Wheeled Sports: Preventing Injuries in Children

In the United States, children are often the victims of various forms of unintentional injury. In fact, unintentional injuries are the leading cause of death in children and adolescents.[1] "Unintentional injury" is a broad term that can include burns, poisonings, or injuries that result from vehicle crashes or falls. Often, people may describe these injuries as "accidents" (for example, a "bicycle accident"). However, those who work in the field of injury prevention prefer not to use the term "accident" because this word implies a random event.[2] In fact, injuries result from specific events that are often predictable and are therefore preventable. For example, a child may suffer a broken arm (the injury) after riding through a busy intersection and colliding with a car (the event). In this case, the broken arm could have been prevented if the collision had not occurred. One could predict that collisions are more likely to occur at busy intersections. Thus, to prevent the broken arm, the child could have avoided the intersection, or approached the intersection in a safer fashion by stopping, and walking his bike across the intersection.

Bicycles, skateboards, scooters, and in-line skates are popular wheeled sporting activities among children and adolescents, and carry a significant risk for injury. An estimated 67-85 million Americans ride bicycles[3,4] and 70% of children ages 5 to 14 years ride bicycles.[5] More than 500,000 people are treated for bicycle related injuries in emergency departments each year.[3] The highest rate of bicycle injuries occurs in children 5 to 14 years of age.[2] Head injuries account for one third of bicycle injuries seen in emergency rooms.[3] Facial and musculoskeletal injuries as well as cuts, bruises, and scrape are also common among bicycle riders. Between 700 and 900 people die from their bicycle related injuries each year in the US.[3] 90% of people killed in 2000 were not wearing a helmet while bicycling.[6]

5.8 million children and adolescents younger than 18 years old ride skateboards, 750,000 of which skateboard weekly. Skateboarding is more popular among males and consequently, injuries predominantly occur in males. Skateboarding injuries result in 50,000 visits to hospital emergency rooms annually, and 1,500 hospitalizations. 25% of hospitalizations are due to collisions between skateboarders and cars. The most commonly injured areas while skateboarding are the ankles, wrist and face.[7]

In-line skates, introduced in the 1980s, are similar to roller skates, but utilize low-friction wheels. 37 million Americans of all ages,[8] and 17 million people under 18 years engage in in-line skating.[9] Each year, some 153,000 injuries are attributable to in-line skating.[8] When they fall, in-line skaters tend to fall forward on to their outstretched arms. Thus, injuries to the hands and arms, especially fractures and dislocations are common.[10] Head and leg injuries also occur.

Most recently, in 2000, portable, light-weight scooters with low-friction wheels, similar to in-line skates, were introduced and quickly became very popular. In 2000, more than 11 million people used scooters, and 40,500 injuries were treated in emergency departments that year. 85% of scooter injuries were in children younger than 15 years of age.[11] Falls and scooter injuries tend to occur when the wheels hit small objects, while performing tricks, or while attempting to stop.[12] Common scooter related injuries include fractures, dislocations, sprains, cuts, and bruises, and affect the wrist, elbow, lower arm, knee, head and face.

Considerable evidence derived from research suggests that preventative strategies such as helmet use can prevent or decrease the severity of injury. For example, bicycle helmets have been shown to lower the risk of head and brain injury by 63 to 88%.[3] Yet some children and adolescents continue to neglect safety equipment. Thus, many preventable injuries, some severe, continue to occur, resulting in much pain, suffering, anxiety, disability, and substantial medical cost.

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