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Common Finger Injuries in Sports

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Background

Injuries to the fingers and hand are extremely common in sports, particularly hand ball sports such as basketball and volleyball. Because these injuries involve small joints that may not be functionally disabling to the athlete (depending on hand dominance and which finger is injured), their importance can often be minimized and their disability overlooked. Common finger injuries will be discussed as well as their pertinent anatomy, characteristic symptoms, and treatment.

Anatomy

Central to this discussion of hand injuries is the bony and ligament anatomy of the fingers and hand. The bones of the hand can be divided into the metacarpals and phalanges (Figure 1). The metacarpals are the long bones that connect the small wrist bones to the base of the fingers. Each of the four fingers and the thumb has their own metacarpal. You can easily feel these metacarpals on the back of your own hand. When you make a fist, the large knuckle you see where the fingers connect to the hand is the end of the metacarpal.

Each finger has three phalanges bones: a proximal (closest to the hand), middle, and distal (near the fingertip) phalange. The thumb has two phalanges: proximal and distal. The proximal phalange connects with the metacarpal bone of that finger to form the metacarpal-phalangeal joint (MCP). The three phalange bones make up two joints: the proximal interphalangeal joint (PIP) and the distal interphalangeal joint (DIP).

The PIP joint is the most commonly injured joint. Like any joint, it has strong ligaments that help keep it stable. The PIP joint has three ligaments: a collateral (side) ligament on each side of the bone, and a strong volar (palm side) ligament just under the skin on the palm side of the finger.

Jammed Finger

A “jammed” finger is probably the most common hand injury in sport. Because of its position midway between the hand and the fingertip, the PIP joint is the most commonly “jammed” joint. This injury typically occurs when a ball forcefully strikes the tip of the finger, transmitting a force up the finger to the PIP joint. The two bones that form the PIP joint are “jammed” or forced into each other, causing the injury. In lesser injuries, this causes the bones and the surrounding joint to become contused or bruised.



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While there is often no fracture of the bone or significant tearing of ligaments, the joint will swell and become inflamed. It is this swelling which causes the pain and stiffness commonly seen in such injuries.

In more severe injuries, the ligaments may be disrupted. It typically requires two of the three ligaments to be disrupted to cause a dislocation of the PIP joint (Figure 2). These dislocations will often reduce on their own, or be reduced by a player or coach.

Treatment of these injuries depends on their severity. A minor “jammed” finger may only need a short period of rest to allow the pain and swelling to resolve. Athletes often return that same day with little lost time to injury. More severe “jams” or dislocations require reduction of the dislocation and, ideally, an x-ray to confirm a complete reduction of the dislocation and that there are no associated fractures. Ice to reduce the swelling and “buddy” taping to an adjacent finger are the most common means of treatment. Remarkably, most of the dislocations remain stable with no recurrent dislocations. The biggest complaint from athletes is often that the finger feels “fat” or chronically swollen and stiff from the scar tissue that develops after the dislocation as the joint attempts to heal itself.

Occasionally, a PIP dislocation may cause a fracture of the bone around the joint. If this fracture fragment is large enough, it can cause the joint to be continually unstable. Oftentimes, this occurs because the fracture fragment contains a large portion of one of the ligaments. In these cases, the injury may require surgery to repair the fracture, thereby restoring ligament stability to the joint.

Ligament Injury

While ligament injuries to the finger joints such as the PIP less commonly require any surgery, ligament injuries to the thumb oftentimes do require surgery. An injury that deserves special mention is a collateral ligament injury at the base of the thumb. This injury occurs where the thumb meets up with the hand, called the MCP joint of the thumb. It only occurs on the ulnar side (the side of the thumb closest to the index finger). The injury typically occurs when something (or someone) gets in between the thumb and index finger, forcing the thumb to bend back and away from the index finger. This causes the collateral (or side) ligament of the thumb to rupture (figure 3). Unlike a finger collateral ligament injury, an isolated injury to the thumb ulnar collateral ligament can cause joint instability because the tremendous forces placed on the thumb grasping objects. For this reason, the ligament often requires surgery to repair it.

Summary

Finger injuries in sports are common, and can range from mild sprains or “jams” to severe fractures or dislocations. If you think you have suffered a hand or finger injury,



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have your coach, trainer, or physician examine it. Early and appropriate treatment can get you back in the game quickly and safely.

Dr. Honkamp specializes in sports medicine, including shoulder and knee injuries. To reach Dr. Honkamp or to schedule an appointment please call 515-224-5205. Dr. Honkamp is available at DMOS – West, 6001 Westown Parkway in West Des Moines, IA.



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**Figure 1: Bony
Anatomy of Hand**





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Figure 2: Dislocation of PIP
joint of finger





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Figure 3: Ulnar Collateral Ligament Thumb Tear





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