Encounters with balls, fingers, and elbows are common mechanisms of eye injury in patients who participate in sports. Sports related eye injuries are frequent and more likely to occur to weekend athletes who are not in top physical condition, and in school-age competitors who may have more enthusiasm than skill (Mills, 1985). Skills such as coordination, balance, reaction time, speed, and strength are not well developed in young athletes, making them more vulnerable to injuries (Zagelbaum, 1993). Professional athletes also sustain numerous eye injuries, some of which are career-ending. Players should be encouraged to protect their eyes during high-risk activities so as to reduce the number and severity of eye injuries.

**Key Points**

- Basketball is the leading cause of sports related eye injuries in the U.S. each year.
- For children ages 5 to 14, baseball accounts for the most eye injuries.
- Of the 2.4 million eye injuries each year in the U.S., about 100,000 are sports related.

**Sport-Specific Trends**

Of the more than 2.4 million eye injuries that occur in the U.S. each year, 100,000 are sports related (Stock & Cornell, 1991). In 1997, selected hospital emergency departments treated 32,789 eye injuries that were sports or recreation related, according to estimates by the U.S. Consumer Product Safety Commission (CPSC) in Washington, DC, and Prevent Blindness America (see Table 1). According to those groups, the activities resulting in the most eye injuries are basketball (23.0%) and baseball (11.0%).

**Basketball**

Basketball is a fast-paced sport where close, aggressive contact produces most of the injuries. An opponent’s elbows, hands, and fingers are always moving in untoward directions, and players in all positions are at risk. Each year, basketball is the leading cause of sports related eye injuries in the U.S. (Starkey & Zagelbaum, 1996). In an ongoing prospective study of eye trauma among players in the National Basketball Association (NBA), Zagelbaum et al. (1995) are finding that players on offense are most at risk. Fingers, hands, elbows, or contact with the ball itself may all cause serious ocular injuries. Eye injuries in the NBA occur at the rate of 1.4 per 1,000 athletic exposures (Starkey & Zagelbaum, 1996).

**Baseball**

Baseball, one of the most popular sports played throughout the world, is estimated to cause 900,000 injuries annually; 170,000 of these are facial injuries (Jones, 1989; Zagelbaum, 1996). Most baseball related injuries result from contact with the ball. Baseball injuries are most numerous among children 5 to 14 years of age. Approximately 5 million children participate in baseball and softball each year, of which 2.5 million belong to Little League teams (Hart, 1992). Younger batters may be at greater risk of being hit by a pitched ball because of lower skill levels, slower reaction times, wide variations...
Football

Over one million youngsters participate in organized football programs. Football is responsible for approximately 432,000 injuries per year in the U.S. (Jones, 1989). It is a contact sport, and eye injuries are usually caused by blunt injury from a finger, which can easily fit through the open area of an opponent’s face mask and strike the eye. In addition, hands may slide up under the face guard and impact the eye. In the U.S., football is responsible for 5% of all eye injuries.

Racket Sports

Some 40 million Americans play racket sports. Ocular injuries in this sport are usually severe, considering that velocities of a projectile ball or shuttlecock can reach over 100 mph. According to Vinger (1997), the risks of eye injuries for 100,000 playing sessions are as follows: squash, 5.2%; badminton, 3.6%; tennis 1.3%. In tennis, players running toward or by the net are at greater risk than those who remain in the backcourt. Seelenfreund and Freilich (1976) described 10 patients who sustained eye injuries from a high-speed tennis ball. Seven of them required either retinal surgery, laser, or both for retinal detachments and/or tears.

Boxing

Boxing causes more damage to the eye than any other sport. The mechanism of injury in boxing has been commonly described as coup, contrecoup, and equatorial expansion. The coup is direct injury caused by the blow. Contrecoup injury occurs distally from the original injury and may be conceptualized as a line of force traversing the eye and causing damage at all interfaces. Equatorial expansion occurs as the globe is compressed.

Smith (1988) studied the results of 118 ocular examinations over an 18-month period and found that 25 boxers had ocular damage. In a prospective study of 74 visually asymptomatic professional boxers who underwent routine visual examinations, Giovinazzo et al. (1987) found that 66% incurred ocular damage. Among those injured, 58% developed vision-threatening complications and 24% had retinal tears. Boxers may be reluctant to complain of visual problems for fear of jeopardizing their career.