

# Sports-Specific Injuries of the Hand and Wrist



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## KEYWORDS

• Sports • Hand • Wrist • Injury • Professional

## KEY POINTS

- There are many sports-specific and injury-specific injuries that are common and unique to a particular sport while rare in the general population. Proper diagnosis of these injuries is predicated on recognition of this association.
- An overly cavalier attitude toward hand injuries in athletes can have devastating complications. Both overtreatment and undertreatment can be deleterious to the athlete.
- Proper splinting for protected play requires an understanding of the demands placed on the hands and wrists of athletes. Having athletes bring equipment to the office for the fabrication of splints can greatly improve the quality of these protective devices for the individual athlete.

## OVERVIEW

Engaging in competitive sports and simple athletic training places the hand and wrist at risk of injury; and up to 25% of all athletic injuries involve the hand or wrist.<sup>1,2</sup> Many injuries in athletes are similar to those that occur the general population, such as hand and finger fractures and dislocations. In the athlete, however, there is a strong tendency for underappreciation of hand and wrist injuries. Too often a more serious injury such as a proximal interphalangeal joint (PIP) fracture-subluxation is dismissed as a “sprain,” “jammed finger,” or “tweaked finger.” Delays in diagnosis and management can have significant added morbidity. Certain sports place exceedingly high and unique physical demands on the hand and wrist, leading to sports-specific and even position-specific injury patterns in athletes that are not often seen in the general population. Given the high demands placed on the hands of athletes coupled with the need for optimal hand function for maximal sports performance, rapidly regaining full function is of paramount importance in this unique patient cohort. When addressing

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these injuries the physician must consider not only treatment of the hand or wrist injury but the athlete as a whole. For many high-level athletes, serious long-term consequences may result from missed playing time. High school athletes with aspirations to compete at the collegiate level may miss out on scholarship opportunities, professional opportunities may be jeopardized for collegiate athletes, and professional athletes may experience direct financial impact while sidelined because of injury. In addition to balancing these implications and physical needs of high-level athletes, there is an equally critical need to understand and appreciate the mental drive and emotional desire to return to competition as rapidly as possible. The pressure to return to play is often furthered by parents, coaches, teammates, trainers, or agents. Historically most hand and wrist injuries were managed by sports medicine physicians, but increasingly hand consultants for not only professional sports teams but even collegiate athletic teams are emerging. As a hand consultant for sports teams, an appreciation of the full spectrum of sports injuries, the magnitude of the impact of the injury on the athlete, and the balance of premature versus delayed return to play is necessary.

Similar to the classification systems used to describe orthopedic conditions, various classification schemes have been developed to group types of athletic injuries. Mirabello and colleagues<sup>3</sup> first described a mechanistic classification of athletic injuries categorized as throwing, weight-bearing, twisting, or impact. Werner and Plancher<sup>4</sup> described a more sports-specific classification including impact (such as with a ball or another competitor), contact with a racquet, stick, or club, and external contact (eg, gymnastics, weight lifting, and rock climbing). The authors do not find these classifications overly useful in the management of athletes, preferring to classify and treat these injuries in the context of injury pattern, sport, position, level of competition, ability for protected play, and time frame for return to sport.

When treating the athlete, it is crucial to consider the level of competition and time of season in making decisions regarding treatment. In the same manner that an identical distal radius fracture will likely be managed differently in an elderly nursing home patient than in a young laborer, the identical athletic injury may be managed differently based on the athlete's level of competition and time of season. For example, whereas no one would consider nonoperative treatment of a flexor digitorum profundus (FDP) avulsion in a junior varsity high school football player, the same injury in a professional athlete during an important season may not unreasonably be managed without surgery. During the early off season, however, this same injury would most likely be treated with surgery in the same professional player. College and high school athletes represent the next tier of elite athletes. Whereas professional athletes' goals and return-to-sport demands are all fairly similar, it is difficult to consider all high school and college athletes as a single entity when making generalized treatment recommendations. In reality, there are top-level high school athletes with college scholarships in the balance, who clinicians choose to manage with an approach virtually identical to that used for professional athletes. Other high school athletes do not have aspirations of a career in sports and are managed less aggressively, more in line with the population at large. Similarly, elite college athletes who may have professional sports careers in their near future may be managed identically to professional athletes. One unique aspect of college athletics is the ability to medically "redshirt" (ie, hardship waiver). Athletes who sustain a potentially season-ending injury, especially in their freshmen and sophomore years, can apply for a medical redshirt based on the amount of playing time they have had during that season. If successful, no eligibility is lost for an additional future year. The decision to redshirt is made in conjunction with the team, school, and player.

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