

Wrist Sprains

A sprain is an injury to a ligament. Ligaments are the connective tissues that connect bones to bones; they could be thought of as tape that holds the bones together at a joint (see **Figure 1**).

The most common ligament to be injured in the wrist is the scapho-lunate ligament (see **Figure 2**). It is the ligament between two of the small bones in the wrist, the scaphoid bone and the lunate bone. There are many other ligaments in the wrist, but they are less frequently injured. Sprains can have a wide range of severity; minor sprains may have minimal stretch of the ligaments, and more severe sprains may represent complete tears of the ligament(s). Another common ligament injured is the TFCC (triangular fibrocartilage complex).

Causes & Symptoms

Wrist sprains are common when a person falls. The wrist is usually bent backwards when the hand hits the ground. After injury, the wrist will usually swell and may show bruising. It is usually painful to move.

Diagnosis

Initially your doctor will examine your wrist to see where it hurts and to check how it moves. X-rays are taken to make sure there are no broken bones or dislocated joints (see **Figure 3**). Occasionally other studies, such as Magnetic Resonance Imaging (MRI), may be performed.

Treatment

Treatment may range from wearing a splint or cast to surgery. Surgery may consist of arthroscopic (with an internal camera) or open surgery. Arthroscopic surgery is performed through small (3-4 millimeter) incisions in the skin. A camera and other special instruments are placed inside the wrist to confirm the diagnosis and potentially treat the ligament injury. Some injuries require open surgery, where an incision is made to repair the ligament. A variety of repair methods exist, which could include metal pins, screws, and other specialized devices. Patients are usually placed in a splint or cast that may need to remain on for several weeks after surgery. Your doctor will determine the best course of treatment.

Chronic injuries

The term “chronic” refers to an old injury of greater than several months to years. If there is no or minimal cartilage damage, the ligament may be reconstructed. If there is moderate to severe cartilage damage (arthritis), symptoms may include pain, stiffness, and swelling. Chronic injuries may first be treated with splinting and non-steroidal anti-inflammatory medicines, and later with cortisone injections. If these treatments fail, surgery may be an option. Various types of procedures are possible, including a partial wrist fusion, removal of arthritic bones (“proximal row carpectomy”), wrist replacement, or complete wrist fusion. Your doctor will determine the best course of treatment.

Associated injuries

Occasionally fractures occur along with wrist sprains. These may require additional procedures to repair the fracture with metal pins, screws, or plates. Cartilage damage may also be present, which does not show up on the x-ray.

Future treatments

The optimum treatment for these injuries is not always clear. There is much research underway searching for better methods to treat these serious injuries. They include stronger and more precise ligament reconstructions using either local tissues (tendons) or distant tissues (ligaments from the hand or foot).

Prognosis

Despite optimal treatment, wrist sprains occasionally result in residual long term pain, stiffness, and swelling. The wrist is a complex group of bones, cartilage, and ligaments that are in a delicate balance for precise movements. Injury can upset this balance and damage previously well-tuned moving parts.

Figure 1. Ligaments of wrist.

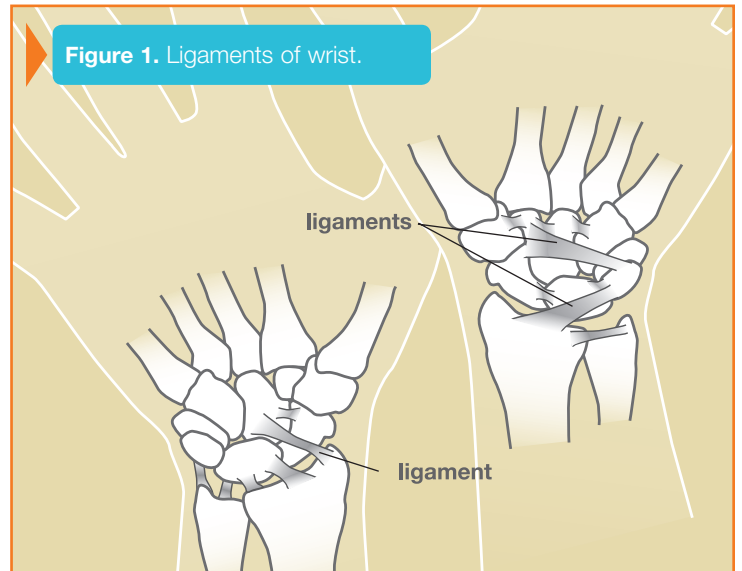


Figure 2. Diagram of the scapholunate ligament (circled).

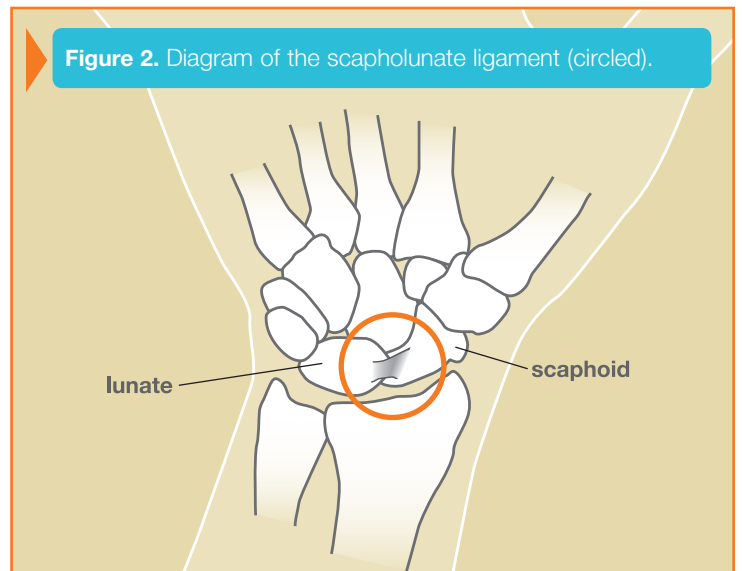


Figure 3. X-ray showing gap between scaphoid and lunate from ligament rupture (left) and normal x-ray of opposite wrist (right).

