

# A Guide to Safety for Young Athletes

Every day, millions of youths in the United States and Canada participate in sports activities, from soccer fields and snow-covered slopes to baseball diamonds and ice rinks.

Sports activities are more than play. Participation in athletics improves physical fitness, coordination, and self-discipline, and gives children valuable opportunities to learn teamwork.

Sports activities can also result in injuries. Some of these injuries are minor and some are serious. Still others result in lifelong medical problems.

## Incidence of Injury

Each year, more than 3.5 million sports-related injuries in children under age 15 are treated in hospitals, doctors' offices, clinics, ambulatory surgery centers and hospital emergency rooms in the United States, according to the National Electronic Injury Surveillance System of the United States Consumer Product Safety Commission.

The number of sports-related injuries involving children ages 5 through 14 years includes:

Football: 448,200  
Basketball: 574,000  
Baseball: 252,665  
Soccer: 227,100  
Hockey: 80,700  
Gymnastics: 75,000  
Volleyball: 50,100

## Reasons for Concern

### *Children are Still Growing*

Young athletes are not merely small adults. Their bones, muscles, tendons, and ligaments are still growing. This makes them more susceptible to injury.

### *Growth Plate Injuries*

Growth plates are the areas of developing cartilage where bone growth occurs in children. The growth plates are weaker than the nearby ligaments and tendons. What is often a bruise or sprain in an adult can be a potentially serious growth plate injury in a young athlete.

### *Children Vary in Size and Maturity*

Young athletes of the same age can differ greatly in size and physical maturity. Some youngsters may be physically less mature than their peers and try to perform at levels for which they are not ready.

Parents and athletic coaches should try to group youngsters according to skill level and size, not chronological age, particularly during contact sports. If this is not practical, they should modify the sport to accommodate the needs of children with varying skill levels.

## **Types of Injuries**

Injuries among young athletes fall into two basic categories: overuse injuries and acute injuries. Both types include injuries to the soft tissues (muscles and ligaments) and bones.

### ***Acute Injuries***

Acute injuries are caused by a sudden trauma. Common acute injuries among young athletes include contusions (bruises), sprains (a partial or complete tear of a ligament), strains (a partial or complete tear of a muscle or tendon), and fractures.

### ***Overuse Injuries***

Not all injuries are caused by a single, sudden twist, fall, or collision. A series of small injuries to an immature body can cause minor fractures, minimal muscle tears, or progressive bone deformities, known as overuse injuries.

As an example of an overuse injury is "Little League Elbow." This is the term used to describe a group of common overuse injuries in young throwers involved in many sports, not just baseball. Other common overuse injuries can tear the tendons in heels and knees.

### ***Contact Sports Injuries***

Contact sports have inherent dangers that put young athletes at special risk for severe injuries. Even with rigorous training and proper safety equipment, children are at risk for severe injuries to the neck, spinal cord, and growth plates. Following the rules of the game and using proper equipment can decrease these risks.

## **Diagnosis**

Children and teens often experience some discomfort with athletic activity. Their bones and muscles are growing, and their level of physical activity may increase with a sudden, intense interest in sports, so some aches and pains can be expected. Still, their complaints always deserve careful attention. Some injuries, if left untreated, can cause permanent damage and interfere with proper physical growth.

Whether an injury is acute or due to overuse, a child who develops a symptom that persists or that affects his or her athletic performance should be examined by an orthopaedic surgeon. A child should never be allowed or expected to "work through the pain."

Signs that warrant a visit to an orthopaedic surgeon include:

- Inability to play following an acute or sudden injury
- Decreased ability to play because of chronic or long-term complications following an injury
- Visible deformity of the athlete's arms or legs
- Severe pain from acute injuries which prevent the use of an arm or leg

## **Treatment**

Prompt treatment can often prevent a minor injury from becoming worse or causing permanent damage.

During the evaluation, the orthopaedic surgeon will inquire as to how the injury occurred and will examine the child. If necessary, the doctor may perform X-rays or other tests, to evaluate the bones and soft tissues.

The basic treatment for many simple injuries is often "R.I.C.E.," or Rest, Ice, Compression, and Elevation.

Treatment for a child with any significant injury will usually involve specific recommendations for temporary or permanent adjustment in athletic activity. Depending on the injury's severity, treatment may range from simple observation with minor changes in athletic level to a recommendation that the athletic activity be discontinued.

Some combination of physical therapy, strengthening exercises, and bracing may also be prescribed.

A basic component of any treatment plan is the orthopaedic surgeon's ongoing assessment of the child's physical condition until signs of healing and reduction of symptoms occur.

Successful treatment requires cooperation and open communication among the patient, parents, coaches, and doctors.

## **Guidelines for Preventing Sports Injuries**

The American Academy of Orthopaedic Surgeons, Pediatric Orthopaedic Society of North America, Canadian Orthopaedic Association, and American Orthopaedic Society for Sports Medicine designed Play It Safe! to help parents, coaches, and children prevent sports injuries.

### **Principles**

Play It Safe! encourages children to:

- Be in proper physical condition to play a sport
- Know and abide by the rules of the sport
- Wear appropriate protective gear (for example, shin guards for soccer, a hard-shell helmet when facing a baseball pitcher, a helmet and body padding for ice hockey)
- Know how to use athletic equipment (for example, correctly adjusting the bindings on snow skis)
- Always warm up before playing
- Avoid playing when very tired or in pain

### **Proper Training**

Young athletes need proper training for sports. They should be encouraged to train for the sport rather than expecting the sport itself to get them into shape. Many injuries can be prevented if youths follow a regular conditioning program with incorporated exercises designed specifically for their chosen sport.

A well-structured, closely supervised weight-training regimen may modestly help youngsters prepare for athletic activities. Young athletes should have their coaches help them design a conditioning program suited to their needs.

### **Qualified Coaching**

Parents should make sure their child's coaches have the appropriate qualifications to supervise a particular sport, provide well-maintained safety equipment, and help with proper conditioning for that sport.

### **Do Not Use Steroids**

An estimated 500,000 young athletes, boys and girls, use black-market anabolic steroids to improve their athletic performance. Steroids have been shown to increase muscle mass, but they can cause serious and potentially life-threatening complications and should be avoided.

### **Make It Fun**

Youth sports should always be fun. The "win at all costs" attitude of many parents, coaches, professional athletes, and peers can lead to injuries. A young athlete striving to meet the unrealistic expectations of others may ignore the warning signs of injury and continue to play with pain.

Coaches and parents can prevent injuries by fostering an atmosphere of healthy competition that emphasizes self-reliance, confidence, cooperation, and a positive self-image, rather than just winning.

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