

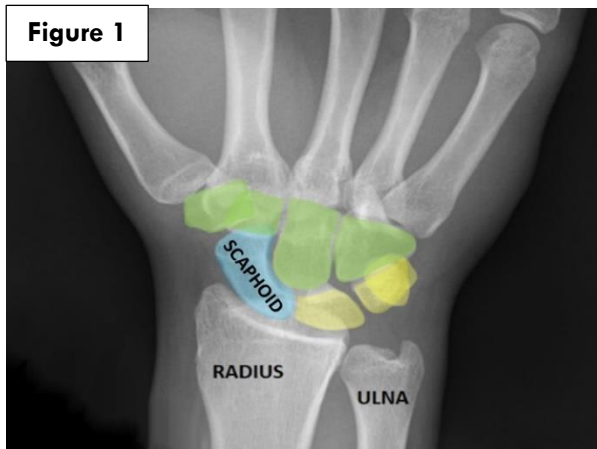
## SCAPHOID FRACTURES

### Patient Information Brochure

#### What is a scaphoid fracture?

The wrist consists of eight small carpal bones and the end of our two forearm bones: the radius and ulna. The scaphoid bone lies just beyond the end of the radius (Figure 1) and links both the proximal row of carpal bones (yellow) and distal carpal row of bones (green). The unique location of the scaphoid facilitates the complex wrist motions we enjoy but puts it at added risk of fracture. Therefore, the scaphoid is the most common carpal bone fracture.

Figure 1



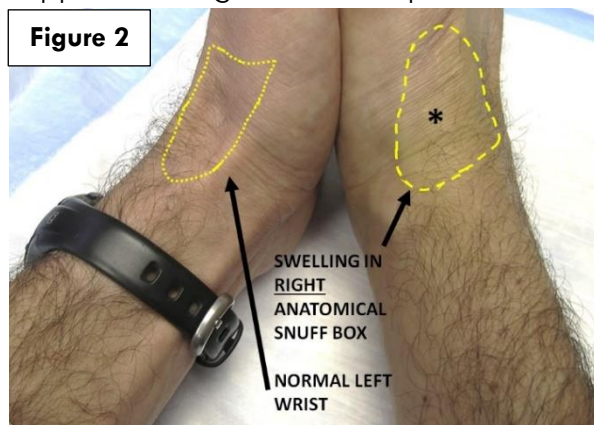
#### How do scaphoid fractures occur?

These fractures most commonly occur from a fall on the outstretched hand. Immediately after the fall, pain is typically experienced in the wrist joint. The initial pain may or may not be severe, and this tends to subside after a few weeks. Swelling and bruising is not commonly observed, and deformity is rare. This leads many to regard the injury as a "sprained wrist". A delay in seeking evaluation is not uncommon. It is not unusual for a patient with a scaphoid fracture to seek attention months or even years after the index injury.

#### How are scaphoid fractures diagnosed?

The hand surgeon will start with a wrist examination, looking for swelling and pain or tenderness in the anatomical snuff box (\*) of the wrist (Figure 2). Wrist mobility may be affected mildly in early cases and more noticeably in advanced cases. Certain clinical tests (physical manoeuvres) may be performed which will reproduce pain and support the diagnosis of a scaphoid fracture.

Figure 2



An x-ray of the affected wrist with several different projections to better visualize the scaphoid bone is usually required. Even then, up to twenty percent of fractures may be missed or remain undetected. If the suspicion of a fracture is strong, your hand surgeon may elect to immobilize your wrist in a cast or splint and repeat the x-rays two weeks later where it may more easily be detected. Sometimes, a CT scan or MRI may be ordered, either to expedite diagnosis or to visualize a suspicious bony injury more clearly.

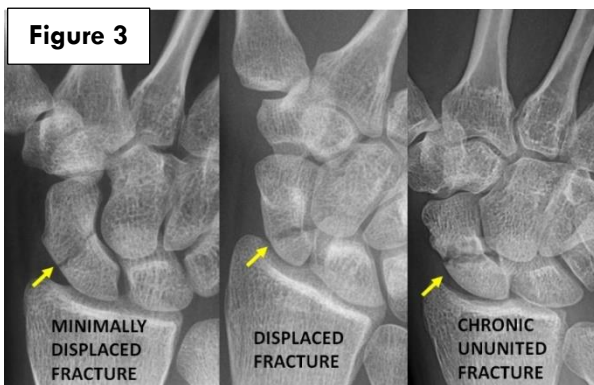
#### How are scaphoid fractures treated?

If the fracture occurred recently and is minimally displaced, cast immobilization of the wrist for six to twelve weeks often results in healing of the fracture. If the fracture is

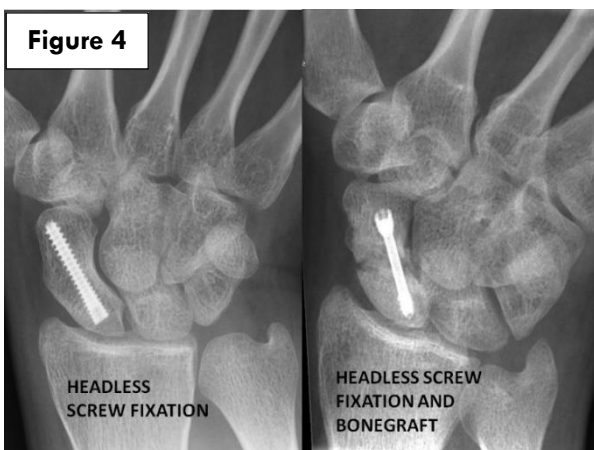
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displaced or there is evidence of a chronic fracture that has not united, surgery may be recommended to predictably achieve union and restore function (Figure 3).



Scaphoid fractures heal poorly due to a tenuous blood supply which is interrupted by the fracture. Surgical fixation with a headless screw stabilizes the fracture to allow that healing to occur. In chronic situations, the use of bone grafts, “brings in” fresh bone tissue to augment the healing process (Figure 4).



### Complications of scaphoid fractures

When the scaphoid bone is fractured, the blood supply to it is interrupted, especially to the proximal fragment (the part of the

fracture near to the radius). When medical attention and diagnosis is delayed, delayed union or chronic non-union occurs. This makes spontaneous fracture healing impossible, even if a cast is worn. If non-union goes undetected for several years, several things can happen, including the development of arthritis in the wrist, particularly around the scaphoid bone, and progressive loss of alignment of the adjacent carpal bones (carpal collapse) because the link effect of the scaphoid is lost due to the fracture. Patients may experience pain, which is constant or easily aggravated, progressive motion loss and even deformity with significant carpal collapse. In long-standing non-union, the proximal fragment may suffer avascular necrosis resulting in bone death making the situation irreversibly salvageable.

### Do I have a scaphoid fracture?

If you suspect you may have suffered a scaphoid fracture based on what has been described, consult with a hand surgeon who will perform a thorough assessment and determine the best investigations to evaluate your cause of wrist pain. If a scaphoid fracture is confirmed, your hand surgeon is most ideally equipped with the knowledge and skills to provide you with the best advice and treatment.