



M I C H I G A N  
Hand Center

Specialists in treatment & rehabilitation  
from the fingertips to shoulder

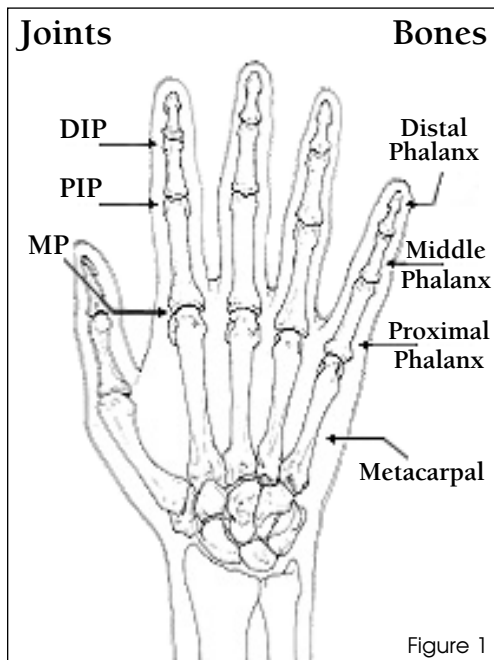
# Newsletter

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by Julian E. Kuz, M.D.

## Sports Injuries of the *Fingers*



Hand and wrist injuries are common in sports especially in those involving catching/throwing and contact. Most of these injuries are minor and will respond to a conservative regimen of rest, ice, and elevation. Injuries that are associated with any deformity or loss of motion deserve additional consideration including x-rays. This also includes injuries that do not return to normal (with

minimize time spent on the sidelines for the athlete.

The initial complaint from the athlete can simply be “I jammed my finger” or “I sprained my wrist.” The injury mechanism usually cannot be entirely recalled by the athlete but should be pursued to determine if related injuries could have occurred. A simple classification for these injuries would be determined by the location and the structure injured: tendon, bone/joint, ligament, or combinations of the above (Figure 1).

resolution of pain) in just a couple of days. In these cases, a detailed exam and x-rays are required to rule-out “occult” injuries and to expedite treatment at an interval where functional outcome will be optimized. This can hopefully



# Tendon Injuries

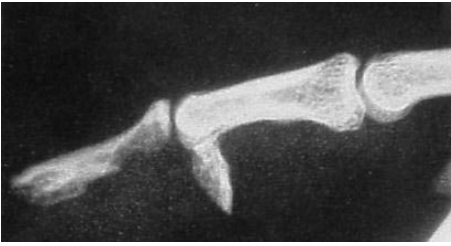


Figure 2

There are 3 common sports-related tendon injuries that occur to the fingers. These are the mallet finger, the jersey finger, and the boutonniere injury. Each one of these has a characteristic clinical exam and represents a particular tendon rupture or avulsion. X-rays are required since these injuries can exist with a concomitant fracture.

Mallet finger is usually caused by jamming the fingertip against an object such as a ball or another player. The extensor tendon is forcefully ripped (sometimes with a piece of bone) from its insertion on the distal phalanx resulting in a “drooping” posture of the fingertip and loss of extension of the DIP joint. The injury can sometimes be associated with very little pain and the deformity may be the only clue that an injury requiring treatment exists. Most of these injuries, if treated early, will respond satisfactorily to a splint worn fulltime for 6 to 8 weeks, holding the DIP joint in extension. Rarely does the injury require surgery, which may be necessary if a fracture is present.

The jersey finger is named for the fact that the injury is commonly caused by an attempt to grab another athlete’s jersey resulting in the flexor tendon for the DIP joint to be torn. Mild swelling and pain accompany this injury but the real key to the exam is the loss of flexion at the DIP joint. This can occur with a fracture (figure 2). This type of injury requires surgery to reattach the tendon. The best results occur when surgery can be performed in the first 10 days from injury. After that interval, it can become increasingly difficult or impossible to restore flexion to the fingertip. After surgery a comprehensive therapy program is required to maximize motion.

The boutonniere injury is the least common and perhaps most difficult of the tendon injuries to diagnose. The injury is the result of jamming the finger causing a tear of the extensor tendon attached to the middle phalanx. Patients will present with a swollen PIP joint and a flexed posture at the joint. Tenderness on the dorsum of the joint is another hallmark of this injury. Like the mallet injury, most of these injuries will respond to a fulltime splinting program followed by a carefully monitored motion program. Surgery becomes more likely for those injuries that present late or do not respond to the splinting regimen.



# Bone/Joint Injuries

These injuries involve fractures or dislocations of the bones and joints of the fingers. By far the most common of these are injuries to the PIP joint. The injuries can range from sprain with a small palmar avulsion fracture (Figure 3) to a pure dislocation to a devastating fracture/dislocation of the joint (Figure 4). The sprains and pure dislocations will often heal satisfactorily with a short term splinting and early motion program that avoids re-stressing injured ligaments at the joint. Contracture, stiffness, and pain are all possible with this injury and therefore monitoring progress and adjusting therapy are required to prevent these problems.

The fracture/dislocation of the PIP joint is an injury that can result in permanent stiffness. Careful consideration for surgery is necessary to help restore the joint to as near normal position as possible if the joint is unstable. Various surgical techniques are used to achieve this goal including pinning the joint, using an external fixator, or resurfacing the joint with a small cartilage graft from the wrist. These injuries require significant therapy efforts to maximize recovery.



Figure 3



Figure 4

## Ligament Injuries

Ligament injuries are common in the fingers with sports. They can be associated with dislocations of joints. One of the more well known ligament injuries in the hand is the so-called “gamekeeper’s thumb.” This injury was named because of its frequency in the gamekeepers of the large hunting estates in England. Now, because of other more common causes, it can be referred to as “skier’s thumb.” The injury occurs when the thumb is forced in a direction away from the hand. This can cause a rupture of the ligament at the MP joint of the thumb on the side of the webspace. The spectrum of injury can range from a minor sprain of the ligament to a complete rupture of the ligament with displacement. The mild cases can be safely treated with a splint. Complete ruptures with displacement of the ligament away from its attachment site require surgery to avoid instability of the thumb which can result in weakness and arthritis. The key to the exam is a special stability test of the joint that compares it to the opposite (uninjured) side. Occasionally this exam is difficult secondary to pain and an injection of local anesthetic in this area can assist in the determination.



# Summary

Athletes frequently have finger injuries that can result in loss of time from their sport. It is important to identify the injury early to maximize recovery potential. These injuries can be subtle and present with very little pain or even denial on the part of the athlete because of the desire to return to the game. Early diagnosis will provide the quickest path to recovery. The doctors, nurses, and therapists of the Michigan Hand Center have considerable experience working with student athletes, weekend warriors, and professional athletes in trying to achieve this goal.

Please look for a future issue of the Michigan Hand Center Newsletter where sports injuries of the wrist will be discussed.

