

Little League Elbow

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With the increasing participation and competitive level of today's youth sports, more adolescent and pediatric patients are being evaluated and treated for a variety of elbow injuries. Each year over two million children participate in Little League activities. Previous surveys have shown symptomatic elbow pain in 17-20% of all little league throwers. A more recent study found a 26% frequency of elbow pain in 9-12 year-old baseball players.

In 1960, the term "little league elbow" was coined to describe an acute fracture of the medial epicondyle (the bump on the inside of the elbow) in an adolescent pitcher. Today, "little league elbow" includes injuries that are not only unique to the immature upper extremity, but also to the specific demands of sports like baseball, tennis, golf and gymnastics. Both acute elbow fractures and certain overuse elbow injuries can distort the growth process in children, and may lead to long-term dysfunction.

Acute fractures and dislocations within the elbow joint are often seen and considered orthopedic emergencies; swelling and disruption of the elbow structures can damage one or more of the major nerves which pass over the elbow joint to control the forearm, wrist, and/or hand. Even partial damage to the blood supply can lead to a very serious condition called "compartment syndrome." Failure to recognize this condition can lead to permanent loss of function.

More common, are the "overuse" injuries, which cause elbow pain in the young athlete. Elbow pain is usually one of the following conditions:

- apophysitis of the medial epicondyle
- osteochondritis dissecans of the capitellum or lateral epicondyle (the bump on the outside of the elbow), or
- damage to the growth plate at the end of the arm bone interfering with normal growth of the bone.

In children whose bones are still growing, the muscle tendons attach to the growth cartilage (called the apophysis) at the elbow joint. This attachment is weaker than the muscle tendons. With the repetitive stress produced by varying stages of throwing,

portions of the apophysis may gradually be pulled off by the repetitive throwing motion. This produces a gradual onset of pain on the inner aspect of the elbow.

Throwers often complain of decreased ability to throw as hard or as far in comparison to pre-injury levels. Swelling and loss of elbow motion may occur. Any child who experiences such pain should immediately be removed from sports activity and evaluated by a pediatric specialist. Xrays, or MRIs, are taken to assess the extent of damage to the injured joint. If the diagnosis reveals only mild displacement of the growth cartilage from the underlying bone, non-surgical treatment is appropriate. This entails rest, no throwing, and physical therapy to restore range of motion. Children must wait at least 6-9 weeks before returning to sports. When significant displacement occurs, surgery may be needed to ensure proper positioning of the detached cartilage as healing occurs. In surgery, the detached fragment is reattached with pins, screws, or suture stitches. Throwing is often prohibited for six months after surgery.

Osteochondritis dissecans (OCD) of the capitellum is the leading cause of permanent elbow disability in adolescent athletes. This is a condition often seen in children and adolescents whose growing bones and cartilage are more vulnerable to repetitive stress than adults. If allowed to worsen, OCD may lead to bone chips and cartilage falling in the joint (so-called “loose bodies”). Primarily seen in baseball pitchers, OCD produces a gradual onset of pain on the outer aspect of the elbow, often worse during the cocking and early acceleration phase of throwing. Joint locking or stiffness may be accompanied by a sudden stab of pain as well as muscle spasm or swelling. Xrays and MRI are often ordered by the treating physician to assess the joint surface and extent of damage. In children, immobilization and rest often allows healing of the damaged bone. Loose fragments, which have already separated, may be pinned back in place or, more commonly, removed arthroscopically or via an open incision. If the area of diseased cartilage is soft but still intact, several holes are drilled into the bone in an effort to stimulate blood flow and encourage healing.

The key in treatment of “little league elbow” is prevention. This responsibility is widespread, involving the team physician, coach, team trainer, parents and officials. Emphasis must be placed at an early age on preseason conditioning, proper throwing mechanics and proper warm up exercises. The main culprit of “little league elbow” is simply allowing children to throw too much. In a recent study, every 10 pitches thrown per ball game equated to a 6% increased risk of elbow pain. Little League, Inc. guidelines restrict pitching in 9-12 year-olds to under 6 innings/week and under 9 innings/week for those over 13 years. Such restrictions should apply to practice throwing as well and some even advocate no more than 300 skilled throws/week. Too often, young athletes are

treated like high-level adult athletes and told to “play through the pain” or “throw the pain out.”

Consult your primary care physician for more serious injuries that do not respond to basic first aid. As an added resource, the staff at Nationwide Children's Sports Medicine is available to diagnose and treat sports-related injuries for youth or adolescent athletes. To make an appointment, call 614-355-6000.