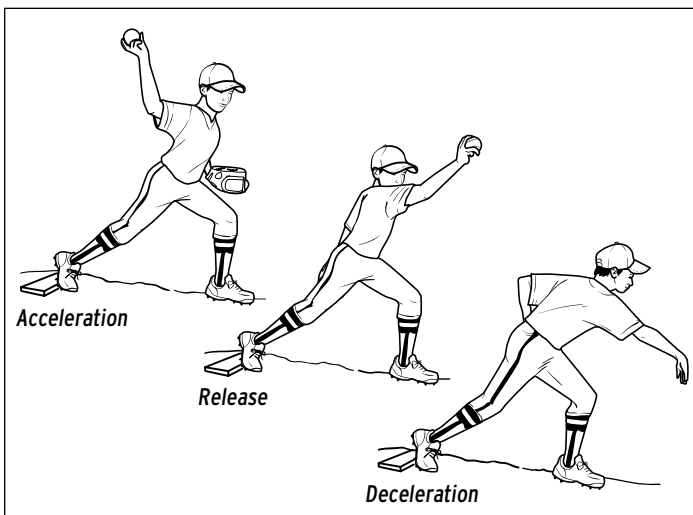


Little League Elbow

Little League elbow is a common overuse injury associated with throwing. This injury is most common in pitchers but also occurs in catchers, infielders, and outfielders.

Little League elbow is the result of repetitive stress to the growth plate on the inside of the elbow. The greatest stress occurs during the acceleration phase of throwing a baseball.

Growing bones are easily injured because the growth plate is much weaker than the ligaments and muscles that attach to it. Once the growth plates fuse, athletes are more likely to injure ligaments and tendons instead.



The phases of pitching include windup, stride, arm cocking, arm acceleration, release, arm deceleration, and follow-through. This illustration shows arm acceleration, release, and arm deceleration.

Symptoms

Little League elbow usually begins gradually without a specific injury, but a distinct painful pop may occasionally be felt. Young athletes often try to minimize their symptoms so they can continue playing the sport.

Athletes may experience aching, sharp pain, and swelling on the inside of the elbow. These symptoms may occur only with pitching, but may progress to the point when any throwing causes pain. Advanced stages of the disorder may include small fractures of the growth plate, loose bodies or bone chips, or early arthritis and bone spurs.

Who gets Little League elbow?

Little League elbow is most common between the ages of 8 to 15 years but can occur up to age 17 years if the growth plate has not fused. This condition is seen most often in pitchers. Athletes who play other high-volume throwing positions, such as catcher, shortstop, or outfielder, are also susceptible.

There is a direct link between elbow pain and the number of pitches (pitch counts) and the number of games in which a young player throws. Most leagues have rules in place about this but they may not be followed, so it is very important that someone (usually the parent) keeps count. This includes counting the extra throwing done outside of practice. This problem is seen much more commonly in baseball players who play year-round and pitch for more than one team.

Fastballs are the most common pitches thrown in baseball and are thrown hard, usually with backspin. Changeups are thrown with the same arm action as a fastball, but the ball moves slower because the pitcher holds the ball with a different grip. Breaking pitches (curveballs/sliders) are thrown with topspin that causes them to “break” or drop down as they reach the plate. Breaking pitches appear to cause the most stress to the shoulder and elbow and so they are not recommended until age 14 for a curveball and age 16 for a slider.

Tests

X-rays of the elbow can help determine if the growth plate is still open and if it is widened. They can also show other bone problems, loose bone chips, and early arthritis. X-rays in patients with Little League elbow may show nothing abnormal, but the athlete may still have pain.

Treatment

Treatment of Little League elbow involves 3 stages: rest, rehab, and return to pitching.

1. **Rest.** At first, complete rest from all throwing activities is important. Ice can be helpful to relieve pain and swelling. Nonsteroidal anti-inflammatory drugs can be used but are not usually necessary if the athlete is not throwing.

2. **Rehab.** Individualized physical therapy programs are the most useful for these young baseball players. The program should include elbow range of motion and strength exercises and should progress to include strengthening of the forearm, upper arm, shoulder, back, and core.
3. **Return to pitching.** Players can return to throwing when they are pain-free and have full range of motion and strength. They should progress gradually from non-throwing positions (like designated hitter), through less throwing positions (like first and second base), to full-effort throwing positions. A return to pitching program, which outlines a progression of the number and the distance of throws, should be discussed and instituted for these young pitchers.

Most cases of Little League elbow clear up with rest and conservative management as described previously. However, the timeline for recovery, as with most overuse injuries, is different for every athlete. Not following the treatment plan may lead to long-term disability or deformity, including such conditions as osteoarthritis.

Prevention

- **Year-round fitness.** Players need to recognize the benefits of year-round physical fitness and conditioning. Resistance training is important and useful for all baseball players and should include arm, shoulder, back, trunk, and hip strengthening, and aerobic conditioning.
- **Active rest.** Baseball players need a period of “active rest” where they do not throw but are able to play other sports. This rest period should be at least 3 to 6 months long to give the body time to rest and recover.
- **Pitching guidelines.** Pitch counts are necessary at all levels of baseball. Guidelines have been updated, researched, and summarized in a publication titled “Protecting Young Pitching Arms.” These guidelines are important for all young pitchers, parents, and coaches to be familiar with. Guidelines can be found at www.littleleague.org. or <http://www.asmi.org/asmiweb/usabaseball.htm>.

- **Control, command, and speed.** Young pitchers need to work first on control (getting the ball in the strike zone). After gaining control they should work on command (being able to place the pitch in certain areas of the strike zone). Finally, after they master control and command they can work on increasing pitch speed. Pitchers younger than 14 years should only throw fast balls and changeups. Curveballs can be added after age 14 and sliders after age 16.
- **Avoiding maximum effort throws.** Young pitchers need to avoid other high-demand throwing positions (catcher, short-stop, third base) on days they have pitched. They should also rest from pitching for 24 to 48 hours after an outing, including backyard practice.
- **Avoiding further injury.** Athletes need to listen to their bodies carefully and avoid pitching through pain. An athlete who complains of pain around the elbow or shoulder, popping, or discomfort with throwing should not be allowed to throw anymore that day until pain-free. After that, a careful plan for gradual return to throwing would include
 - Warm-up and throws that are less than maximum effort
 - Pitching with less than maximum throws
 - Maximum effort pitches
- **Proper mechanics.** Correct pitching and throwing mechanics should be stressed at a young age. Poor mechanics can lead to injury. Biomechanic evaluation can be obtained from a qualified pitching coach or in a biomechanics laboratory.

NOTES

Listing of resources does not imply an endorsement by the American Academy of Pediatrics (AAP). The AAP is not responsible for the content of the resources mentioned in this publication. Web site addresses are as current as possible, but may change at any time.

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