

Orthopaedic Observations

A Matter of Medicine...

TM Pending

Play It Safe!

By Alan M. Reznik, MD, MBA



In the U.S. alone there are over three quarter million ER visits each year by children under the age of 15. A major cause of this is the alarming rate of injury during sports. The "Play It Safe" program was created by the American Academy of Orthopedic Surgeons (AAOS) to increase awareness and to reduce injury to children during these sporting activities. Many studies show that the majority of injuries occur in un-

organized or casual sports, like pick-up games of basketball, baseball and football. Still significant, organized league sports make up about one third of the injuries. Reducing the risk of both injury rates is a goal of the "Play it Safe" campaign. There are four topics that require special attention when it comes to children and sports:

- 1- *Young athletes are not just small Adults*
- 2- *Growing children's injuries create special concerns*
- 3- *Diagnosis and treatment offered to children*
- 4- *Prevention*

Young Athletes are not just small adults

Children are growing all the time. This gives them some special advantages over adults. To start, their bones have a little more spring and bend before they break. They are typically lower to the ground and have lower body weights, making most minor falls of little consequence. At the same time, they tend to be less prepared for injury and their sense of danger is far less than an adult's. Children also grow at differing rates at different times during development. A sudden growth spurt or a change in limb length can create the gawky behavior that makes some children seem accident-prone. These factors alone help explain some of the injuries prevalent in child athletes.

Sports injuries I've seen in children vary from a child simply exceeding his or her physical limitations to an accident occurring during an unsupervised activity in an unsafe environment. Adults have to be aware of their own children's limits. Some 14 year olds are fully-grown, while others are not. I often hear stories of children in an age-based league playing against kids who weigh 50 to 100 pounds more. Many coaches and parents take performance at very young ages to an extreme, and lying about a child's age or weight for an unfair advantage is simply wrong. Worse yet, studies have shown that in the late 1990's, up to 500,000 young athletes were using black market steroids to increase muscle mass. The risks of these drugs are widely known, serious for children, and

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potentially life threatening. These “performance enhancing” products should be completely avoided. Sports for children should always be fun, not unhealthy or dangerous.

Growing children’s injuries create special concerns

The bones in children grow in specialized areas near each joint called growth plates. These areas are softer than calcified bone in the middle of the limbs and therefore are more susceptible to injury. When an injury to a growth plate occurs, future growth and alignment of the limb is at risk if it is not treated properly.

Growing children’s bones can buckle and bend without breaking all the way. This creates fractures in the middle of the bone, which are often known as “green stick” fractures since they resemble what happens when you try to break a growing tree branch. These green stick fractures break, deform and stay deformed even though part of the bone (branch) is still intact. These “incomplete” fractures or breaks also require special attention. Both growth plate and green stick fractures affect bone growth. The growing child can remodel broken bones and overcome minor disturbances in growth. The child’s age, the fracture location, the bone’s angulation (amount of bend) and the fragment’s displacement (separation) are important factors in determining how well a fracture will heal without orthopedic intervention. When it is clear that a deformity will result, prompt treatment is necessary.

Diagnosis and treatment offered to children

Occasionally, because the growth plates are not calcified, a diagnosis can be much more difficult to make. The cartilage and growth plates cannot be seen directly on normal x-rays. In these cases, a precise history of the injury (force involved, position of the limb, direction of impact and anatomic location of the injury) helps in making a correct diagnosis. Many times, there is no substitute for an examination by experienced hands because findings on an x-ray are often only seen once the healing process is well underway. Sometimes a missed diagnosis becomes a missed opportunity for a simpler treatment.

In children, some injuries can be treated with a sling, splint or cast while others require perfect reduction to realign the growth plate or the joint space. The goal of all treatment should be to use the least invasive method to allow a child’s bones to heal with the lowest risk of deformity and to future growth.

Prevention

Young athletes should be encouraged to play in organized or supervised sports. They should have training or specific stretching and exercise programs to prepare them for the sport. The sport itself with or without preparation should not be their only exercise. A child’s coach and parents should take into account the child’s age, height and weight before matching them in age-only based sports. Parents should be sure the coaches have appropriate training and qualifications to coach their children. The children must have access to a safe playing area and appropriate well maintained equipment. Field conditions, weather conditions and available supervision should always be a factor when deciding to have a competition. In hot weather parents should be sure the children are well hydrated and beware of the risks of hyperthermia on very hot and humid days.

Children should warm up and stretch for sports. They should drink plenty of fluids. They should have appropriate fitting equipment. They should tell the supervising adult when they are hurt instead of trying to play through painful injuries. Safety rules for growing athletes, such as pitch counts, should be strictly followed, and children should not be played in multiple leagues in the same sport in the same season to “get around” these rules no matter how great the parents think they are. The rules are designed to protect growing children from injury; ignoring the rules will risk serious growth injury and only shorten their playing careers. Children should never be given “performance enhancing”drugs or supplements.

Protective gear is also important and sports specific. Helmets for biking, skiing, and roller-skating are no longer optional. Mouth guards, shin guards and plastic face guards have helped to reduce injuries and should be used. Elbow pads and wrist protectors should be worn for inline skating, even on pathways designed for skating. Binding releases for ski’s should be calibrated to the child’s skill level, height, and weight each season.

The AAOS promotes the idea that “youth sports should always be fun. The ‘winning at all costs’ attitude of coaches, parents, professional athletes and peers can lead to injury.” Remember, having unrealistic expectations can lead a child to continue play despite warning signs of injury. This puts a child at increased risk. Lastly, the AAOS reminds us, “Coaches and parents can prevent injuries by fostering an atmosphere of healthy competition that emphasizes self-reliance, confidence, cooperation and a positive self-image.”

Dr. Reznik is Board Certified in Orthopedic and Arthroscopic surgery, specializing in Sports Medicine. A Westinghouse Science talent search honoree, he received his Bachelors of Science from Columbia University's School of Engineering. There, as a member of a research group studying Sudden Infant Death Syndrome he became interested in Medicine. Later, while attending Yale University School of Medicine, his expertise in engineering merged with his love of medicine. He pursued a specialty in Orthopaedic Surgery. During his Residency at Mount Sinai Medical Center in NY, he served as court physician at the US Open Tennis Tournament for four years and was then selected for a fellowship at Oxford University. He then completed a fellowship in Sports Medicine at University of California, San Diego with Dr. Dale Daniel, a world-renowned knee ligament expert, and Dr. Raymond Sachs, a ground breaking shoulder expert.

In New Haven, Connecticut, Dr. Reznik was a founding member of the Yale-New Haven Hospital's Orthopaedic Trauma team and awarded the Yale Residents' Teaching Award. He served on the game organizing committee for the 1995 Special Olympics, where he helped care for special athletes from over 105 countries. He was also chosen to be the team physician for the New Haven Knights professional hockey team. Dr. Reznik has served as a volunteer surgeon on a medical mission to New Orleans in the aftermath of Hurricanes Katrina and Rita in 2005. The team visited many sites and set up a clinic in a domed stadium to care for displaced residents of New Orleans living there without health care. In 2008, he visited Cuba and Bolivia, Cuba on a humanitarian mission and in Bolivia to see first-hand, the role of "Save the Children," in the poorest-of-poor countries in South America.

Dr. Reznik was selected by Connecticut Magazine as one of the "Top Docs" in the state by patients, nurses, physicians from other specialties and his Orthopedic Surgeon peers in years 2000, 2001, 2004, 2005, 2007, and again in 2009. A member of the Arthroscopy Association of North America since 2001, he has also been named as one of "America's Top Physicians" by the Consumer's Research Council of America on many occasions over the last several years, and again in 2009.

Dr. Reznik has invented several instruments for Knee and Shoulder Arthroscopy. He has a number of patents pending and his inventions are designed to improve the effectiveness of arthroscopic surgery. Currently his arthroscopic suture grasper is being marketed by Johnson and Johnson and his arm positioning device is being manufactured by Innovative Medical Products. These products were introduced at the 2009 American Academy of Orthopedic Surgery.

In an academic private practice for twenty years, Dr. Reznik is the managing partner of The Orthopaedic Group, LLC. He serves on the Board of Directors at Ezra Academy. He enjoys golf. He writes articles for the group's web site, our monthly newsletter, and our patient magazine. Each year, he writes his own holiday greetings and his first novel will be available online later this year. Dr. Reznik enjoys caring for pediatric and adult recreational, competitive, professional and 'working' athletes each and everyday.