



PREVENT INJURIES IN YOUNG ATHLETES

By Dr. D. Christian Clark, M.D.

The school year has officially started and students have returned to the classroom and their extracurricular activities. Of the more than 65,000 students that attend CMS middle schools and high schools, over 16,000 will be involved in one or more interscholastic sports. In addition, many students are involved in athletics outside of the school

system. Along with this high level of participation in organized sports comes an increased risk of a sports-related injury.

It can be helpful to separate common student-athlete injuries into three groups. Doing so allows an appreciation of the underlying causes and helps us to understand general treatment guidelines.

EVERYDAY MOVEMENTS

The first group includes general injuries from falls and twisting events. These injuries result in sprains (injuries to ligaments), strains (injuries to muscle) and fractures (injuries to the skeleton).

Sprains and strains often need rest with decreased activity and occasionally will require immobilization for two to six weeks. Fracture treatments vary depending on the location and severity and may require immobilization or surgical intervention. Though young bones can heal faster than the adult skeleton, it often takes four to six weeks of recovery before the student is ready to resume participation in sports.

Using good form and appropriate safety devices can decrease the risk of these injuries. When injuries do occur, they are often associated with pain, swelling and an inability to continue with activities. Oftentimes, these injuries should be evaluated by a medical professional – a simple exam and X-Ray is usually enough to formulate a plan for the athlete's safe return to sports.



THE ACTIVE ADOLESCENT

The second group of injuries is the result of over-use to the growing skeleton. These irritations can occur both in the young athlete and in the non-athlete. The complaints are centered over areas where active growth is occurring, such as the knee or foot.

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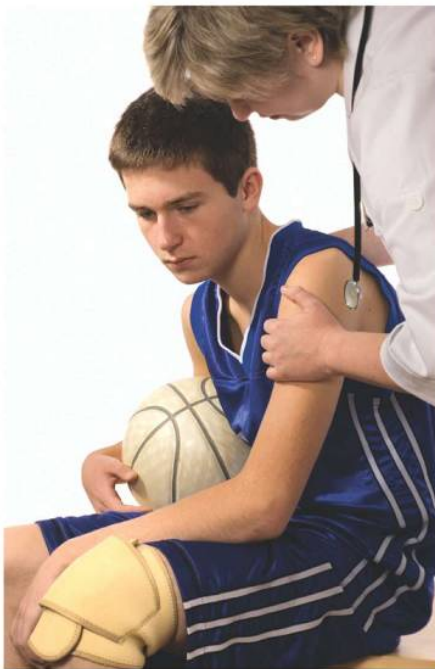
It is most common among children experiencing a growth spurt while involved in a period of increased physical activity.

The two most common diagnoses are Severs disease and Osgood-Schlatters disease. Severs is an irritation at the back of the heel. It is usually seen in running athletes and is common in sports that use cleats. Although it can be significantly uncomfortable, it does not lead to any long-term issues and can be treated with shoe inserts.

Osgood-Schlatter's is an irritation at the top-front of the shin and is often associated with a prominent bump. It is more common in running and jumping sports and is often seen in children who are taller than average. It can be treated with anti-inflammatory medicine (like ibuprofen or naprosyn) and a knee strap. Occasionally, athletes will need to decrease their activity level for a short period in order to rest the injured shin.



THE STUDENT ATHLETE



The third group consists of sports-specific injuries, occurring more frequently in certain types of athletes. These conditions often develop from the repetitive stress or high-energy events involving specific anatomic areas. The dynamics of playing each sport can predispose the individual to certain injuries.

ELBOW

Elbow injuries are more common in throwing sports, gymnastics and tennis. The cartilage growth areas of the elbow can be

overpowered by the muscular development of the young athlete and result in an injury. Though this process starts as inflammation to the area, it can progress to long-term damage if not treated.

Due to increasing concerns for the adolescent elbow, strict rules have been developed regarding the number of pitches a young baseball player can throw and the length of time between pitching. These guidelines become difficult to follow when the athlete is participating on more than one team during a given season. Though there is debate over the types of pitches allowed at various ages, it is agreed that proper form is essential to prevent injuries. It is suggested that a person stop pitching immediately if they develop pain on the inner aspect of their elbow. It is advisable to see a physician if the pain continues as they try to resume activities.

Gymnasts and cheerleaders who develop elbow problems often have discomfort over the outer aspect of their elbow. As they perform handstands, vaults and somersaults, the arm becomes a weight-bearing joint, which it is not optimally designed to do. The cartilage growth areas are at risk of becoming injured and can break off. If the athlete complains of pain or loss of motion, the elbow should be evaluated to identify any injury that requires treatment.

SHOULDER

Shoulder pain is more common in throwing sports, tennis and swimming. The repetitive motion of bringing the hand above shoulder level can lead to an irritation of the rotator cuff (a collection of muscles that support the shoulder). Though the discomfort can be similar to that experienced by adults, the risk of having a rotator cuff tear is much smaller. Often these athletes will need a period of decreased activity, medication and physical therapy to decrease the inflammation.

Shoulder dislocations can occur in the young athlete involved in contact sports, such as football and wrestling. These often require a medical professional to reduce the shoulder back into place. Unfortunately, the risk of repeat dislocations is higher in younger patients than it is in adults. Often the original injury will be treated with immobilization and physical therapy; if a second dislocation occurs, a surgical treatment may be needed.



located over the outer aspect of the hip, it can be caused by the IT band (a layer of fascial tissue) rubbing over a prominent area of the thigh bone and may occasionally be associated with a snapping sensation. These symptoms often improve with medication, stretching exercises and rest.



When the discomfort is localized over the front of the groin, the hip pain may be more significant in nature. If a patient has pain with standing or walking, they should be seen by his physician for an exam and x-rays. If the symptoms are only noticed with running and jumping, a short period of rest and a trial of an anti-inflammatory is reasonable.

KNEE

Knee injuries are more common in sports that require cutting activities (quickly turning to the left or right), such as football, soccer and lacrosse. Similar to adults, children can injure the articular cartilage (the coating that lines the ends of the bone in the joint), the meniscus (shock absorbers in the joint) and the

BACK

Back pain can be seen in a number of athletes in various sports. If the discomfort doesn't prevent activities, it can be treated with medication and physical therapy for core strengthening. If the discomfort is associated with weakness, numbness or an inability to return to activities, it should be evaluated.



HIP

Participants in running sports, dancing and cheerleading have an increased risk for discomfort in the hip region. When the pain is



ligaments that cross the knee joint. Patients often present with a memory of a specific moment when the pain developed. It can be associated with an inability to continue sports, tenderness to touch and swelling. An exam of the knee, X-Rays and possibly an MRI will help to define the injury to allow appropriate treatment.

An ACL tear is often the concern of the athlete and parents, when a person is unable to play after a knee injury. The disruption of the ACL is often appreciated on exam, though x-rays are needed to evaluate the knee. Unlike adults, young athletes can fracture the bony attachment of the ACL rather than tear the ligament. Depending on the injury type, a repair of the fracture or a reconstruction of the torn ligament may be needed.

Knee pain localized around the patella (kneecap) is a very common symptom seen in the running and jumping athletes. The discomfort can be felt around the edge of the patella or feel as if the source is inside the knee. Mild cartilage irritation can be the underlying condition and symptoms often improve with medication and physical therapy to strengthen the muscles at the hip and knee.

Since many of these injuries occur within seconds, prevention is the most powerful tool to keep student athletes safe. The use of appropriate safety gear has proven itself invaluable in contact

sports. Education on good form and dynamics can help young athletes protect their shoulders during swimming and elbows during pitching. Regulation changes have been made to avoid dangerous activities, such as spearing in football.

Many children are now involved in year-round sports with limited time between seasons. They are training and competing five to seven days per week and may be involved in different sports, meaning they are playing on multiple teams in a given season.

The need for young athletes to be given time to recuperate from the rigors of a season cannot be overstated. Proper diet and appropriate amounts of sleep are essential to keeping children healthy and involved. Hydration during training and competition, as well as stretching and warming up prior to athletic events is crucial. If an injury occurs and the athlete is unable to continue with normal activities or return to sports, they should be evaluated by a physician.

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