

Pediatric Injury in the Spring and Summer

Injuries in children are greatly influenced by weather and season. One study of over 15,000 children demonstrated that emergency rooms visits for trauma in children peak in the month of June. While each season has its most common culprits—football injuries in the fall, sledding and snowboarding injuries in the winter, playground, trampoline, and lawn mower injuries in the spring and summer—as a pediatric orthopedic surgeon, I see far more fractures that require surgery in the spring and summer. As these months are upon us, parents should be aware of the most common injuries, ways to minimize the risks, and what can be expected if your child has the unfortunate experience of sustaining one of these injuries.

When I was a resident, when sleep was at a premium, I used to joke that if we could just get rid of backyard trampolines, scooters, motorized vehicles for children and monkey bars, I would be far more rested. The fact is, though, that our children are going to participate in all of these activities, and we can not always protect them. I, myself, was the proverbial “wild child.” As an ex-gymnast and thrill seeker, I have had more than my share of fractures. People used to differentiate between my twin sister and me by who had the cast on at that time. I am convinced that my family helped finance my orthopedic surgeon’s back yard pool and that my parents were fearful that social services were going to knock on their door at any moment. Accidents happen and are terrifying for both the child and parent, but knowing how to recognize a more serious injury and what to expect can alleviate some of that fear.

Lawn Mower Injuries

Spring comes, grass grows and the lawnmowers come out. Lawn mowers are a highly unrecognized source of significant injury to our children. Between 1990 and 2004 there were 140,700 lawn mower related injuries in children with a mean age of 10. These injuries included lacerations, soft tissue injuries, burns and fractures. Many of these injuries required surgical intervention ranging from repair to amputation. These injuries can be devastating with a high risk of infection, soft tissue and bone loss or growth arrest of the susceptible growth plates in small children.

When it comes to injuries from lawn mowers, prevention is the key. Many standards of safer product design have already been instituted including ways to prevent feet and toes from coming into contact with the blades, shielding of hot mower parts and a default setting which prevents mowing in reverse. This last feature can be overridden, but should require the operator to turn around to do so and therefore view any potential little feet behind the mower before operating it in reverse.

Product safety is one thing, but what can a parent do to prevent this injury? First, children should not be playing outdoors while the lawn is being mowed. Be obsessively aware of where your children are while you are operating this dangerous equipment. Children tend to dart around quickly and enquiring little hands and feet like to check out moving parts. Next, ride along mowers may seem like a fun ride for you and your kids, but usually there are no safety belts and even with the best intentions, a child can fall under your direct supervision and come in contact with a moving blade or metal part which is hot enough to burn them.

Trampoline Injuries

I googled “trampoline injuries” to see what I would find. The answer: over 550,000 references. In 2004, the Consumer Product Safety Commission found that more than 89,000 people were sent to emergency rooms with trampoline-related injuries. A study by the Hasbro Children's Hospital in Rhode Island, found that spring and summer are the time when trampoline injuries hit their peak, and 91% of them happen at home. Some of the more common injuries include fractures of the ankles, wrists, and elbows, concussions, spinal injuries and there have even been six reported deaths since 1990. Contrary to common belief, nearly three quarters of these injuries occur while the child is on the trampoline mat itself and less than 25% are from falls off the trampoline. Mechanisms of injury include falling on the mat, falling onto the springs or metal supports, colliding with other jumpers, and falls off the trampoline. The majority of these injuries (83% by one University of Utah study) occur when there is more than one jumper at a time on the trampoline. This same study found that 37% of the injuries are in children under the age of six.

The American Academy of Pediatrics advocates against the use of home trampolines, but if your children have access to one and are going to use it, there are ways to promote a safer environment. First, parental supervision, alone, will not prevent injury, but it may prevent some of the more common misuses of the device. The most common misuse and the most common cause of injury is having more than one jumper at a time on the trampoline. The lighter weight child is more than five times as likely to be injured in this scenario. Some believe that if we could enforce the following of this one rule, we could dramatically decrease the number of trampoline injuries. Next, spotters who are big enough to catch or slow the fall of a child are recommended on all sides of the trampoline. To this same end, a surrounding net may decrease the injury rate, but this has not been extensively proven. Next, if possible, place the trampoline jumping surface at ground level over a pit. Finally, all supporting bars and springs should be well padded.

Playground Injuries

The National Center for Injury Prevention and Control states that each year in the United States, emergency departments treat more than 200,000 children ages 14 and younger for playground-related injuries with children ages 5 to 9 being at the highest risk. This being said, play is an essential component of healthy development in children. Playgrounds provide an opportunity for children to develop motor, cognitive, perceptual and social skills. So, what can you do as a parent? First, supervise children at all times and intervene when there is pushing, shoving, and crowding around equipment. Next, make sure playground equipment is age appropriate. Maximum fall height should be five feet for preschool-aged children and seven feet for school aged children. Finally, avoid playgrounds with asphalt, concrete, grass, and solid surfaces under the equipment. Look for surfaces of hardwood fiber, mulch chips, pea gravel, fine sand or rubber to a depth of at least nine inches.

Despite my best efforts, my child has an injury

No matter how careful we are and how safety conscious we are, accidents do happen. Most children under five don't understand "faking it." If they are limping, or do

not want to use their arm, something is probably wrong. Rest, ice, compression (or immobilization), and elevation are useful, but if the child has persistent complaints, take them to be evaluated either at the ER or urgent care center or pediatrician or orthopedic surgeon. If there is bruising or swelling, there is likely a real injury. Children are much more likely to crack through the weaker growth plates or bones than to tear ligaments or tendons typical of an adult sprain. In fact, any child with open growth plates who is tender directly over that growth plate should be treated as a fracture even in the presence of negative x-rays. Growth plates look like a black line on an x-ray as does a fracture, and sometimes we treat based on our clinical exam alone. Generally these types of injuries can be treated with a cast alone.

Some injuries are more obvious. If there is obvious deformity or any bleeding in the area of a deformity, go immediately to the ER and do not stop for snacks on the way. If your child will need surgery or sedation, it is much safer on an empty stomach. When and if possible, stabilize the arm or leg or wrist on a board or by just wrapping a heavy blanket around it. The less it moves, the less pain your child will have.

In children, deformities from fractures can often be treated under sedation in the emergency department and then casted. The most common of these would be fractures of the wrists and forearms and those of the shin bones and ankles. The wonderful thing about growing bones is that they remodel. As long as the bones are aligned within certain acceptable ranges, the bones will remodel as they grow and straighten out over time. Exceptions to this are fractures around the elbow and fractures that include joint surfaces. Many of these fractures may need surgical repair and stabilization.

Finally, any fracture that has a laceration in the skin over it, must be considered an “open” fracture. This means there is contact between the outside environment and the bone. These fractures are at high risk for infection will almost always require IV antibiotics and debriding or cleaning in the operating room. These are considered surgical emergencies and should be transported directly to the hospital emergency room.

Spring and summer are a wonderful time of outdoor activities, but every parent should be aware of the risks, talk to their children about safety, and have a plan should injury ensue.