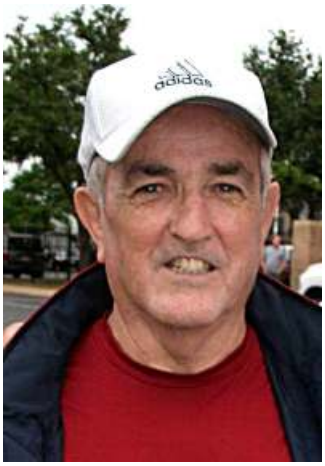
Ol' Joe's Rants 'n Raves

THE PERFECT STRIDE – Part 1II



PROPRIOCEPTIVE CUES

Proprioceptive cues are images and other sensory cues that enable you to modify your stride for the better as you think about them while running. For Example, by thinking about actively driving your feet into the ground instead of passively allowing them to drop to the ground while running, you can increase your leg stiffness on impact and your ability to generate thrust quickly and efficiently with minimal ground contact time.

Using proprioceptive cues effectively requires concentration and discipline. Our natural tendency is to let our thoughts wonder aimlessly while we run. If you're serious about improving your stride, you must fight this tendency by forcing yourself to concentrate on and execute a particular proprioceptive cue for hundreds, even thousands, of consecutive strides. The stride improvements that proprioceptive cues facilitate do not happen overnight because the motor patterns that underlie your current stride habits are deeply ingrained, to the point of being almost completely automatic.

You will get the best results from proprioceptive cues if you use one at a time throughout the entire length of every run you do. At first you might find it difficult to keep your mind on your stride from start to finish in your runs, but eventually you will develop the ability to divide your awareness, so that one part of your attention will focus on the feel of your stride even as your thoughts wander.

It's not necessary to "master" the stride change associated with any given cue before moving on to the other cues. In fact, no matter how perfect your stride becomes, you can still benefit from using each cue regularly as a reminder to keep your form sharp, especially when you are fatigued. Therefore, I like to recommend that you cycle through the following cues in an endless rotation, never neglecting any of them for long.

Twelve Cues

Falling Forward

Tilt your whole body slightly forward from the ankles as you run. (Do not bend at the waist!) When you are first getting the feel for this cue, feel free to exaggerate your lean to the point where you feel you are about to fall on your face. Then ease back to a point where you feel comfortable and in control, but where gravity still seems to be pulling you forward. This cue will help you correct over striding, because when you are running with a slight forward tilt in your body, your feet will naturally land close to your center of gravity.

Navel to Spine

Concentrate on pulling your belly button inward toward your spine while running. Using this cue will activate the deep abdominal muscles that serve as important stabilizers of the pelvis and lower spine during running. Runners who do not properly contract the deep abdominals during running cause the

pelvis to tilt forward excessively as the thigh pulls backward during the thrust phase. When the deep abs are kept tight, most of the force generated by the buttocks and hamstrings is transferred to the ground, hence into forward movement. However, when the deep abs are not kept tight, some of the force generated by the buttocks and hamstrings is wasted in stretching the deep abs, causing the pelvis to tip forward, and consequently never reaching the ground.
Note that this cue requires an especially high degree of focus to sustain throughout a run. According to Michael Frederickson, Ph.D., a running biomechanics expert at Stanford University, more than nine in 10 runners fail to engage their deep abdominal muscles properly during running. We are simply not accustomed to using these muscles, so if you let your thoughts wander away from them for even a moment, you will unconsciously relax them. The core muscle training exercises are a good complement to this proprioceptive cue. They will teach you to "find" and engage these muscles in simpler movements, making it easier to do the same when running.

Running on Water

Imagine you are running on water, and your goal is to not fall through the surface. To do this, you must overcome the squishiness of your running surface by applying maximum force to the water in minimum contact time, like a skipping stone. Try to make your feet skip across your running surface in a similar way: quickly, lightly, yet forcefully. This cue will teach you to stiffen your stride, minimize ground contact time, and begin the thrust phase earlier.

Pulling the Road

Imagine that your running route is like a giant non-motorized treadmill. On a non-motorized treadmill, you are able to run in place by pulling the treadmill belt backward with your feet. Envision yourself doing the same thing with the road as you run outdoors. You are not actually moving forward---you are simulating forward movement by pulling the road behind you with each foot. This proprioceptive cue will teach you to begin generating thrust earlier, stiffen your stride, and minimize ground contact time.

Scooting

Run in a "scooting" manner by actively minimizing vertical oscillation. Do not exaggerate this action to the point where you are reducing your stride rate or increasing ground contact time. Just think about thrusting your body forward instead of upward while running. If it helps, imagine you are running beneath a ceiling just two inches above your head that will leave you with a terrible headache if you smack into it repeatedly throughout a run. This proprioceptive cue will enable you to run with greater stability by reducing vertical impact forces.

Pounding the Ground

Most runners are taught to run as softly as possible. In fact, running speed is almost entirely a function of how forcefully you hit the ground with your fee. The typical runner---especially the typical over striding runner---allows his or her foot to fall passively to the ground with each stride. Instead, practice actively driving your foot into the ground. Be sure to give a somewhat backward pull to this driving movement rather than a completely vertical movement. Also, if you are currently a heel striker (over

strider), work on shortening your stride and landing flat-footed before using this proprioceptive cue, which teaches you to stiffen your stride, thrust earlier, and minimize ground contact time.

Driving the Thigh

Concentrate on driving the thigh of your swing leg forward a little more forcefully than you normally do. A more forceful forward-upward movement of this leg will create a counterbalancing downward-backward action in your opposite leg as it comes into contact with the ground. (Think of the way your free arm moves in opposition to your throwing arm when you throw a ball hard.) This cue will enhance your stride symmetry and stiffness.

Floppy Feet

The human foot contains twenty-seven bones and dozens of muscles and ligaments. This complex structure enables the foot to deform in an intricate, wavelike pattern while it is in contact with the ground during running. Unfortunately, shoes greatly restrict this natural movement. You can get a lot of it back by concentrating on running with relaxed, “floppy” feet while running. When practicing this cue, continue to strike the ground forcefully with your feet, but use the muscles of your upper leg to generate this force while keeping your foot relaxed, enabling it to absorb and transfer impact forces in a way that will minimize stress on specific tissues and increase the amount of free elastic energy you are able to store and reuse.

Butt Squeeze

In the instant before your foot makes contact with the ground, contract the muscles in the hip and buttock on that side of your body and keep them engaged throughout the ground contact phase of the stride. This proprioceptive cue will enable you to maintain greater stability in the hips, pelvis, lower spine, and perhaps even the knees as you run, and will minimize wasteful (asymmetrical) long axis rotations.

Feeling Symmetry

Focus your attention on a specific part of your body, or stride, on both the left side and the right side. Concentrate on the feel of your arm swing, the forward movement of your swing leg, the moment of foot strike, push-off, or something else. Compare the feeling on the left side of your body to that on your right side. If there is a discrepancy, adjust your stride in a way that eliminates the discrepancy, if possible, or at least reduces it. Specifically, alter your stride on the side that feels less comfortable, natural, or “right” to make it feel more like the side that feels better. Obviously, this proprioceptive cue helps you reduce asymmetries in your stride.

Axle between the Knees

Imagine there is an axle, dowel, post, or something else of the sort that is positioned between your knees and pushes your knees half an inch farther apart than they would normally be while you run. This proprioceptive cue helps you engage the hip flexors and hip external rotators and prevent internal rotation of the thigh---a common cause of injuries.

Running against a wall

Imagine there is a wall right in front of your nose that moves forward with you as you run. Your knees or feet will repeatedly knock into this wall unless you shorten your stride and place your feet underneath your hips instead of out ahead of your body. Leaning slightly forward at the ankles will also create a little more room to drive your thighs forward without banging your knees. This proprioceptive cue facilitates a more compact stride by correcting over striding.