

BASEBALL

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Young Players and America's Pastime

Special Points of Interest

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Baseball, America's pastime, is enjoyed by many, starting at a young age. T-ball, a variation of baseball made easier for its younger players, is available for kindergartners. After t-ball, young players progress to a league in which either coaches pitch or a machine pitches. Once the ball-players are at an age where they are deemed to be able to pitch in the strike zone and to hit real pitching, the league requires a member of each team to take the mound and throw. As the players progress, the distance between the bases is moved to ninety feet, and the pitcher's mound is pushed back to

sixty feet, six inches from home plate. While behind the plate, a catcher is required to wear protective gear, including leg pads, a chest protector, and a helmet. While batting and on base, a player is required to wear a helmet. Helmets with a facemask, though considered cumbersome by some, are more effective in preventing injuries than those without. Batters also are permitted to wear an elbow pad and shin guard to prevent injury occurring from fouling a ball off of himself. A protective cup is required by most leagues.



Baseballs



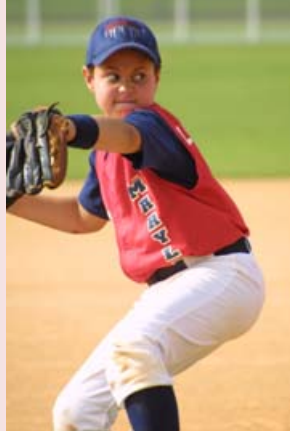
Depending on the age of those playing, different types of baseballs are appropriate. "Safety balls" are the best for younger and more inexperienced players. These balls vary from traditional baseballs in weight and hardness. "Safety balls" are made with a softer core that doesn't hurt as much when one is hit by it. Because they hurt less, "safety balls" help young players overcome fears about being hit by the ball. These balls come in different weights, with those closer to regulation weight used for older players. Around middle school, ballplayers use less forgiving balls with a cork and rubber core. These balls can be bought at varying qualities and prices; the better, longer-lasting balls include wool in the core because it helps the ball retain shape. Major League Baseball requires that game balls have a core that is made of at least 85% wool.

Baseball Related Injuries

When done improperly, pitching is one of the main contributors to baseball related injuries. In youth baseball, these injuries most often arise from the following categories:

Threat of Overpitching

Young ballplayers can find themselves in uncomfortable situations where their coaches, parents, or teammates unintentionally pressure them into potentially harmful situations, such as pitching too much and too often, and pitching after soreness has developed. USA Baseball Medical & Safety Advisory Committee and the American Sports Medicine Institute (ASMI) performed a study of the effects of such situations on youth baseball players and found that “relationship between the number of pitches thrown and the risk of shoulder and elbow pain in youth baseball.” According to ASMI, such pain is indicative of “early development of a potentially serious joint injury.” Here are recommendations for avoiding these problems:



Multiple Leagues	Many ballplayers join multiple leagues to further hone their skills. By pitching in more than one league, pitchers often exceed the recommended number of pitches. Pitchers are discouraged from pitching for more than one team per season; if a player decides to pitch for more than one team, he should not pitch twice on the same day and should restrict how much he pitches for each team in order to maintain a proper pitch count.
Year Round Playing	Some climates provide the opportunity for year-round baseball. Youth pitchers should participate in baseball and other stressful overhead sports (football quarterback, javelin throwing, etc) for no more than nine months a year in order to give the body time to rest and recover.
Soreness While Pitching	A player who has arm pain while pitching should be removed from pitching and should be taken to a doctor if the pain persists for more than four days or if it occurs again the next time the player pitches.

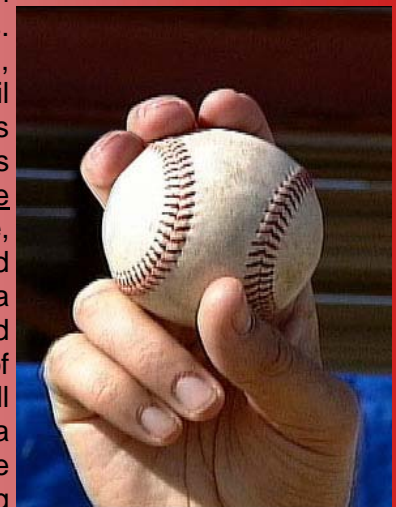
Pitch Counting

The following table gives the recommended pitch counts for youth pitchers. The number of throws does not include pitches thrown during warm-ups

Age	Pitches/ Game	Pitches/ Week	Pitches/ Season	Pitches/ Year
9-10	50	75	1000	2000
11-12	75	100	1000	3000
13-14	75	125	1000	3000

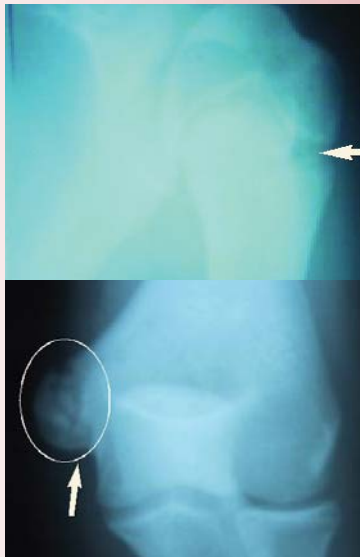
Pitch Type

In order to gain a competitive edge, pitchers are often taught breaking balls (such as the curveball) before they are physically capable of throwing them safely. There is truly no one, universal time for when players can begin throwing such pitches. However, in general, pitchers should wait until puberty, “until their bones have matured,” which is typically around the age of 13. Until that time, young pitchers should focus on developing a solid fastball and changeup, pitches of great importance at all levels of play. Once a pitcher reaches an age appropriate for throwing breaking balls, in order to keep the arm healthy, these pitches should not be thrown too much. Breaking balls put extra stress on the elbow, which can contribute to irritation, soreness, and ultimately more severe problems.



Overuse Injuries: Little League Elbow & Shoulder

The two most common overuse injuries in youth baseball players are Little League elbow and Little League shoulder. While both injuries are equally serious and painful, Little League elbow occurs more frequently. These injuries, occurring in athletes between the ages of 9 and 16, with a peak between 12 and 14, “result from repetitive micro-trauma caused by the large rotational torques needed to throw.” Essentially, too much throwing causes a lot of small injuries to the elbow and shoulder. Because of the large amounts of throwing they are required to do, pitchers are the most likely to suffer from little league shoulder or elbow. Other than pitchers, those at greatest risk of injury, moving from highest to lowest, are catchers, third basemen, shortstops, and outfielders.³ The cause for these injuries is the trauma and stress created by overuse, which can be achieved through a multitude of improper practices.



X-Ray image of Little League shoulder (above) and elbow (below).

For example, Little League elbow or shoulder can be created by a player pitching for multiple teams, changing the distance from which he pitches⁴, throwing excessively³, or throwing too many breaking balls⁴. Both Little League shoulder and elbow are injuries to the growth plate.

In maturing bodies, the growth plates are comparatively weaker than the attached muscles, putting the growing bones at risk of injury.³ Thus, the “repetitive microtrauma” caused by overthrowing affects the growth plate and bones, rather than the tendons and ligaments. In the elbow, the effect of the overuse ranges from a “stress reaction” to bone spurs to early arthritis, while in the shoulder, there is either inflammation or a stress fracture.

In both Little League elbow and shoulder, there is often little or no discomfort as a result of a physical examination. Instead, pain is caused by throwing, increasing as the velocity, distance, and duration of throws increases. Furthermore, for both the shoulder and elbow injury, the player often cannot remember a specific, distinct injury; instead, there is a gradual increase in pain and discomfort. While those suffering from Little League elbow very often suffer pain lasting twenty-four hours or more, it is much less common for those with Little League shoulder. As a consequence, athletes with Little League shoulder frequently go much longer before seeking medical attention.

Recovery for these injuries ranges from six weeks for minor cases to three months for more serious ones. Once the player has full range of motion in his injured body part, he can field in practice or can participate in games as the designated hitter. As soon as two weeks after the diagnosis, the injured player can begin a strengthening program, which is followed by a short-toss and long-toss program. After this throwing program, the player can progress to throwing from the mound if he is a pitcher. Only after completing all these steps is he allowed to participate in games.

In Season Maintenance

During the season, in order to prevent soreness and injury, pitchers must work in between games that they pitch. A typical routine for pitchers with 3 days³ of rest between games should consist of the following:

- 1: Long Toss:** the pitcher throws a baseball with a partner, starting from a close distance and then gradually working back to a long distance apart, arching the ball so that it reaches the other player
- 2. Long Distance Running:** the pitcher runs at a moderate pace for an extended amount of time to flush out the lactic acid
- 3. Sprints:** the pitcher runs full speed for shorter distances to build up endurance and stamina for the game

A pitcher’s arm needs to remain strong and healthy. To increase strength and cut down the risk of injury, a pitcher should complete a regimen of arm exercises. These exercises should be done before the season in order to prepare for the oncoming games, and during the season to help rehab sore and injured pitching arms. Check this link to see the recommended exercises,

<http://www.asmi.org/SportsMed/throwing/thrower10.html>

Game Day	Pitch Game
1 st Day Off:	Long Toss; Long Distance Running
2 nd Day Off:	Light Throwing; Sprints
3 rd Day Off:	Bullpen Session (Work on Mechanics); Sprints
Game Day	Pitch Game