



## Little League Elbow

BY: David L. Marshall, MD

### What is Little League Elbow?

Little League Elbow is a painful injury to the growth plate on the medial, or inner part of the elbow. This growth plate, called the medial epicondylar apophysis, is made up of cartilage until kids reach 13 to 14 years of age. This cartilage is not nearly as strong as bone (similar to plaster vs cement). During overhead throwing, the cartilage growth plate is placed under stress, and becomes irritated, causing pain.

### What causes Little League Elbow?

It is caused by repetitive throwing. More specifically, there are two phases of the throwing motion that stress the growth plate. The first is the early acceleration phase (seen below). During this phase of throwing, there is a pulling or traction force applied to the growth plate on the inner elbow (see picture). The second phase of the throwing motion that stresses the elbow is when the ball is released. During this phase, there is a powerful inward and downward snap of the wrist. The growth plate in the elbow is vulnerable to injury because it is made up growth cartilage, a relatively soft substance that is not as strong as bone, muscle or tendons. With repetitive throwing, and not enough rest between throwing activities, the growth cartilage weakens, begins to develop very small cracks, and may actually pull apart from the arm bone analogous to a screw anchor pulling out of a plaster wall.

### What are the symptoms of Little League Elbow?

The most common symptom is pain at the inner or medial, elbow that worsens with throwing. The pain may be severe and occur abruptly after one hard throw, or it may occur gradually over the course of weeks to an entire season. There may also be swelling, redness, and warmth over the inner elbow.

### What should I do if I think I have Little League Elbow?

The first and most important thing to do is stop throwing. Ice should be applied for 10-15 minutes via ice cup massage and the elbow can be wrapped with an ace bandage or a compression sleeve. All young throwers with elbow pain should see their doctor since x-rays may be needed to determine the extent of the injury to the growth plate.

### How is Little League Elbow treated?

It depends on the extent of the injury to the growth plate. Usually, if caught early, there is minimal separation of the growth plate and it can be treated with rest, ice, and compression wraps. The period of non-throwing may take 4-6 weeks to allow proper healing.

Sometimes, if the injury is minor and caught early, a player will be allowed to bat or play an infield position such as first base. If the injury to the growth plate is more severe, there is swelling, or there is significant separation of the growth plate from the bone, casting may be necessary. On rare occasions, the injury is severe enough that surgical pinning is necessary to re-attach the growth plate fragment.



Once healing is complete, there will be a gradual return to throwing, usually over 2-3-week period. This consists of a functional progression starting with very light throws from short distances and progressing to up to 50 pitches from the mound. This is best directed by a sports medicine physician or sports physical therapist experienced in the rehabilitation of young pitchers.

### Will this cause permanent damage to the elbow?

Usually not. If recognized early and treated properly, Little League Elbow usually heals completely and there will be no long-term effects to the growth plate. On rare occasions, the cartilage will degenerate, become fragmented and break off inside the elbow joint causing loose bodies that need to be surgically removed. This is more common on the lateral, or outside of the elbow.

## Can Little League Elbow be prevented?

There is no way to 100% guarantee that a young thrower will not develop Little League Elbow, but here are some tips that can be taken to minimize the risk.

- Always warm up before throwing.
- At the first sign of elbow pain, **stop throwing** and apply ice. When the pain is gone, resume throwing from short distances and at half-speed. If the pain persists more than a couple days or if the pain returns when throwing resumes, see your doctor for an evaluation.
- Have a coach or parent **count pitches**. This is a much better and more accurate way to monitor stress on the elbow than counting innings.
- Remember to count hard throws when not pitching (playing infield, throwing at home, pitching lessons, PE class, etc).
- No curve balls or other breaking pitches until age 14 or the pitcher is shaving.** Young pitchers should master command and control of the fastball and change-up before attempting to throw curve balls. The proper curve ball requires a large enough hand for finger placement across the top of the ball so ball release does not put any stress on the wrist or elbow. Young pitcher's hands are too small for proper finger placement and they must twist or torque the wrist and elbow to get the ball to rotate. This increases stress on the inner elbow growth plate.

## How many pitches should I throw?

Some youth baseball organizations limit the number of innings a player is allowed to throw. Because the number of pitches per

inning can vary widely, counting the number of pitches you throw provides a better way to accurately measure stress on the elbow. This can be done by a coach, parent, or teammate. The recommendations for different ages are as follows:

8 – 10 years	40 – 50 pitches
11 – 12 years	55 – 60 pitches
12 – 14 years	60 – 70 pitches
14+ years	70 – 85 pitches

Remember, these numbers are recommendations. If you develop elbow pain with a less number of pitches, stop throwing, ice and get it evaluated if the pain persists.



## David L. Marshall, MD

David Marshall, M.D., is the Medical Director of the Sports Medicine Program at Children's Healthcare of Atlanta and a primary care sports medicine specialist at Children's Orthopaedics of Atlanta. He has eight years of experience as a general pediatrician and is fellowship trained and board certified in Primary Care Sports Medicine. He is one of only 100 pediatricians in the country to hold this designation. The Sports Medicine Program at Children's is one of the eight largest pediatric sports medicine facilities in the country and treats nearly 20,000 patients annually at their seven metro Atlanta locations.

Dr. Marshall is Chair of the Committee on Sports Medicine and Fitness for the Georgia Chapter of the American Academy of Pediatrics, an Assistant Professor in the Department of Pediatrics at Emory University, and serves on the Medical Advisory Committee for the Georgia High School Association.

In addition to his work in the sports medicine clinic, Dr. Marshall serves as the team physician for ten metro Atlanta high schools as well as consultant to several area club sports including gymnastics, cheerleading, soccer, swimming and lacrosse.

He has lectured all around the country on various sports medicine topics, has appeared on the local news several times and has written articles for magazines as well as peer-reviewed journals. He is currently writing a pediatric sports medicine textbook for pediatricians due out in early 2010.

His research includes pathology of the elbow and shoulder in throwing athletes.



A DIVISION OF CHILDREN'S ORTHOPAEDICS OF ATLANTA

5445 Meridian Mark Road . Suite 250  
Atlanta, GA 30342

Dr. Marshall can be contacted at **678.686.6820**  
**For appointments, call 678.686.6860**