



As the youth baseball seasons get into full swing, it is worth remembering...and cautioning parents and coaches about overusing young player's arms. This is especially true with pitchers.

You may have heard that there are a staggering number of Major League pitchers undergoing "Tommy John" surgery this year. This surgery reconstructs the ulnar collateral ligament (UCL), which is located on the inside part of your elbow. What research has shown is that pitchers who need this surgery, didn't necessarily require this surgery as a result of pitching in the Major Leagues, but rather as a combined result of throwing too hard and too often as a youth player. This extended wear and tear is then exposed as these players reach their 20's and 30's.

If you ask any orthopedic surgeon, they will tell you that athletes that participate in overhead sports such as baseball and softball, all have some sort of damage to the ligaments in their throwing arms. Little tears will form by repeating the motion of throwing. This is normal. However, when we expose our kids to too much throwing, or expect them to throw too hard when they are not developmentally ready to do so, we are exposing them to possible arm problems in the future.

The UCL's primary job is to prevent the elbow from separating during stressful activity. In overhead athletes, the force of throwing a ball exceeds the strength of the UCL alone. This means we must rely on our muscles to prevent the ligament from rupturing. In light of this information, it is not surprising that a pitcher is 36 times more likely to damage the UCL if pitching while muscles are fatigued.

One of the best analogies to describe the UCL is this: If you take a rubber band and stretch it, the fibers will tear to some degree, even on the first stretch. As you stretch that rubber band over and over, and stretch it further and further, the materials will break down, and the rubber band will eventually snap. The same holds true for the UCL. Although we are seeing problems with UCL tears at a dramatic rate in adults, the problem actually originates from misuse at the youth level.

So the question then becomes, how do we manage our youth athlete's arms so that their risk for future problems decrease? In my view, the very first issue that needs to be addressed is arm misuse and overuse. Youth players are not physically or developmentally ready to throw a high number of pitches, especially if they are high stress pitches. We should not, and cannot expect our young athletes to pitch the maximum number of pitches allowed in a game, and then move to catcher or shortstop for the rest of the game. We also cannot expect our young athletes to recognize when their arm is fatigued. Dr James Andrews and his associates, who provide many of the UCL reconstructions for Major League players also suggest that the first change that they would make to prevent these injuries is to identify and prevent fatigue as much as possible.

Fatigue can come from throwing a high number of pitches at one time, from throwing too hard for an extended period of time, or as a result of throwing a lot over an extended period of time. As coaches and parents we need to keep them out of situations which will allow their arm to become fatigued. Below is a chart taken from the Journal of Sports Health. It outlines the recommended pitching guidelines for kids by age.

	Pitcher's Age, Y		
	9-10	11-12	13-14
Pitches per game	50	75	75
Pitches per week	75	100	125
Pitches per season	1000	1000	1000
Pitches per year	2000	3000	3000
Months of pitching per year	9	9	9

Fazarale JF, et al. Knowledge of and Compliance With Pitch Count Recommendations: A Survey of Youth Baseball Coaches. Journal of Sports Health. 2012;4(3);202-204

The second issue that needs to be addressed is mechanics. I attend numerous youth league games throughout the summer, and will consistently see pitchers throwing with bad mechanics. When a pitcher, or any player for that matter, throws with bad mechanics, they are headed down the road for arm issues in the future. We need to educate youth coaches on the proper throwing motion, and help them recognize mechanical flaws that could lead to issues.

Finally, we need to make sure kids are doing a variety of activities that utilize all of their muscle groups. This not only builds athleticism in general, but ensures that one muscle group is not being over-worked. This does not mean that kids cannot throw every day. It also does not mean kids cannot throw all year. However, when they do throw, it should be low intensity, low repetition work, to keep the arm fresh and strong. They should not be pitching all year round.

I want to thank all the volunteer coaches who take on the sometimes unfavorable task of coaching a team. Your hours of dedication are truly appreciated by your organizations and future coaches of your players. I want to also thank the parents for allowing your son or daughter to participate in this great, yet technical...and difficult game. Please set your young athlete up for success by educating yourself, attending clinics, and paying close attention to how your child's arm is being utilized during the season and throughout the year. Your young athlete only has one throwing arm. Take the preventative steps needed to ensure they can play this great sport for many years to come.

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