

Coaches Newsletter

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Orthopaedic Surgery
& Sports Medicine

Arms and the Boy

By Scott Mair MD

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THE baseball playoffs are in full swing, the first game of the World Series is on Wednesday and millions of young boys will be watching, dreaming of some day playing in the big leagues.

Once the World Series is over, the major-league players will head off to warm beaches or the golf course. Meanwhile, many youth baseball players won't have any time off: it has become increasingly common for them to play baseball year round. Unfortunately, this trend has led to a huge increase in arm injuries, to the point that some of the most respected sports medicine doctors in the country have termed it an epidemic.

At the University of Kentucky, my colleagues and I recently completed a study that began in 2000, in which we examined the shoulders of 32 male baseball players over a period of six years. When we started the study, the participants were between the ages of 8 and 15. We looked at changes in range of motion and strength. In the majority of the players, it was obvious on a simple X-ray which was their throwing shoulder.

We found that even in children as young as 8, shoulder adaptations occurred in response to repetitive throwing. The growth plate of the throwing shoulder changes, leading to an increase in external rotation, meaning that with the arm out to the side, the hand can be rotated further back.

In some ways, these results are encouraging. The gradual adaptations of the shoulder to throwing can protect against future injury and may increase throwing velocity. It appears that starting baseball at a young age may allow the body to gradually develop positive changes. The key, however, is that these adaptations to throwing should occur slowly over time, with adequate periods of rest.

The incidence of shoulder and elbow injury in young baseball players has risen significantly during the last decade. Dr. James Andrews and his colleagues at the American Sports Medicine Institute have reported at least a five-fold increase in serious shoulder and elbow problems in high school and younger baseball players. Dr. Andrews and Dr. Frank Jobe, inventor of the "Tommy John" procedure for reconstruction of the elbow, agree that the greatest risk to arm injury is playing baseball year round.

Participation in a single sport year-round is not unique to baseball. Parents and coaches encourage young athletes to "specialize" in a sport at an early age to enhance their chances for earning college scholarships and advancing to professional careers.

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It is particularly dangerous in baseball, where there is a high potential for overuse injuries, and the treatment of the more severe injuries does not always lead to a return to high-level performance. Many of us in the sports medicine community have seen talented young players forced to end their careers prematurely because of shoulder or elbow injuries.

Both Dr. Andrews and Dr. Jobe have advocated a minimum of three to four months a year as time away from baseball and other overhead throwing sports. They also encourage cross training with other sports.

Indeed, Little League Baseball officials have tried to address some of these concerns. When research at the American Sports Medicine Institute showed that high pitch counts increased the risk of injury, Little League officials changed their rules regulating limits on the number of innings pitched to limits on the number of pitches a child can throw per game. Rules regarding curve balls have not yet been put in place; however, the general recommendation is that pitchers not throw curve balls until the bones of the shoulder and elbow are done growing, about age 14 in most boys.

To combat overuse injuries youth baseball leagues, parents and coaches would be wise to focus on prevention rather than treatment. More important, we need to move away from this tendency to encourage our children to specialize in one sport and go back to seasonal participation in sports, with a youngster playing, say, soccer or football in the fall, ice hockey or basketball in the winter and baseball in the spring.

Probably the most important recommendation for reducing youth throwing injuries is common sense. When a young pitcher complains of arm pain, parents and coaches should listen and pull him from the game. If the pain does not improve within a few days or recurs the next time the player pitches, medical advice should be obtained.

Regulations on pitch counts are a great start, but so, too, is education about the perils of year-round baseball. It may not be a coincidence that Tom Glavine, at age 41, is still pitching in the major leagues without having had any major arm problems. Glavine was selected out of high school in the fourth round of the draft — by the Los Angeles Kings of the National Hockey League.

Scott D. Mair is an associate professor of orthopedic surgery at the University of Kentucky.

How to Make an Emergency Action Plan by Jenni Williams, ATC

What would you do if one of your athletes collapsed on the playing field during a game? Would you know what to do? Would you know whom to call? Who could you trust to assist you? Although it is unlikely that will happen to most high school coaches, we need to be prepared in case of an emergency. The best way to be prepared is to have a plan in place. This is called an Emergency Action Plan (EAP). An EAP is a written document that details what should be done in case of an emergency. The purpose of this document is to provide instructions to coaching staff in the event of a medical emergency regarding student-athletes. An emergency is any sudden life threatening injury or illness that requires immediate medical attention.



Emergency situations can occur at anytime during athletic participation. Expedient action must be taken in order to provide the best possible treatment. This emergency plan will help ensure the best care is provided. All people who work directly with athletes are required to familiarize themselves with this plan. Throughout the year there might be many times in which an athletic trainer or medical professional is not immediately available. This places athletic personnel, most likely coaches, in the position of potentially providing emergency medical services in the form of cardiopulmonary resuscitation and basic first aid. **All head coaches are required to have CPR/AED training.**

Athletic personnel should review the policy at the beginning of each academic year. An emergency plan must exist for all organized practices and competitions, including out of season training, strength training and conditioning workouts. If an athletic trainer or medical personnel is not available at a practice or game, then the coach is responsible for the emergency plan. Legal liability is very important to consider, and ALL athletic staff should understand this plan.

There are three basic components of this plan:

Emergency Personnel, Emergency Communication, and Emergency Equipment

The first and most important role is immediate care of the athlete. The most qualified individual on the scene should provide acute care in an emergency situation. Individuals with lower credentials should yield to those with more appropriate training. This should be determined in advance of each training session. The second role, equipment retrieval, may be done by anyone on the emergency team who is familiar with the types and location of the specific equipment needed. Student athletic trainers, coaches and equipment personnel are good staff members for this role. The third role, EMS activation, should be done as soon as the situation is deemed an “emergency” or “life-threatening event”. Time is the most critical factor. Activating the EMS system may be done by anyone on the team. However, the person chosen for this duty should be someone who is calm under pressure, who communicates well, and who is familiar with the location of the sporting event. After EMS has been activated, one member of the team should be responsible for meeting the emergency medical personnel as they arrive at the site of the contest, if they are not already there. Depending on ease of access, this person should have keys to any locked gates or doors that may hinder the arrival of medical personnel. A student athletic trainer, manager or coach may be appropriate for this role.

In the event that an emergency occurs involving a student athlete, a member of the Emergency Team should promptly contact Emergency Medical Services (EMS). Phone numbers of emergency personnel should be posted by the phone or in the medical kit. If there isn't a phone on the field, it is the responsibility of the certified athletic trainer or the coach (if an athletic trainer is not present) to bring a cellular phone to the field. A back up communication plan should be in effect if there should be failure of the primary communication system. It is important to note in advance the location of a workable telephone. Pre-arranged access to the phone should be established if it is not easily accessible. A cellular phone with back up battery is preferred. The majority of emergency equipment will be under the control of a member of the athletic trainer or head coach. The highest trained provider at the event should be aware of what equipment is readily available at the venue or event. All necessary emergency equipment should be quickly accessible. Appropriate personnel should be familiar with the function and operation of available equipment. The equipment should be in good condition and checked regularly. The highest trained member of the staff should determine **in advance** the type and manner in which any equipment is at or to be delivered to the site.

A well-planned emergency action plan is key to having a safe athletic program. All those involved with athletics at your school should be aware of plans in place to keep the athletes, staff, and spectators safe. If you have any questions or would like to see a sample EAP, please contact Jenni Williams, MS, ATC at sjwill2@uky.edu.

Comeback Athlete Award

UK Sports Medicine is a proud sponsor of the Scholastic Ball Report, a high school sports show that airs every Saturday morning on WKYT. We would like to thank all of the coaches who have nominated athletes this year for the comeback athlete award. We appreciate all of the entries that we received. We will continue with this award in September, so please continue to send us any nominations that you may have. This award will recognize an athlete who has worked incredibly hard to come back to their sport from a challenging injury. This award sponsored by DonJoy will be presented at the end of the month on the Ball Report to this special athlete. If you would like to nominate an athlete for this award, please e-mail Kara at kmrohr2@uky.edu and let me know what this athlete has overcome in order to return to their sport safely.

UK Sports Medicine Walk-In Clinic

- With our sports injury walk-in clinic, no appointment is necessary.
- Walk-in at 7:30 - 8am.
- We're located within Kentucky Clinic, with adjacent parking available.
- Staffed by sports medicine fellowship-trained physicians.
- Physical therapy and rehabilitation services are available.
- We're proud to be the team physicians for all UK Athletics.
- Call (859) 257-4577 for more information.



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