



# GUIDELINES FOR PEDIATRICIANS

## COMMON FINGER INJURIES IN ATHLETES

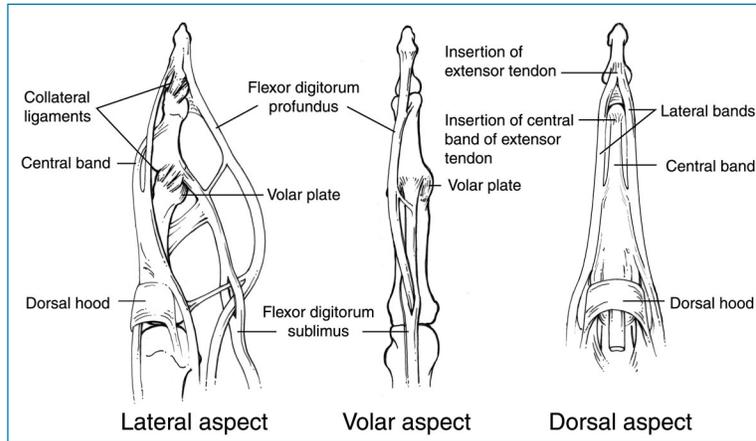
American Academy  
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Issue 5

### Anatomy:



**Dislocations** usually involve the proximal interphalangeal (PIP) joint and should be reduced as quickly as possible. Most are dorsally displaced. If a dorsal dislocation is readily apparent and there is no neurovascular compromise and no angular malalignment or tenderness of the phalanx, a single attempt at reduction is safe. Correction can usually be achieved with gentle in-line traction with slight hyperextension on the finger while stabilizing the finger or hand proximal to the dislocation. Volar dislocations generally require orthopedic consultation. *No long-term damage will likely occur if the dislocation is reduced after appropriate medical evaluation.*

After reduction, evaluate active and passive range of motion and postreduction x-rays. If the joint appears stable, it should be “buddy-taped” to adjacent finger for 2 weeks. Follow with progressive resistance exercises (**PREs - see parent page**). Refer to an orthopedist for an unstable or open injury or fracture.

**“Jammed” finger** is a joint sprain that is not associated with a fracture or dislocation. It usually involves the PIP joint and can be treated with “buddy-taping” and PREs.

**Tendon** injuries that commonly occur are colloquially called “mallet finger,” “Jersey finger,” and “Boutonniere deformities.”

- **Mallet finger** occurs when the distal interphalangeal (DIP) joint incurs severe or forced flexion. The extensor tendon pulls off of the bone or growth plate, causing inability to actively extend the distal phalanx. It requires uninterrupted “no-peek” splinting in full extension for 6 to 8 weeks. Associated fractures or additional concerns require referral to an orthopedist.
- **Jersey finger** is a result of an avulsion of the flexor digitorum profundus tendon. Presents as inability to flex the DIP joint. Treatment requires surgical reattachment.
- **Boutonniere deformity** is caused by an injury to the central slip of the extensor tendon over the PIP joint. The PIP joint is in 15° to 30° flexion with swelling and point tenderness over the dorsal lip of the middle phalanx. The injury is associated with the inability to actively extend the PIP joint, and the DIP joint is hyperextended. Treatment requires uninterrupted splinting of the PIP joint in full extension 24 hours a day for 6 to 8 weeks. The DIP joint should be left unsupported and should be flexed periodically. If an avulsion fracture is present, surgery may be necessary. Orthopedic consultation should be sought for additional concerns.

**Extra-articular fracture** (no joint surface involvement) of the phalanges, which is stable and nondisplaced, can be treated by casting or splint immobilization for 3 weeks. When casting or splinting, always include the joint above and below the fracture and the adjacent digits. The metacarpal phalangeal (MCP) joint should be flexed to 70°, the PIP joint should be flexed at 30°, the DIP joint should be flexed at 15°, and the wrist should be dorsiflexed 20° (*position of function*). Immobilization for more than 3 to 4 weeks will result in stiffness.

**Intra-articular fracture**, or unstable extra-articular fracture of the phalanges, including physeal injuries, usually requires orthopedic consultation.

**Volar plate** and collateral ligament injuries to the PIP joint often occur as a result of hyperextension and lateral forces. Immobilization of the joint in extension for 3 weeks followed by “buddy-taping” to the adjacent finger is usually sufficient for partial tears of the collateral ligament. Instability or associated avulsion fracture, only diagnosable on x-ray, may require surgery.

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Doctor: This side of “Sports Shorts” is for your use; flip side is for photocopying and giving to your patient



## GUIDELINES FOR PARENTS AND ATHLETES COMMON FINGER INJURIES IN ATHLETES

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### Diagnosis

Comparing the injured finger to the same uninjured finger on the opposite hand is always helpful. Seek medical care if the finger does not have its usual range of motion or it looks abnormal when compared to the opposite uninjured finger. Most injuries to the finger involve a direct blow to the tip or forcing the finger beyond its usual range of motion. Damage can involve bone, muscle, tendon, and ligament. Pain, swelling, and deformity are common. If the athlete cannot actively move the finger in all directions or the finger is deformed, immediately call your pediatrician. Simple x-rays of the injured finger are generally all that are needed to identify any possible broken bones or dislocations. CAT scans and MRIs are not routinely necessary. A “jammed” finger is a sprain of the joint-supporting ligaments without an associated fracture (broken bone) and does not have to be “pulled out” forcefully on the field.

### Treatment

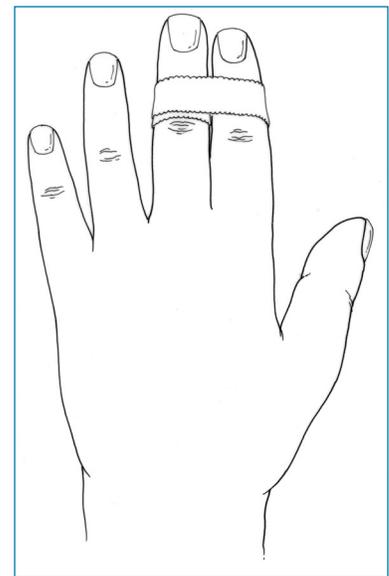
Rest, ice, and elevation are good first therapies for all acute injuries. **Compression wraps can be dangerous if they interfere with circulation to the fingertip or compress (squeeze) the nerves.**

Treatment for most finger injuries involves: **protection, immobilization** (to hold the injured finger in the correct position to heal), and **rehabilitation** (to restore the finger to a healthy and useful condition).

If there is very little or no swelling, minimal point tenderness, and normal appearance and the finger has a full range of motion, parents may **“buddy-tape”** the finger until it no longer hurts (1 to 2 weeks). Simply tape the injured finger to an adjacent finger (preferably a longer, uninjured finger) to provide protection and immobilization.

**When the injury is no longer painful and tender, the athlete may do progressive resistance exercises (PREs) to restore the full range of motion. This can be done by:**

1. **making a fist,**
2. **squeezing a ball,**
3. **trying to crumple up a small dish rag or towel**



Example of “buddy-taping”

Make sure the finger fully straightens out. Exercises can be done initially (48 hours after injury) in a bucket of warm water. Each activity should be repeated 10 to 15 times in 2 to 3 sessions a day until normal function has returned. Some discomfort and soreness should be expected while doing these activities. Even after acute symptoms have subsided and normal function has been restored, some thickening and stiffness of the joint may persist indefinitely, particularly with severe injuries.

**If you are uncomfortable with the length of time needed for healing or have any questions, call your pediatrician.**

Return to play is dependent on the type of fracture, dislocation, or sprain; stability; use of the hand in the sport; and whether it can be protected. Ideally, the finger should be pain free.

Lifetime deformities or disabilities can result from even the most minor injuries but generally are the result of lack of proper treatment, rehabilitation, and protection.

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