

# UF HEALTH ORTHOPAEDICS AND SPORTS MEDICINE INSTITUTE

## Prevention of Throwing Injuries

### Epidemiology

The popularity of baseball among children and adolescents is evident as there are nearly 3 million Little League, adolescent, and high school-aged baseball players in the United States. Studies have shown that there were more than 22,000 high school baseball-related shoulder injuries in the high school population alone between 2005 and 2007. Pitching was the most common mechanism causing shoulder and elbow injury. In addition, there has been a significant rise in adolescent and high school elbow injuries resulting in the now well known “Tommy John” surgery.

These statistics validate the importance of these injuries and indicate that all coaches, parents, and athletes should be aware of the most up-to-date recommendations for injury prevention in this population.

1. Zaremski JL, Krabak BJ. Clinical Focused Review: Shoulder Injuries in the Skeletally Immature Baseball Pitcher and Recommendations for Prevention of Injury. *PM R* 2012;4:509–516.
2. Andrews JR and Fleisig GS. Prevention of Elbow Injuries in Youth Baseball Pitchers *Sports Health: A Multidisciplinary Approach* 2012 4: 419-424.

### Overuse Throwing Injuries

#### Some tips to keep you in the game throughout your life include:

- Warm up properly by stretching, running, and easy, gradual throwing
  - Rotate playing other positions besides pitcher and catcher
  - Concentrate on age-appropriate pitching
  - Adhere to pitch count guidelines
  - Avoid pitching on multiple teams with overlapping seasons
  - Don't pitch with elbow or shoulder pain. If the pain persists, see a doctor
  - Don't pitch on consecutive days
  - Don't play year-round
  - Never use a radar gun
  - Communicate regularly about how your arm is feeling and if there is pain
  - Develop skills that are age appropriate
  - Emphasize control, accuracy, and good mechanics
  - Master the fastball first and the change-up second, before considering breaking pitches
  - Speak with a sports medicine professional or athletic trainer if you have any concerns about injuries or prevention strategies
1. Baseball Injuries Sports Tips <http://www.stopsportsinjuries.org/baseball/>



# Little League Pitching Guidelines

Garnering enough rest between starts and between seasons is one way to prevent overuse injuries in the throwing shoulder. Below are the most up-to-date pitch restrictions according to Little League Baseball.

## Maximum Pitches/Game

Age	Pitches/Game
7-8	50
9-10	75
11-12	85
13-16	95
17-18	105

Source for charts: Little League Baseball

## Rest Period Required

Ages 14 and Under	Ages 15-18	Required # of Days of Rest
66+	76+	4 calendar days
51-65	61-75	3 calendar days
36-50	46-60	2 calendar days
21-35	31-45	1 calendar day
1-20	1-30	None

## Rehabilitation and Physical Therapy

Rehabilitation and preparation for the next pitching session begins immediately after the current pitching session ends. The USA Baseball Medical and Safety Advisory Committee wrote on the essentials of an effective post-pitching recovery regimen. These recommendations included post-pitching routines such as stretching, ice, and a whole body conditioning program. In addition to rehabilitation from pitching during games and in-season, it also is imperative to maintain and improve strength in the off-season.

1. Ronai J. Eight essentials of post-pitching recovery.

## Phases of Rehab

In the case of an overuse throwing injury, your son/daughter/player will be referred to one of our Sports Medicine Specialists. Once a full evaluation has been completed, rehabilitation will begin. Rehabilitation of the overhead throwing shoulder has 4 phases: acute, intermediate, advanced with strengthening, and return-to-activity. Every athlete is different, so there is not a set start and stop date for each phase. Remember that the ultimate goal is to allow an effective and efficient return to throwing without pain or discomfort.

Phases	Acute	Intermediate	Advanced	Return to Activity
<b>Modalities</b>	Ice Iontophoresis Electrical stimulation			
<b>Exercises</b>	Flexibility Strengthening Rotator Cuff	Continued stretching and strengthening the shoulder Core/abdominal strengthening and leg strengthening	Plyometric program endurance drills	
<b>Throwing</b>	None	None	Short distance throwing program initiated	Interval throwing program

Source for chart: Wilk KE, Obma P, Simpson CD II, et al. Shoulder injuries in the overhead athlete. J Orthop Sports Phys Ther 2009;39:38-54.

## Recipe for Success

Many organizations, including the National Athletic Trainers Association and the American Academy of Pediatrics have recommended that children and adolescents participate in a variety of sports to allow enhancement of general fitness and aid in motor development and also develop athleticism (versus sports-specific skills) and love of sports.

Additional Resources:

1. Little League Baseball: [http://www.littleleague.org/Little\\_League\\_Online.htm](http://www.littleleague.org/Little_League_Online.htm)
2. STOP Sports Injuries: <http://www.STOPSportsinjuries.org>
3. USA Baseball Medical: [http://web.usabaseball.com/news/article.jsp?ymd=20080618&content\\_id=33889&vkey=news\\_usab](http://web.usabaseball.com/news/article.jsp?ymd=20080618&content_id=33889&vkey=news_usab)

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## How do I schedule an appointment to be evaluated for a sports-related injury?

**Please contact us at the sports injury hotline at 352.273.7001 to schedule an appointment with one of our sports medicine specialists.**

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### OSMI and UF Health Sports Medicine Providers

**Joshua Altman, MD**

Primary Care Sports Medicine

**Kevin Farmer, MD**

UF Team Physician

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