

Dynamic Stretching Coach Jack Gregory

Dynamic stretching involves stretching while performing a specific movement pattern (fundamental or sports specific). It utilizes movements that are controlled which allow the individual to mimic and prepare for the movement patterns that will follow the stretch. Dynamic stretching helps to set the proprioceptors of the muscles, ligament, and joint capsules while allowing the muscles to strengthen eccentrically. Dynamic stretching includes stretching in all three planes of motion. This is a huge benefit in preparing, strengthening, and developing the joint structures and supporting structures like the major muscles, stability muscles, and synergy muscles along with the joint capsules. Static stretching simply does not do this and that means you as a coach are not preparing your young charges correctly for what you are about to do in a full speed practice.

A Good Base for a Warm up and Stretching Routine

Warm up Sequence

Have the team split into lines so that you have no more than five players in a line (that means if you have thirty players you would have six lines of five players). Any more than five and it can become cumbersome to watch each kid as they perform the warm up routines with one coach. If you have an additional coach you can increase it up to ten lines.

LINEAR WARM UP

This is done to twenty yards out and a form run back and then to the end of the line.

- 1) Form Run
- 2) High Knees
- 3) Butt Kickers
- 4) Drum Majors
- 5) Fast Skips *
- 6) Straight Leg Bounding *
- 7) Walking Lunges

LATERAL WARM UP

This is done to ten yards out and back.

- 1) Walking Shuffle
- 2) Walking Crossover
- 3) Shuffle
- 4) Tapioca
- 5) Carioca
- 6) Shuffle and Touch *
- 7) Lateral Run *

8) Lateral Lunge

UPPER BODY WARM UP

This is done to ten yards and sprint back.

- 1) Bear Walk
- 2) Bear Crawl
- 3) Crab Walk *
- 4) Spider Man *

BACKWARDS WARM UP *

Done at ten yards and form run back.

- 1) Backwards Walk *
- 2) Backwards Run *
- 3) Slow Back Pedal *
- 4) Back Pedal +

* You can add these after the base movements are mastered.

This is the basic Warm up cycle that I use before any practice. It takes twenty minutes when you first introduce it and start teaching form and proper movement. After they begin to master the movements and understand the warm up sequence it gets down to about ten minutes. At that point you can add the additional movements.

Start slow and work on proper movement and form and as they master it then have them increase the speed. When you're doing warm ups nothing is ever at 100%, at most it is 75% and no more than that.

Explanation of Movements

Linear – warms up body in the sagittal plane for the most part.

Form Run - a run at 50 to 60% using correct linear form.

High Knees – a jog stressing the knee lift portion. The knee should attempt to go above the belly button. Maintain proper linear form at all times. This stretches the hamstring and all the stability and synergy muscles associated with the hamstring.

Butt Kickers – a jog stressing the heel lift portion. The heel should make contact with the butt. Maintain proper linear form at all times. This stretches the quadriceps and all the stability and synergy muscles associated with the quads.

Drum Major – this is at a fast walk. One leg is raised and the lower leg is rotated inward so that the heel of the foot strikes the hand of the opposite arm. The hand is at the waste line. The heel should go as high as possible crossing the midline. This stretches the hip

flexors and gluteus and all the stability and synergy muscles associated with the hip flexors and gluteus.

Fast Skips – this is basically skipping at a fast rate using good linear form. Start with a slow longer skip and work towards a fast rapid skip with the feet touching the ground and quickly coming off the ground. Stretches and warms up the muscles in the foot, ankle, and shin.

Straight Leg Bounding – Some times called Russian skips. The legs are straight using a good linear. The feet should have very little ground contact and work for the feet to get good height off the ground. This is another good movement for the hamstrings and gluteus.

Walking Lunges - Take a long step out so and lean forward so that the back leg is almost straight and then sit down into the lunge. This stretches the pelvis muscles, inner muscles around the hip joint, quadriceps, and hip muscles. It also works stretches the hamstring of the front leg as well. All the stability and synergy muscles are being warmed up and stretched as well. Make sure the upper torso is upright at all times. Have them do this slowly so that they get a good stretch.

Lateral – warms up and stretches the body in the coronal and transverse planes.

Walking Shuffle – This is nothing more then a shuffle at a walk. IT is the first exercise we do in our lateral warm up. Make sure you are using correct lateral form at all times. The feet do not touch or cross over. The hips and knees are bent and the body is low to the ground but not bent at the waste. This stretches the hip and pelvis muscles as well as the groin muscles and all the stability and synergy muscles involved.

Shuffle – This is a faster version that further warms up the muscles and stretches them.

Walking Crossover – This is nothing more then a carioca at a walk. The back foot cross over as far as possible causing the front knee to slightly bend. This warms up and stretches the hip flexors, lower back, and pelvis and all of the associated stability and synergy muscles.

Tapioca – This is a fast short cross over steps using good lateral movement form. This really stretches the hip flexors and gluteus as well as the lower back muscles and all of the associated stability and synergy muscles.

Carioca – This is a longer cross over step using good lateral movement. This further stretches the hip flexors and gluteus as well as the lower back muscles and all of the associated stability and synergy muscles.

Shuffle and Touch – This is nothing more then a shuffle with the upper body staying low and on every second shuffle the hands touch the ground in between the feet while the head stays up. This further stretches the lower back, gluteus, and hamstrings as well as all the normal muscles being stretched during the shuffle.

Lateral Run – This is running laterally with the rear leg being in front at all times. Good lateral movement form is important. This stretches all the leg muscles, hip flexors, pelvis, and lower back muscles as well as the stability and synergy muscles involved in the coronal and transverse planes.

Lateral Lunge – Does the same thing as the walking lunge but in the coronal plane. Make sure the upper torso is upright and this is done as a slow pace.

Upper Body – This warms up the upper body in the sagittal plane but it adds body weight and ground force reaction.

Bear Walk – A bear crawl at a walk. The butt should be down and the knees stay off the ground. The walk is to develop proper movement form for the full speed bear crawl. It stretches and warms up the muscles in the arm, shoulder, upper back, and chest along with the stability and synergy muscles. It also warms up the core. This is performed on all fours with the stomach facing the ground using all four appendages.

Bear Crawl – A full speed version of the bear walk. Further warms up and develops the upper body; also good for developing coordination in the four appendages and body awareness.

Crab Walk – This is performed on all fours with the butt facing the ground. This basically works out and stretches all the muscles that the bear crawl does but in reverse order.

Spider man – This is a more complex bear crawl. The athlete basically starts in the prone position with the arms and legs away from the body. He then lifts his body off the ground and crawls (like spider man). This is a much more complex movement that further develops body awareness and coordination.

Backwards Walk – This simply walking backwards. The athlete is warming up and stretching all the muscles that a form run or a linear exercise would except in reverse. This is a complex movement that helps to teach and master backwards movement.

Backwards Run – Running Back wards applying good linear form and leaning slightly forward. Your eyes are forward at all times and you simply look for the last marker out of the corner of your eyes.

Slow Back Pedal – The chin is over the knee and the hips and knees are bent so you are low. The heels of the feet drive back in short slow steps as you pump your arms. Done at 50% of the normal speed.

Back Pedal – As above but at full speed.

Speed Training

I have found that with young kids if you apply some time to practice to develop linear and lateral speed that over the course of the season you are developing superior athletes. If you have a four-week preseason you can actually start to see benefits in game one.

First and foremost is upper body technique. It is the most overlooked area of youth athletes. Youth athletes simply have sloppy upper body form and correcting it is fairly easy and the payoff is enormous.

Second is balance and stability. Most kids simply don't have good balance and stability and that is because their body is growing and developing and the last muscles to develop are the muscles around the joints that provide balance and stability to the major muscles and joint structure. Taking time to develop these allow for smoother movement and more coordinated movement. From a neuromuscular stand point this is a key component to speed.

Third is explosive leg strength conditioning. The vast majority of kids either simply have poor explosive leg strength or don't know how to skip, hop, or jump which are fundamental parts of explosive leg strength and running in general.

Fourth is core conditioning. Young athletes normally have weak cores and developing them is a pretty easy task if you know what your doing.

Lastly is starting that is how to start from multiple positions and get into full speed. If you take the time to teach kids how to start and how to accelerate properly it will increase overall quickness and speed.

Couple all these together and you get quicker and faster athletes.

Basic Linear Speed Techniques

The first rule you should always apply to coaching is not to "over coach" an athlete. The second rule is to not teach an "unnatural movement technique". I see a lot of so called knowledgeable speed coaches over teaching techniques and teaching incorrect movement techniques that do not fit the athlete's natural movement patterns. This can cause more problems and damage then good so be aware of it at all times.

Linear Actions you are looking for in the athlete:

Tall action: This means erect; running on the ball of the foot (not toes or heels) with full extension of the back, hips, legs as opposed to "squatting down low" when running. Developing and stressing proper posture while in movement and static is fundamental to creating a good running form.

Relaxed action: This means move easily, as opposed to tensing and "working hard" to move. Let the movements of running flow; the athlete should look like a wheel in motion with the hips and torso being the hub of the wheel. Keep the hands relaxed, the shoulders low, and the arms swing rhythmically to the sides.

Smooth action: This means float across the top of the ground. All motion should be forward not up and down or to the side. Leg action should be efficient and rhythmic. The legs should move easily under the body in a constant even pattern like a moving wheel.

Drive action: This means push from an extend rear leg (very important), rear elbow drive with a high forward knee drive followed by a strike of claw foot action just behind the body's center of gravity (COG),

Proper Sprint Technique

Head and neck are aligned with the body. You should have straight line from the head, neck, back, and rear leg. The head and neck should be relaxed; by simply letting the jaw hang will help reduce tension in the head and neck area. This tension can cause the shoulders, arms, and back to tense as well so it is imperative to relax the jaw and neck muscles. It will cause restricted arm movement; which reduces speed. The eyes are looking straight ahead past the finish point.

The arms should be relaxed with elbows bent near or at 90 degrees. Swing should come from the shoulder and should be in line and straight; it should never cross the body at all but instead be motioning down field at the finish. The fingers should go just above the midline of the chest and go just behind the hip. Arm swing should be in concert with the lower body. When the right arm goes completely forward (elbow pointed down and up field) at the same time the left foot (rear foot) is coming off the ground (from ball of foot). The left arm is coming back with the elbow pointed back and slightly up as the right leg is going forward (knee is lifting). As knee is driven forward, the arm on the opposite side of the body is also driven forward from a position behind the body. The arms move forward in front of the body until the hands are about shoulder high. The arm should never leave the flexed position (often runners swing the arm out at the back). The amount of the opening and closing of the angle should be fairly small. The elbows should never be away from the body but almost brush the ribcage (staying in line with the direction).

There is a myth that the hands should be straight out (as if shaking some ones hand) is in fact a false misconception and should not be listened to. When you keep your hand straight you tense the muscles in the palm and this causes the muscles in the forearm to tense as well which in turn cause the muscles around the elbow to tense causing the elbow to lift from the body or run in a less smooth manner. Instead the hands want to be in a curled position naturally. Meaning the fingers should curl into the palm as if wrapped around a roll quarters and the thumb should rest just over the index finger.

Let the body lean forward naturally but don't not bend over. The body should have a slight forward tilt with the head, neck, back, hips, and back leg inline. At the acceleration phase (starting) there is going to be more lean initially. The athlete should be looking down in front of him, which in turn creates additional lean to create a shorter stride (faster shorter steps = more power). The athlete as he accelerates and the body begins to lift to it natural lean his head comes up and looks past the finish line.

Run on the balls of the feet and not the toes or heels. The ball should strike the ground and stay on the ground for just an instant as the leg turns over and drives (pushes) off the ground. This is key point a lot of young runners run on the toes and that causes excessive braking or a loss of power (push) due to not contracting the calve muscles when the ball of the foot strikes the ground

The foot should land directly underneath the sprinter. An over-stride will result in the foot landing in front of the center of gravity, which will cause braking. Under striding causes a lot of fast movement and energy expenditure without covering enough ground. A key point is that the body leans at about 60 degrees (approximation) and if a line is drawn through the body from the head to the foot and the line becomes baseline the forward thigh of the runner should be at or near 130 degrees to that baseline. This means the knee needs to drive forward (not upward) to create the pulling force necessary to increase speed.

Keep the head and trunk still and the entire body relaxed. The body (specifically muscles) is more receptive to neuromuscular commands from the brain when it is relaxed. Furthermore the torso and core must be relaxed as it must move in multiple directions as the body increases in speed. When the right arm is back the left leg is back that means the right shoulder is forward and the left hip and lower back is moving backward. This means the torso is twisting and in doing so if the torso is tensed there is a bigger chance of muscle pulls in the torso area (specifically the lower back and rear shoulders). Also the more tense the torso is the less flexible it becomes and this reduces not only neuromuscular control but decreases speed as the body cannot create additional force through the torso.

Rotating the shoulders creates sideward-motion forces, which detract from the force needed to propel you directly forward as quickly and forcefully as possible.

Part of good technique is to relax the trunk, arm, and antagonists of the stride movements. Energy is often wasted to keep accessory muscles contracted and the body rigid, and wasted energy equals decreased speed. Use relaxation to be as efficient as possible and recover as quickly as possible.

Now bear in mind if you are football player and you carry the ball (QB, RB, WR) you need to understand how to carry a ball and run as well. Simply follow the above techniques and lock the ball into the inside of the elbow by turning the hand upward with the palm of the hand on the front tip and the bottom tip in the inner elbow. Simply press the ball and the fingers lay on the top of the football keeping it locked in. The angle is still 90 degrees and the arm still moves inline with the direction. The ball comes in and is locked by turning the hand inward and pressing the ball into the body and the other hand going over the ball to cover it. Do not let the ball affect your technique. Also you must be aware of your gear (helmet and pads altering your technique. So work on perfecting it while in gear with a ball.

Upper Body Training

Knees – sitting on both knees with butt of the legs so that the thighs, butt, and upper body are straight. Using good arm form start slow using good arm technique and relaxing the upper body. Start of very slow and build up to 75% speed. Arm turnover is the real key to speed. The faster the arms go the faster the legs go.

Standing – Now standing with feet shoulder width apart work on upper body technique once more but now really stress the importance of the hip swing in concert with the arm swing. Let them feel how the body works together. Again start slow and build up to 75%.

Running Place – Now have them incorporate the lower body by using good form again. Make sure they are on the balls of their feet and the knees are driving up wards. Everything appendage wise should be moving towards the finish line. Start slow so that they can feel the body movement and allow the neuromuscular system to develop proper patterns then increase the speed.

FORM RUN – Four to Six reps at 40 yards. The key is to let them do it at their own pace at 50%. Allot at least a full minute for this may be more. Watch as they do the runs and stress correct form.

At first you will do Knees and Standing for one minute each. As they master it and get comfortable (that is key) add Running In Place then Form Run.

EXAMPLE – BEGINNER

KNEE – 1.5 minute
STANDING – 1.5 minute

(lasts for two weeks)

EXAMPLE – INTERMEDIATE

KNEE – 30 seconds
STANDING – 1 minute
RUNNING IN PLACE – 1 minute

EXAMPLE – MASTERING

KNEE – 30 seconds
STANDING – 30 seconds
RUNNING IN PLACE – 1 minute
FORM RUN – 1 minute

EXAMPLE – ADVANCED

STANDING – 30 seconds
RUNNING IN PLACE – 30 seconds
FORM RUN – 2 minutes

As they master the techniques you can move away from upper body technique and only introduce it occasionally as a refresher.

Balance and Stability

This is actually a very easy portion to teach but offers a lot of positive feedback.

Have every player stand on a line double arms distance or in a circle double distance apart.

Balance Progression (Left first and then right leg)

During the progressions remind them as they lose balance and need to rebalance or stabilize to simply bend or straighten the weight bearing knee and hip. This teaches them how to shift their center of gravity and use their lower body to correctly stabilize themselves.

BASIC –

Keeping Leg Straight raise the left foot straight out so that it is almost a foot of the ground. Calling out NEURTAL allow them to hold it for three to five seconds once they achieve balance.

KNEE UP so the knee is above the groin line. Have them hold that position for three to five seconds once they achieve balance.

KNEE OUT so that the knee shifts out to the side at the same height as the KNEE UP and hold for three to five seconds once they achieve balance.

NEUTRAL and hold for three to five seconds.

Switch legs. They should not allow their leg to rest at any time during the sequence. This develops strength in the stability muscles of each leg in different manners.

Do each side two to three times.

INTERMEDIATE –

KNEE UP
KNEE OUT
NEUTRAL

HEEL UP – left the heel of the foot up towards the butt and hold that position for three to five seconds.

NEUTRAL

SWITCH

Do each leg two to three times.

ADVANCED –

KNEE UP
KNEE OUT
NEUTRAL
HEEL UP
NEUTRAL

TOUCH THE GROUND – have them bend over and touch the ground with both hands as they lift neutral leg behind them. It must remain straight at all times. Hold that position for three to five second.

Do each leg two to three times.

At this point you should be about six to seven minutes into speed training.