



CENTRAL OHIO'S PREMIER YOUTH BASEBALL LEAGUE
WWW.COYBL.ORG

Parents of the COYBL,

In an effort to protect your child's arm, we have instituted a pitch count rule in COYBL League play.

We encourage you to download and read the League Rules as well as the three articles we have posted on the home page of this web site regarding Pitching and the importance of protecting your child's arm.

Please visit the links below or access them from our home page.

<http://www.coybl.org/Users/Organization1/2009%20COYBL%20League%20Rules.pdf>

<http://www.coybl.org/Users/Organization1/YOUNG%20PITCHERS%20AT%20RISK%20FOR%20SERIOUS%20INJURIES.pdf>

<http://www.coybl.org/Users/Organization1/USA%20Baseball%20-%20Pitch%20Counts.pdf>

<http://www.coybl.org/Users/Organization1/Guidelines%20to%20Prevent%20Injuries.pdf>

We have developed this rule, we have provided articles on this subject that were written after intense research by noted surgeons and also put on a comprehensive Coaches Clinic for all COYBL Coaches to participate in to help protect your child's future and well being.

It is our goal to prevent any injuries to a players arm and this rule will help us with that, but we need your help as well as the Coaches help in doing that by following this important rule.

Thank you,

The COYBL rules committee

Central Ohio Youth Baseball League

P.O. Box 1425

Pataskala, Ohio 43062-1425

P: 740.919.4122

coybl@columbus.rr.com

YOUNG PITCHERS AT RISK FOR SERIOUS INJURIES

Baseball experiences great popularity both for the enjoyment of participation and for the low risk of significant injury. Approximately nine million players between the ages of six to seventeen annually attest to the love of the game.

Unfortunately over the past three decades the game has become of increasing importance, providing economic benefits and societal status to those with high levels of performance. As a result a youth recreational game is becoming increasingly serious and the primary goal of participation has become success.

Baseball, as any sport, should promote fun, participation, skill development, maximal effort, a desire to win, an understanding of losing, teamwork, cooperation, determination, perseverance and social skills. Baseball must also give young athletes the chance to develop and maximize their skills to reach their highest level of achievement, but overzealous practices in pursuit of success can lead to serious overuse injuries. This has become most apparent in young pitchers who have sustained injuries previously only seen in adult players. These injuries are of the magnitude that can limit ultimate performance and end the ability to pitch.

Little League elbow was a popular term in the past, an inflammation of the inner part of the elbow in young pitchers.. In the overwhelming majority of players, the symptoms resolved with no long-term problems. Recently it has become apparent that not all elbow and shoulder problems experience simple and complete resolution. As a result of overuse, poor biomechanics, and a lack of appropriate conditioning, the significant forces created by the pitching motion has resulted in growth plate fractures, growth abnormalities, strains and tears of the rotator muscles and tendons, joint instability, tears of the cartilage in the joint, bone breakdown and ligament tears, including the ulnar collateral (Tommy John) ligament. Long periods of rest, extensive rehabilitation and surgery are frequently required to heal these injuries, some of which will never return to their previously normal structure.

DR. JAMES ANDREWS - EXPERIENCE

Dr. James Andrews, of the Alabama Sports Medicine and Orthopedic Center and the American Sports Medicine Institute in Alabama repaired an average of four Tommy John ligaments from 1995 ñ 1997 on high school pitchers, 17 between 1998 ñ 2000, 26 by 2002 and more than 54 in 2003. There is little question in his mind that serious arm injuries are increasing in under 18 year-old players, even those between 11 to 15 years of age.

DR. FRANK JOBE - OPINION

Dr. Frank Jobe, associate of the Kerlan ñ Jobe Orthopedic Clinic and Marilyn M. Pink, Ph.D., P.T., director, Biomechanics Laboratory, Centinela Hospital Medical Center express similar concern about the injuries to young pitchers. They believe the passion for success has resulted in an excessive number of pitches thrown by young players. This is often associated with the additional risk of poor biomechanics and inadequate conditioning. Dr. Jobe believes the current environment of excess needs, moderation or serious injuries will continue to increase. What did professional pitchers do?

DR. CHANDLER - ARE THE PRACTICES OF TODAY'S

YOUNG PITCHERS NECESSARY TO REACH ELITE LEVELS OF PERFORMANCE?

Dr. Joseph B. Chandler, chairman of the Major League Baseball Medical Advisory Committee, interviewed 30 major and 71 minor league pitchers in 2002 to determine their pitching history. High pitch counts and reports of arm injuries were uncommon and most first threw a curveball at 14 and a slider at 18 years. Year round baseball was uncommon and most played other sports during the year. Professional pitchers reached their elite status without following the excess practices of today.

DR. BARRY GOLDBERG ñ DR. FREDERICK MUELLER

USA BASEBALL MEDICAL & SAFETY ADVISORY COMMITTEE

Dr. Barry Goldberg, director of Sports Medicine, Yale University Health Services and Dr. Frederick Mueller, chairman of the University of North Carolina Sports and Exercise Research at the Center for Catastrophic Sports and Injury Research, demonstrated in a preliminary pilot study in 2004 that early pitching practices appear to create an increased risk for an eventual pitching injury. Pitching volume, type of pitches thrown, inadequate rehabilitation of prior injuries and a lack of formal conditioning appear to be increasing the chance of sustaining a later significant injury.

Too much too soon combined with inappropriate preparation has caused a growing incidence of serious arm injuries in young pitchers. The recommendations of Drs. Jobe, Andrews, Chandler and the USA Baseball Medical & Safety Advisory Committee should reduce this growing problem.

RECOMMENDATIONS

Coaches and parents should listen and react appropriately to a youth pitcher when he/she complains about arm pain. A pitcher who complains or shows signs of arm pain during a game should be removed immediately from pitching. Parents should seek medical attention if pain is not resolved within four days or if the pain recurs immediately the next time the player pitches. League officials should educate parents about this consideration.

Pitch counts should be monitored and regulated in youth baseball.

Recommended limits for young pitchers are as follows:

9-10 Year Old Pitchers 50 pitches per game 75 pitches per week 1,000 pitches per season 2,000 pitches per year

11-12 Year Old Pitchers 75 pitches per game 100 pitches per week 1,000
pitches per season 2,000 pitches per year

13-14 Year Old Pitchers 75 pitches per game 125 pitches per week 1,000
pitches per season 3,000 pitches per year

15-18 Year Old Pitchers 100 pitches per game 150 pitches per week 1,500
pitches per season 3,500 pitches per year

Pitch count limits pertain to pitches thrown in games only. These limits do not include throws from other positions, instructional pitching during practice sessions and throwing drills, all of which are important for the development of technique and strength. Backyard pitching practice after a pitched game is strongly discouraged. Excessive practice when a pitcher is in a slump should also be strongly discouraged.

Pitchers should not throw breaking pitches (curveballs, sliders, etc.) in competition until their bones have matured (indicated by the level of pubertal development) typically between 13-15 years of age. In order to succeed a youth pitcher should focus on learning good mechanics, firmly establish the skill of an accurate fastball and then learn to vary the speed of his/her pitches.

Pitchers are discouraged from pitching for more than one team in a given season. Coaches will tend to use better pitchers on each team, which would significantly increase pitch volume.

Pitchers should compete in baseball no more than nine months in any given year as periodization is needed to give the body time to rest and recover. For at least three months a year a pitcher should not play any baseball or softball, participate in throwing drills or participate in other stressful overhead activities (javelin throwing, football quarterback, softball, competitive swimming, etc.).

Pitchers should engage in year round physical conditioning including activities to improve endurance, strengthen the upper and lower body, enhance core strength, develop neuromuscular coordination and maintain flexibility. Specific programs should be geared to the stage of pubertal development.

Pitchers should be discouraged from participating in Showcases due to the risk of injury. The importance of Showcases should be de-emphasized, and at the least, pitchers should be permitted appropriate time to prepare for the display of their skills.

Baseball players should be discouraged from copying the style of professionals as these players have developed individual adaptations.

It should be strongly discouraged for a pitcher to return to the mound in a game once he/she has been removed as the pitcher.

The passion and importance placed on the success in the game of baseball, by parents, coaches and players must be tempered. The current practices of high pitch volume, early use of the curve and slider, inadequate instruction of biomechanics and a lack of appropriate conditioning will result in an increased risk of serious injury. These injuries can prevent young pitchers from reaching their maximum potential and can cause lifetime limitations in activity. Stress and overuse must be replaced by moderation. Advancing development coupled with appropriate teaching and conditioning will permit the elite player to evolve with a lower risk of a significant injury.

USA Baseball Medical & Safety Advisory Committee

Guidelines: May 2006

Position Statement

Baseball is one of the safest sports available for today's youth. However, many of the serious injuries suffered by adult baseball pitchers may have begun to develop at the youth level. One of the missions of the USA Baseball Medical & Safety Advisory Committee is to provide scientifically based information to its youth baseball members to reduce the risk of injury and maximize the younger player's ability to perform and advance to higher levels.

Pitch Counts

Pitches are counted and monitored for professional, collegiate, and high school pitchers in order for them to reduce the risk of injury. A 1996 survey conducted by the USA Baseball Medical & Safety Advisory Committee (*USA Baseball News*, 1996) showed that most experts believed pitch counts should be kept for youth pitchers as well. In response to this charge, the committee sponsored an epidemiological study by the American Sports Medicine Institute (ASMI) to look at this issue. This study – published in *The American Journal of Sports Medicine* in 2002 – showed a significant relationship between the number of pitches thrown and the risk of shoulder and elbow pain in youth baseball. It is the opinion of ASMI and the USA Baseball Medical & Safety Advisory Committee that joint pain indicates the early development of a potentially serious joint injury. Thus pitch count limits are recommended for youth baseball. If - for some valid reason - a league is unable or unwilling to enact pitch count limits, the league should limit the number of batters faced. Since 9 to 12 year-old baseball pitchers average about 5 pitches per batter, pitch count recommendations can be converted into batter limitations by dividing by 5. However, pitch limitations are a better choice than batter limitations for accurately monitoring and controlling risk of overuse.

Pitch Types

The 2002 study by the ASMI also showed that youth baseball pitchers who throw curveballs or sliders have an increased risk of elbow and shoulder pain. Therefore, youth pitchers should avoid throwing breaking pitches in order to reduce the risk of future overuse injuries.

Multiple Appearances

Because a youth pitcher usually stays in the game at another position after pitching, the player is eligible to return to the mound later in the game, according to the rules of baseball. While it may be good strategy to have a starting pitcher come back in and finish a game, it is not a good idea from a health and safety perspective. Muscles, tendons, and ligaments need time to “cool down” after physical activity, just like they need to “warm up” before activity.

Showcases

Showcases are established to give young players the opportunity to display their skills to scouts at higher levels of baseball. Unfortunately, showcases often occur near the end of the players’ season, when players are often fatigued and require rest and recovery. In other instances, players participate in a showcase after a prolonged period since their league ended and without adequate preparation to throw hard again. It is without a doubt that young throwers will try to overthrow at these events in an effort to impress the scouts and coaches, which further increases the risk of serious arm injury.

Multiple Leagues

In order to get more opportunity to develop skills, many young players play in multiple leagues. Although the amount of pitching in a league is often limited by league rules or the judgment of its coaches, individual pitchers sometimes exceed such limitations by pitching in more than one league at a time. The strength and skills needed to be a successful pitcher are developed by repetition; however, a pitcher must also give his body time to rest and recover in order to optimize his

development.

Year-Round Baseball

In certain parts of warm-weather states (Florida, Texas, California, etc.) baseball leagues are available in all seasons. However, the principle of periodization states that an athlete should have different periods and activities in his annual conditioning schedule. Specifically, baseball pitchers need a period of “active rest” after their season ends and before the next preseason begins. During active rest a pitcher is encouraged to participate in physical activities that do not include a great amount of overhand throwing.

Recommendations

Based upon its expertise and review of existing studies, the USA Baseball Medical & Safety Advisory Committee makes the following recommendations for minimizing a pitcher’s risk of future serious arm injury and maximizing his chance of success:

- Coaches and parents should listen and react appropriately to a youth pitcher when he/she complains about arm pain. A pitcher who complains or shows signs of arm pain during a game should be removed immediately from pitching. Parents should seek medical attention if pain is not relieved within four days or if the pain recurs immediately the next time the player pitches. League officials should inform parents about this consideration.
- Pitch counts should be monitored and regulated in youth baseball. Recommended limits for youth pitchers are as follows:
 - Recommended limits for 9-10 year old pitchers:
 - 50 pitches per game
 - 75 pitches per week
 - 1000 pitches per season
 - 2000 pitches per year
 - Recommended limits for 11-12 year old pitchers:

- 75 pitches per game
- 100 pitches per week
- 1000 pitches per season
- 3000 pitches per year
- Recommended limits for 13-14 year old pitchers:
 - 75 pitches per game
 - 125 pitches per week
 - 1000 pitches per season
 - 3000 pitches per year

Pitch count limits pertain to pitches thrown in games only. These limits do not include throws from other positions, instructional pitching during practice sessions, and throwing drills, which are important for the development of technique and strength. Backyard pitching practice after a pitched game is strongly discouraged.

- The risk of throwing breaking pitches until physical maturity requires further research but throwing curves and sliders, particularly with poor mechanics appears to increase the risk of injury.
- Pitchers should develop proper mechanics as early as possible and include more year-round physical conditioning as their body develops.
- A Pitcher should be prohibited from returning to the mound in a game once he/she has been removed as the pitcher.
- Baseball players – especially pitchers - are discouraged from participating in showcases due to the risk of injury. The importance of “showcases” should be de-emphasized, and at the least, pitchers should be permitted time to appropriately prepare.
- Baseball pitchers are discouraged from pitching for more than one team in a given season.

Baseball pitchers should compete in baseball no more than nine months in any given year, as periodization is needed to give the pitcher’s body time to rest and recover. For at least three months a year, a baseball pitcher should not play any baseball, participate in throwing drills, or participate in other stressful overhead activities (javelin throwing, football

quarterback, softball, competitive swimming, etc.).

References

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Fleisig GS, Barrentine SW, Zheng N, Escamilla RF, Andrews JR. Kinematic and kinetic comparison of baseball pitching among various levels of development. Journal of Biomechanics 32(12):1371-1375, 1999.

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Guidelines to Prevent Injuries in Young Pitchers

Henry A. Stiene, MD



Concerned parents and coaches often ask about what pitches are OK to throw, at what age they can safely be thrown, and how many pitches should be thrown in a game. The medical issues involved with pitching involve protecting the fragile growth plates, the cartilaginous lining of the bone, and the sometimes underdeveloped muscles in the young pitcher.

The chart below illustrates the type of pitch and the age that is appropriate to start throwing a given pitch. Generally, breaking balls should not be thrown until there is solid evidence that the growth plate of the elbow is nearly closed or strong enough to withstand the torsional force placed upon the elbow and shoulder when throwing a curve, slider, screwball, forkball, or knuckler. Age is a very good indicator, but athletes mature at different rates.

When the young pitcher starts to shave on a regular basis, this is a very reliable indicator of growth plate at the elbow having become nearly closed.

<u>TYPE OF PITCH</u>	<u>AGE TO START</u>
Fastball	Any age
Change up	10 y.o.
Curveball	14 y.o.
Knuckleball	15 y.o.
Slider	16 y.o.
Forkball	16 y.o.
Screwball	17 y.o.

A knuckle curve is permitted at any age after the pitcher has mastered a good change and is taught the proper mechanics and grip to throw this pitch. It is really not a “curve” in the sense that it does NOT involve any torque or rotational force on the arm or wrist as do other breaking balls.

Remember that these are guidelines and once the pitcher has gone through puberty, throwing some of the more advanced pitches is also a function of the skill and ability of the individual athlete.

Each team should have a pitching routine that includes pitch selection and count, days rest, working on mechanics on off days, as well as an in-season running and conditioning program, pre-game routine and off-season strength and conditioning.

What you do for in-season conditioning and running depends on the level that the athlete is participating in. A knothole team will not do the same things that a high school team would, but the principles are same; get the legs and arms warmed up and develop a routine that fits around the age and experience of the players.

The pregame routine should include running 2-4 poles and then stretching the legs, back, and shoulder muscles with each stretch being held about 20-30 seconds. Long toss starting at 45 feet and extending up to 120 feet (depending on age of pitcher) until the arm is loose is next. After having done this, the pitcher can start throwing off the mound.

The table below illustrates pitch count and off day counts based on the pitchers age. For example, if a 12-year-old pitches on Monday, takes Tuesday off and wishes to pitch on his own or in a game on Wednesday, his pitch count should be 27-47 pitches on Wednesday.



<u>AGE</u>	<u>1 DAY REST</u>	<u>2 DAYS REST</u>	<u>3 DAYS REST</u>	<u>4 DAYS REST</u>
8-10	21-35 pitches	36-50 pitches	45-60 pitches	50-75 pitches
11-12	21-35 pitches	36-50 pitches	51-65 pitches	66-75 pitches
13-14	21-35 pitches	36-50 pitches	51-70 pitches	71-80 pitches
15-16	21-40 pitches	41-60 pitches	61-80 pitches	80-90 pitches
17-18	21-40 pitches	41-60 pitches	61-85 pitches	86-100 pitches

Pitch counts should also be monitored on a weekly, seasonal, and yearly basis. Seasonal refers to the summer and the fall season, and in warm climates such as Florida, the winter season. Yearly refers to the cumulative number of pitches in a calendar year.

9-10 Year Old Pitchers

50 pitches per game or 75/ week
 1000 pitches per season
 2000 pitches per year

11-12 Year Old Pitchers

75 pitches per game or 100/ week
 1000 pitches per season
 2000 pitches per year

13-14 Year Old Pitchers

75 pitches per game
 125 pitches per week
 1000 pitches per season
 3000 pitches per year

15-18 Year Old Pitchers

90- 100 pitches per game
 150 pitches per week
 1500 pitches per season
 3500 pitches per year

When a pitcher has reached his maximum pitches in a game he should not work on pitching on his own the following day, nor should he be the catcher the following day. Often the catcher is also a pitcher and this needs to be kept in mind. Jogging, stretching, strengthening, and easy tossing are fine to do after having pitched the day before.

It is also discouraged that a pitcher not return to mound once they have been removed from the game as a pitcher.

Pitch counts do not include throws resulting from pitching lessons, playing other positions (with the exception of catcher), or throwing drills. A pitcher should not do “backyard” pitching after a game or do excessive pitching to work out of a slump.

Pitchers should develop proper mechanics as early as possible and engage in year round physical conditioning especially as they approach high school age. This conditioning should focus on core strengthening, flexibility, upper and lower body strengthening, and cardiovascular endurance.

Pitchers are also encouraged not to participate or pitch on more than one team per season as coaches tend to use better pitchers more often leading to excessive pitches.

For at least three months a year a pitcher should not participate in any overhead throwing activities, baseball, throwing drills, activities that involve rigorous overhead activity such as swimming or tennis in order to allow the arm to rest, recover, heal, and undergo natural maturation and development.

If a pitcher desires or has had injuries to his elbow or shoulder, ice after pitching is a good idea. A pitcher may play other positions in the game after having completed his stint on the mound. The only position the pitcher *should not* play in the same game is catcher.

Parents and coaches should listen to the pitcher if they say their arm or shoulder hurts and be removed from the game. If the pain is not relieved in a few days or returns the next time the player

pitched, the injury should be evaluated by a qualified medical professional with experience in dealing with these type of injuries.

Henry A. Stiene, MD is board certified in Sports Medicine and practices Sports and Orthopaedic Medicine with Beacon Orthopaedics and Sports Medicine. He is Co-Medical Director and Team Physician for Xavier University in Cincinnati. Dr. Stiene and Beacon Orthopaedics provide Sports Medicine care for many area high schools and colleges including Moeller, LaSalle, Roger Bacon, Mount Notre Dame, Kings, Mason, Madeira, Indian Hill, and Winton Woods, as well as the College of Mt. St Joseph and Wittenberg University.

Beacon Orthopaedics is also the exclusive provider of orthopaedic care to the Cincinnati Reds.

Dr. Stiene is also active in coaching baseball, softball, and CYO football. For further information about Beacon Orthopaedic and our locations, please visit our website at www.beaconortho.com or call us at [513-354-3700](tel:513-354-3700) during normal business hours or [1-888-77-FIELD](tel:1-888-77-FIELD) anytime.

