

STEVEN CHUDIK MD

SHOULDER, KNEE & SPORTS MEDICINE

Little League Shoulder
Proximal Humerus Epiphysitis

The physis (growth plate) is a layer of cartilage near the end of bone whose cells multiply and turn into bone as we grow. Most growth plates close (fuse or disappear) in girls between the ages of 14 to 16 and by age 16 to 18 in boys although some growth plates close as late as age 25.

The growth plate can be the weak link in the growing athlete during different stages of growth and is more susceptible to injury than the surrounding bone, muscle, or ligaments. Little League Shoulder is characterized by a stress injury to the physis (growth plate) of the proximal humerus (upper arm bone). Repetitive forces from throwing or other overhead activities like swimming, volleyball, and racquet sports are the most common cause.



X-ray showing widening of the growth plate from stress injury in the proximal humerus



MRI showing edema (swelling) of the proximal humeral epiphysis center

Frequent Signs and Symptoms

- Gradual onset of symptoms following frequent and prolonged activity
- Pain, tenderness, bruising, and swelling
- Weakness or inability to use the injured extremity in athletic activities
- Pain with throwing or inability to throw at full speed
- Pain that improves with rest but returns with repetitive throwing and activity



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Etiology (Causes)

Little League Shoulder is a stress injury to the proximal humerus growth plate (which is still developing during adolescence) from overuse and repetitive injury. Repeated stress or injury can cause a fracture or separation of the growth plate.

Risk Factors

- Repetitive overhead motion sports such as in baseball, softball, swimming, etc.
- Prolonged sports seasons without adequate rest or down time
- Poor throwing mechanics
- Poor physical conditioning (strength and flexibility)
- Rapid skeletal growth
- Overuse without rest

Preventive Measures

- Promote multi-sport participation that avoids repetitive stress on the same parts of the body
- Exercise moderately, avoid extremes
- Rest appropriately after vigorous exercise
- Appropriately warm up and stretch before practice or competition.
- Maintain appropriate conditioning:
 - Cardiovascular fitness
 - Muscle strength
 - Flexibility and endurance
- Use proper technique
- Use throwing interval programs in the preseason to prepare the arm for the season
- Maintain pitch counts and rest days after pitching

Outcomes

Mild cases can be resolved with slight reduction of activity level, whereas moderate to severe cases may require significantly reduced activity for 3 to 4 months

Potential Complications

- Untreated stress injury to the growth plate can progress to a complete fracture (separation) of the growth plate
- Prolonged healing time if not appropriately treated or not given adequate time to heal
- Recurrence of symptoms or increasing symptoms if not given adequate time to heal or if sports are resumed too soon; appropriately treating the problem the first time reduces the likelihood of recurrence.



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Treatment Considerations

Initial treatment for growth plate injuries is a period of rest from throwing to allow the bone time to heal and repair itself. These injuries can require a few weeks to months of rest followed by a gradual return to activity and a gradual return to play with an interval throwing program. Recovery is complete when the patient is no longer tender to touch, is completely pain free, sufficient time for bony healing has passed, and he/she has gradually resumed activities. If the athlete returns to play too quickly, the injury will reoccur. Surgery is rarely needed in the growing patient; however, surgery is sometimes necessary in non-compliant patients who fail to allow the stress injury to heal in a reasonable time frame.

Possible Medications

Avoid nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (DO NOT take within seven days before surgery) as they inhibit early inflammatory events in the healing cascade. Other minor pain relievers, such as acetaminophen, are reasonable to try. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.

Modalities (Heat and Cold)

- Cold is used to relieve pain and reduce inflammation. Cold should be applied for 15 to 20 minutes every two to three hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage with a cloth between the ice and your skin to prevent burning /freezing your skin.
- Heat may be used before performing stretching and strengthening activities prescribed by your physician, physical therapist, or athletic trainer. Use a heat pack or a warm soak.

Notify My Office If Symptoms Worsen

