USSF ‘A’ License Research Paper

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*Discuss your plan to implement a “dynamic” stretching program for a senior level team during a two-week pre-season training camp environment. Be sure to address the rational for using “dynamic” stretching, the benefits of such a program, and the specific movements that you plan to use.*

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When planning a two week pre-season training camp it is not only the fitness and individual player conditioning goals that need to be met. Consideration towards injury prevention and physical preparedness ready for the explosive sport of soccer needs to be taken into account. Having studied physical education and coaching techniques for the past twelve years, the importance of an effective warm up program before any physical activity or competitive game play is second to none. For many years people were, and still are, convinced that a traditional warm up procedure including; brief linear cardiovascular work to “break a sweat” followed by static stretching is sufficient preparation for a competitive game or training activity (Kurtz 01). Recent research now suggests that these people may be setting themselves up for a decrease in performance or even injury by failing to adequately prepare for the demands of their chosen activity. (Clark & Twist 2007) Researchers suggest that the short cardiovascular warm up which results in an increase in body temperature and an increase in oxygenated blood delivered to the working muscles is a positive step towards activity preparation. Unfortunately the static stretching that follows negatively decreases the body temperature, slows the nervous system activity and elongates muscle fibers leaving the athlete ill-prepared for dynamic activity! (Fowles, Sale & MacDougall 2000)

Taylor Tollison (2008) also comment on this dilemma…

“If we shouldn’t static stretch before a game or practice then how can we stretch to optimize performance on the field? The answer is dynamic stretching.”

Pierre Barrieu (2005) former head fitness coach for the US men’s national team also underlined these points by also suggesting…….

“Static stretching helps increasing range of motion but, although used for years in soccer warm-up, does not prepare adequately for a soccer game.”

And…..

“Incorporating Dynamic Stretching as part of your warm up is one way to help achieving soccer specific flexibility, in order to prevent muscle injuries.”

Now many of the best strength coaches support the use of dynamic stretching, but what are dynamic stretches? According to Kurz (2001) dynamic stretching consists of functional based exercises which use sport specific movements to prepare the body for movement. Dynamic stretching, involves moving parts of your body and gradually increasing reach, speed of movement, or both.

We all recognize that to be successful in soccer, especially at the senior level, it is vital that as coaches, we develop the players explosive muscles, optimal power, coordination and eccentric strength (cutting, changing direction or jumping to win header). The pre-season training camp should prepare the players mind and body and leave them in optimal condition for the games and training in the upcoming season. At the beginning of each workout during the training camp the Dynamic Stretching period will prepare each player for the soccer related dynamic activities to follow.

Each training session of my pre-season training camp could be broken down into three key elements:

***1) Beginning -             Dynamic Warm Up***

***2) Middle -                  Actual Workout***

***3) End -                     Cool Down / Static Stretching***

***Dynamic Warm up***

My warm up can also be broken down into three stages.

1. Dynamic Stretches/flexibility – This will include aerobic activity to the raise body temperature, increase blood flow and to work the large muscles. It will also avoid quick acceleration or deceleration and any sudden changes in direction.
2. Improved Running Technique – Activity utilizing fast arm action and rapid leg movement prepping the mind and body for speed. Cannot run fast by training slow! (Critchell 2003)
3. Specific soccer warm up (Ball work related to topic of the session ahead) – Can begin passive but will build in speed and quickness. The aim is to speed up the nervous system in order to improve anticipation, decision making, perception and reaction speed.

***Dynamic stretches/flexibility***

The team will space themselves out on the side line and 2 lines of cones will be placed at 10 and 20 yards parallel to the touch line. See below.

\* \* \* \* \* \* 20 yards

\* \* \* \* \* \* 10 Yards

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Together as a team they will carry out a group of exercises from the touch line to the cones (20 yards away) only pausing for just over a second during stretches. After each exercise the team will jog back to the touch line slightly increasing the pace each time.

***1) First group will increase blood flow, work major muscles and raise body temperature:***

1. Jogging with one leg kick up (Left leg then right leg)
2. Jogging with High knees (Left leg then right leg)
3. Backwards running / Side stepping
4. Carioca keeping shoulders square and good leg cross over’s
5. Skip for distance
6. Skip for height
7. Knee raise and open groin / hip flexor (open the gate) – Right leg then left
8. Knee raise and close the groin / hip flexor stepping across the body (close the gate)

***Next group will work on the Stretching and flexibility of major muscle groups:***

1. Leg lunges with trunk rotation

**Purpose:** Movement related to tackling or reaching out to collect the ball

 Also improves quickness in changing direction and stretches lower oblique

1. Leg lunges and pull knee up to chest each step

**Purpose:** Improve Hamstring flexibility for sprinting and collecting ball on thigh

1. Calf stretch lunge

**Purpose:** Combining above stretches with calf work out

1. Side step lunge bending leading knee then turn

**Purpose:** Inner thigh / groin full extension

1. Flamingo – raising one arm high in the air extending up calf lifting as high as possible

**Purpose:** Quadriceps extension combined with calf raise

1. Straight legged sideways crossovers – reaching for ground with each step

**Purpose:** Hamstring and lower back extension

1. Lifted hip flexor (standing on one leg pull up lower leg with knee facing out)

**Purpose:** Stretch groin and hip flexors

1. Straight leg reach down to toes while lifting straight opposite leg behind body

**Purpose:** Improve balance while stretching hamstrings, groin and gluteus

***2) This group will prepare upper and lower body for explosive soccer movements and decrease reaction times:***

1. Fast high knees working legs and arms, at 10 yards accelerate into 75% run
2. Repeat accelerating to 85%
3. Repeat but at 10 yards plant foot and turn to accelerate back to touchline.
4. Bunny jumps (forward / Sideways), at 10 yards accelerate
5. Jockeying backwards (defending stance) switching feet every 2 steps.
6. Full 20 yard and build up to 100% speed. Repeat as needed.

***3) Ball work related to topic of the session ahead:***

To conclude this paper I wanted to inform others that when introducing Dynamic Stretches to a new team or individuals, for the first several practices the players will probably continue to feel the need to carry out an extensive routine of static stretching. Psychologically they depend on it as they have been doing these stretches for their entire soccer career. If they do feel it necessary to static stretch or they are recovering from a specific injury that requires additional stretches required by a certified trainer, I always have them carry out the static stretches individually prior to the start of our team warm up. Following a couple of practices the psychological need will soon deteriorate and they will physically and mentally appreciate and accept the dynamic approach.

“Dynamic stretching during warm-ups, as opposed to static stretching or no stretching, is probably most effective as preparation for high-speed performances required in sports such as soccer. If static stretching is used, evidence suggests that limiting the stretches to short durations and following the stretching with further activity will minimize decrements to power-based performance.” (Little & Williams 2006)

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[www.elitesoccerconditioning.com](http://www.elitesoccerconditioning.com)

Or as Andrew Clark and Peter Twist (2007) clearly state…

“The Dynamic Warm up: structured warm up that prepares your client’s mind and muscles for vigorous activity.”

Quote……Important warm up / preparation before

When working with soccer teams…..

by

A definition by Kurz (3) sums it up: according to him, dynamic stretching "involves moving parts of your body and gradually increasing reach, speed of movement, or both. He also warns:" Do not confuse dynamic stretching with ballistic stretching! Dynamic stretching consists of controlled leg and arm swings that take you (gently!) to the limits of your range of motion.

As we have (unfortunately) seen, static stretching remains the most widely used form of stretching during soccer warm ups. It always strikes me when I observe players performing a very basic standing split adductors (groin) stretch… minutes away from kick off.

DYNAMIC STRETCHING

Many of the best strength coaches support the use of dynamic stretching. Dynamic stretching
consists of functional based exercises which use sport specific movements to prepare the body for
movement. (8) "Dynamic stretching, according to Kurz, "involves moving parts of your body and
gradually increasing reach, speed of movement, or both." Do not confuse dynamic stretching with ballistic
stretching! Dynamic stretching consists of controlled leg and arm swings that take you (gently!)
to the limits of your range of motion. Ballistic stretches involve trying to force a part of the
body beyond its range of motion. In dynamic stretches, there are no bounces or "jerky" movements.

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As coaches, trainers and parents we all want our athletes to lower their incidence of injury and increase performance.  Dynamic flexibility has been used successfully by trainers and coaches to increase flexibility and possibly lower the incidence of injury.  It is the job of the coach or trainer to pick the method they feel is best suited for the sport and athletes.  The above evidence suggests the possibility that static stretching prior to activity is not the best solution.  Static stretching doesn’t necessarily lead to a decrease in injury and but may actually decrease performance.  If one purpose of the warm-up is to warm-up the body, wouldn’t static stretching actually cool the body down?  If static stretching is not the solution to a pre-game warm-up what is?  Dynamic stretching.

A sports performance program could look like this: