

Coaches Newsletter

January 2006

UKHealthCare

**Orthopaedic Surgery
& Sports Medicine**

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Benefits of Stretching in Injury Prevention

-Carly Manghelli, ATC

Since the beginning of sports, researchers have been fascinated with what it takes to make good athletes elite. Thankfully, we have realized what an important role conditioning has. We have also come to understand why injury prevention is so significant. As a Certified Athletic Trainer, preventing injury is my premier goal. We now know that, even with the best rehabilitation, some athletes are never the same after a considerable injury. This has prompted us to look at how we prepare the body for activity.

For example, static stretching has been believed for several years to be one significant key to preventing injury. Over the last few years, however, people have been questioning the role of static stretching in athletics. Through this research, it has been found numerous times that static stretching is still valuable, but that it is *most* effective after a workout when the muscles are the warmest.

So, what do we do about our pre-workout routine? Do we just start cold? No. Scores of athletic trainers, exercise physiologists, coaches, and other professionals have recently developed warm up exercises precise to their athletes' required skills. These have been named "dynamic warm up" or "dynamic flexibility" programs. Simply put, dynamic flexibility is flexibility increased through movement. Do not confuse dynamic flexibility with ballistic stretching of the 1980s. These movements are controlled, not bouncy. They require the body to move smoothly through the routine.

These routines have been effective in preparing key muscles for strenuous activity. How are they effective? First of all, they increase the body's core temperature and significantly increase blood flow to the muscles most involved in the sport. Secondly, they increase joint lubrication, fine tune neuromuscular function like coordination and balance, and, yes, increase flexibility by gently challenging the muscles to move beyond their cool-state length as they become warmer. These exercises do this by moving the body through a specific series of positions similar to those required in one's sport, yet slower and less explosively.

Not all of these exercises are new to us. A great example of dynamic flexibility exercise is the familiar lunge. What is the difference is the way we execute the movement. Ideally, when performing any exercise we should be acutely aware of joint alignment and muscle tension, but we all know our athletes have a tough time focusing on form all the time. That is one reason why the movements are much slower than normal. Doing this allows an athlete to focus and feel the exercise much more easily. By slowing down we are also in less danger of injury by eliminating muscle explosiveness until we are warm enough and our neuromuscular system is activated.

The most recent researchers have concluded that static stretching still has its place in athletics, but now dynamic flexibility does, too. When we think about it, this idea makes clear sense. When we are asking the body to accomplish things that require meticulously detailed training, it is logical that we would use just as detailed a warm up to prepare it for activity. There have been programs developed for most sports including upper body, lower body, and core. High school, college, and professional teams are using them all over the world. For examples and study articles, search web sites from reputable journals listed below. (Just navigate to each site's publications section and type "dynamic stretching" or "dynamic flexibility" into its search window.)

Great Reference Journals and Their Sites:

Journal of Athletic Training www.journalofathletictraining.org
Performance and Sports Medicine Forum www.nasm.org/WholsNASM
American Journal of Sports Medicine www.ajs.sagepub.com
The Physician and Sports Medicine www.physsportsmed.com

Good Example Program:

US Coast Guard Dynamic Flexibility Program
www.uscg.mil/hq/g-w/uscg/services/PT/DYNAMIC.htm

Specific Guidelines for Basketball and Injury Prevention



- Players should focus on conditioning exercises for the total body including upper and lower extremities.
- Players should focus on good warm-up and stretching prior to any ballistic movements as well as a good cool-down and stretching after activity.
- Footwear should fit properly to minimize the risk of ankle- and foot-related injuries.
- Replace footwear when the shock absorption is no longer adequate.

Specific Guidelines for Wrestling and Injury Prevention

- Depleting food and fluid to make a weight class may be detrimental to the health and safety of the athlete. Body composition and weight loss should be closely monitored.
- Wrestlers should be encouraged to wear protective headgear that provides ear protection and protective knee pads.
- To reduce the risk of skin diseases, wrestlers should shower before and after workouts; wash their workout clothes daily; dry their skin adequately; clean mats daily; avoid wearing street shoes on wrestling mats or wrestling shoes off the mats; wipe headgear down with alcohol pads after each use; and conduct daily total body skin inspections.
- Wrestlers with open wounds, broken skin or diseases of the skin should be discouraged from participating until the skin has healed or the wrestler has been cleared to participate by a physician. If allowed to wrestle, the athlete should have the affected skin covered to prevent cross-contamination.
- Proper strength and conditioning programs should be encouraged.

Importance of Hydration

-Kara Frey, ATC

Water is the most important nutrient. If the body becomes dehydrated, the metabolic processes slow down causing the body to not work as well. When you are dehydrated, an exercise or practice will "feel" difficult. Dehydrated body cells don't allow you to put forth your maximum effort. For every 1% to 2% loss of body weight due to fluid loss can cause a 15% to 20% decrease in performance! This is why it is so important to encourage athletes to take water breaks and hydrate before, during, and after activity.

Key Points to Remember about Hydration:

- Fluids should be ingested 2 hours before (20 ounces) and during (8 ounces every 15 to 20 minutes) practice for optimal performance.
- Continue to ingest fluids after practice to rehydrate.
- Avoid alcohol and caffeinated beverages because they will promote dehydration. Carbonated beverages will decrease the amount of fluid you are able to consume. Also, the added sugar will slow down absorption.
- Cold drinks are absorbed faster and also serve to cool the body to promote optimal performance.
- Thirst is a late sign of dehydration. An athlete's performance could decrease as much as 10% before they feel thirsty. Encourage them to start drinking fluids even before they feel thirsty.

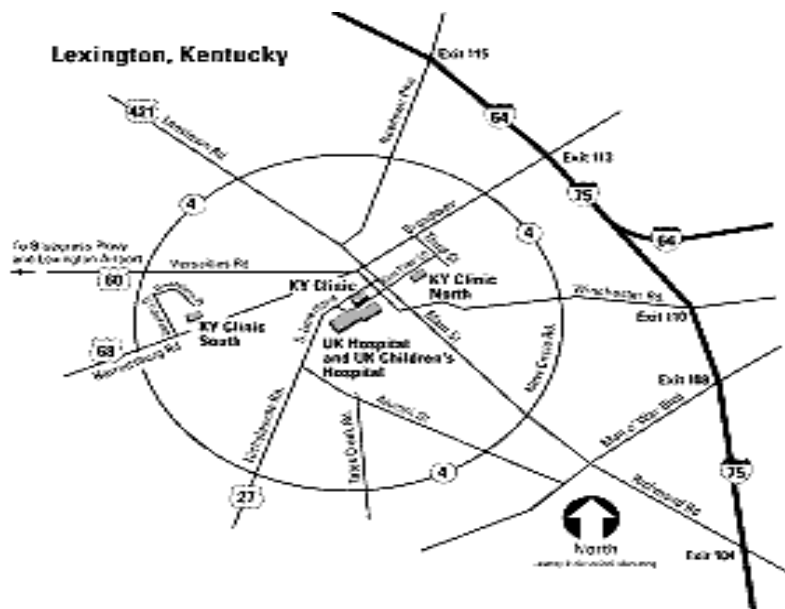


Signs of Dehydration:

- *Rapid heart rate*
- *Excessive fatigue*
- *Dizziness*

UK Sports Medicine Walk-In Clinic

- With our walk-in clinic, no appointment is necessary.
- Walk-in at 7:30am.
- 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.



Mark Your Calendars

Medical Aspects of Sports

University of Kentucky Orthopaedic Surgery and Sports
Medicine presents:

KHSAA Annual Coaches' Medical Symposium

March 11, 2006

8am-1pm

A brochure with a full agenda and registration information will follow this announcement. If you would like further information, please contact Tarra Crane at (859) 323-5533 x 307.

JANUARY 2006

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