



## Sports and Recreation Safety



### Key Facts

- More than 38 million children and adolescents participate in sports each year in the U.S.
- Nearly three-quarters of U.S. households with school-age children have at least one child who plays organized sports.
- Each year, more than 3.5 million children ages 14 years and under receive medical treatment for sports injuries.
- Approximately two-thirds of all sports-related injuries leading to emergency department visits are for children. The rate and severity of sports-related injury increases with a child's age.
- From 2001 through 2009, it is estimated that there are 1,770,000 emergency department visits, 6 percent of these for traumatic brain injuries, among children ages 14 and under for injuries related to sports or recreation.
- Though rare, traumatic brain injury is the leading cause of sports-related death.
- Approximately one out of five traumatic brain injuries among children are associated with participation in sports and recreational activities.
- More than 90 percent of sports-related concussions occur without the loss of consciousness.
- The most common types of sport-related injuries in children are sprains (mostly ankle), muscle strains, bone or growth plate injuries, repetitive motion injuries, and heat-related illness.
- In 2009, more than 365,000 children ages 14 and under were treated in emergency departments for either football or basketball-related injuries.

### Where, When and How

- Most organized sports-related injuries (62 percent) occur during practice rather than games.
- A national survey revealed that approximately 27 percent of parents often do not take the same safety precautions during their child's practice as they would for a game.
- Collision and contact sports are associated with higher rates of injury, however, injuries from individual sports tend to be more severe.
- Each year, approximately 715,000 sports and recreation injuries occur in school settings alone.
- The four activities with the most injuries to bones and muscles include bicycling, basketball, football and roller sports. These four sports lead to 1.5 million medically treated injuries among children ages 5 to 14.
- It is estimated that up to 50 percent of injuries seen in pediatric sports medicine are related to overuse.
- For children ages 8 to 13, the rate of sports-related concussions was highest for football and ice hockey players, when taking into account participation rates.
- Among children ages 14 and under, the top five sports associated with head injuries include: cycling (40,272 injuries), football (21,878 injuries), baseball and softball (18,246 injuries), basketball (14,952 injuries) and skateboards/scooters (14,783 injuries).
- For males, the highest risk of concussion in organized sports is from football, while among females, soccer and basketball are the sports with the highest risk.

- In 2009, more than 26,000 injuries were sustained by children ages 14 and under involving skiing, snowboarding or snowmobiles.
- In 2007, it is estimated that over 25,000 children ages 14 and under are treated in emergency departments for sledding-related injuries.

## **Who**

- Children's bones, muscles, tendons and ligaments are still growing, making them more susceptible to injury. Older children are more likely to suffer from sports-related injuries than younger children.
- One study found that the number of children admitted to hospitals for sports-related injuries was six times higher for males than females.
- Children who do not wear or use protective equipment are at greater risk of sustaining sports-related injuries. Damaged or unavailable equipment are reasons for children not wearing protective gear.
- Compared to adults, children are at increased risk of traumatic brain injuries in terms of increased severity and prolonged recovery periods.
- Females are reported to have higher rates of concussion than males in similar sports.
- Since 1945, more than 90 percent of head injury-related deaths from sports have occurred to children in high school or younger.
- Children are at increased risk of heat illness. Compared to adults, children have a lower sweating capacity and produce more metabolic heat per unit of mass during physical activities.
- Children just beginning summer practices for organized sports are particularly vulnerable to suffering some form of heat illness such as dehydration or heat stroke.
- Children who participate in two or more sports that emphasize the same body part (for example, swimmers and baseball pitchers) are at higher risk of overuse injuries than those who participate in sports with different muscle emphasis (for example, track and golf).
- Children living in non-metropolitan areas or in areas with lower community income are at greater risk of sports-related injury leading to emergency department visits.
- Black children are one and a half times more likely than white children to suffer sports-related injuries.

## **Proven Interventions**

- Coaches should be trained in first aid and CPR, and should have a plan for responding to emergencies. Coaches should be well versed in the proper use of equipment and should enforce rules on equipment use.
- Helmets have been shown to reduce the risk of concussion, particularly in sports such as football, skiing and snowboarding.
- Children should have access to and consistently use the appropriate gear necessary for each respective sport.
- Among bicyclists, skateboarders and scooter riders, wrist guards can reduce wrist injuries by up to 87 percent, elbow pads can reduce elbow injuries by 82 percent and knee pads can reduce the number of knee injuries by 32 percent.
- Proper hydration and recognition of heat illness signs and symptoms (such as nausea, dizziness and elevated body temperature) can help reduce the risk of severe sports-related heat illness.
- The American Academy of Pediatrics recommends that children take at least one day off from organized physical activity each week and at least two to three months off from a particular sport per year to avoid overtraining or burnout.

- Children enrolled in organized sports through schools, community clubs and recreation areas that are properly maintained assist in injury prevention.
- Recent studies show that a significant number of both parents and coaches are not familiar with concussions, recognition of concussion signs and when to keep young athletes from returning to play. To improve care for young athletes, the CDC has published educational “Heads Up” toolkits for parents, coaches and teachers.
- Sports programs with adults on staff who are Certified Athletic Trainers are ideal because they are trained to prevent or provide immediate care for athletic injuries.

### **Costs**

- Among children ages 14 and under, injuries from popular sports cost the U.S. public more than \$49 billion each year.
- Sports injury hospitalizations among children ages 5 to 18 result in annual charges of \$113 to \$133 million dollars.
- A \$3 mouth guard can help reduce injury to the mouth, teeth, lips, cheeks and tongue. Research shows that mouth guards reduce the risk of losing a tooth, potentially saving \$10,000 to \$15,000 in lifetime dental costs.

### **Laws and Regulations**

- Twenty-one states, the District of Columbia and 200 localities have enacted some form of helmet legislation. Eight states and the District of Columbia also require children to wear a helmet while participating in other wheeled sports, such as skateboarding or inline skating.
- Thirty-three states have enacted laws to mitigate the risk of concussions for youth athletes. These laws generally require public education and training in concussion identification for coaches, school personnel, students and their parents.