into their normal alignment and the injured ligaments are re-attached to bone with suture anchors (below). The operation is performed under general anaesthetic and takes approximately 90 minutes.





Old ligament injuries

Old ligament injuries may be identified years after an injury when a patient has a painful wrist, occasionally after a fall or other injury. In this situation there is usually post-traumatic arthritis which is the cause of the pain and repair of the ligaments is not of any benefit. If the arthritis symptoms persist despite non-operative treatment, a **partial or total wrist fusion** may be required.



Normal Wrist X-ray



Arthritis from longstanding ligament injury

What is the Recovery?

More severe ligament injuries will take longer to recover than more minor ligament injuries. Even with optimal surgical care, there will be a degree of reduced movement and grip strength. Maximal recovery will take up to 12 months and there is still a possibility of arthritis developing over time.

2 Days: Review by hand therapist to make dressings less bulky and start gentle exercises. A custom-made splint shall be made and is to be worn at all times between exercise.

2 Weeks: Review by Dr Green & Hand Therapist.

2-4 months: Gradual upgrade exercises and strengthening. No lifting greater than 2kg, no push ups, avoid strong gripping and twisting. It takes 4 months for the ligaments to heal so it is very important to only do what Dr Green and the hand therapist advise, even if your wrist feels strong.

4-6 months: Gradual return to normal activities.

12 months: Maximum recovery.

What are the Risks?

Even when expertly treated, major dorsal ligament injuries are a serious injury and there will be some reduction of wrist movement and grip strength.

It is still unknown whether wrist ligament repair will prevent arthritis. Surgery usually improves pain, grip strength and overall function. If the ligaments are not repaired and the wrist joint remains unstable, post-traumatic arthritis will slowly develop because the scaphoid continues to slide in and out of the joint, wearing the cartilage lining. There can also be significant damage to the joint cartilage at the time of the injury.

Other risks include infection (1%), failure of the ligament repair from repeat injury or not following rehabilitation program, loss of strength and nerve injury. Carpal tunnel syndrome is very common when there has been a major wrist injury and surgery to release the carpal tunnel may be recommended if there are signs and symptoms prior to ligament repair.