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## Dynamic Flexibility Exercises for Runners

Whenever you perform a sports action such as running, your working muscles (called agonists) have to overcome a certain amount of resistance from other, non-active muscles (called antagonists). Dynamic flexibility is the ability of non-active muscles to relax and stretch during sports actions so they present minimal resistance to the working muscles, thereby enhancing the efficiency of the movement. The more tension is held in your antagonists during running, the more resistance your agonists will have to overcome in contracting, and the worse your running economy will be.

Contrary to popular wisdom, muscle tension is not a structural problem—namely “tightness”—within the muscles. Rather, it comes from motor signals from the brain that tell the fibers in that muscle to hold tension. Therefore the secret to improving your dynamic flexibility in running is to train your brain to tell your antagonists to relax and stretch when required to during running.

For runners, dynamic flexibility is much more important than passive flexibility, or simple range of motion in particular joints. Studies have shown that elite runners have normal flexibility in most joints. But they have a high degree of dynamic flexibility in running-specific movements. For example, during the swing phase of the stride action the hip flexors act as agonists, shortening to pull the thigh forward, while the hamstrings and glutes act as antagonists, relaxing and lengthening to allow the thigh to swing forward easily. In more efficient runners, less tension is held in the hamstrings and glutes during the swing phase, enabling the thigh to swing forward faster and farther with less force application from the hip flexors.

The best method to increase dynamic flexibility is dynamic stretches, which are sometimes also referred to as mobility exercises. Dynamic stretches are movements that mimic the way your muscles and connective tissues actually stretch during running, but with an exaggerated range of motion that increases the cost of holding tension in the antagonists and thus challenges these muscles to “learn” to relax.

I recommend that you do dynamic stretches as a warm-up, particularly before high-intensity runs. Dynamically stretching your muscles before running will gently warm, loosen, and lubricate your muscles, preparing them to perform better in the workout that follows. A second advantage of doing your dynamic stretches as a warm-up—especially in workouts involving faster running—is that it reduces the likelihood of muscle strains. These injuries tend to occur when the muscles are required to contract from a stretched position. Including dynamic stretches in the warm-up allows the muscles to perform these “eccentric contractions” with less strain.

The following dynamic stretching warm-up routine takes only five minutes to complete. Always do it before training at 10K race pace or faster to reduce the likelihood of muscle strains. The long-term benefits you’ll derive from regularly doing these stretches are increased dynamic flexibility and a more economical

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stride.



#### Tilt Walk

From a standing position, take one step forward with the right foot and balance on the forward foot. Keeping a very slight bend in your right knee, tilt your torso forward at the waist until your trunk is parallel to the floor. At the same time, extend your left leg behind you for balance. Return to an upright position and then step forward with the left foot and tilt once more. Continue for 30 seconds.



#### Zombies

Begin in a standing position with both arms extended straight in front of you like a cartoon zombie. Begin walking slowly forward by kicking each leg forward as high as possible, aiming to touch your right toe to your right palm and your left toe to your left palm. Keep your legs as straight as possible and don't let your trunk flex forward. Continue for 20 to 30 seconds.



#### Trunk Rotation

Raise your arms straight out to the sides. Twist your torso as far as you can to the right. Without pausing, reverse direction and twist over to the left. Repeat 10 times.



#### Lunge Walk

Take 10 giant steps forward with each foot, lunging as far forward as you can each time.



#### Side Lunge

From a standing position, take a large step to the right with your right foot and lower yourself into a deep squat. Return immediately to a standing position and lunge to the left. Lunge five times to each side.



#### Forward Leg Swing

Stand on your right foot and swing your left leg backward and forward in an exaggerated kicking motion. Complete 10 swings and repeat with the right leg.



#### Side Leg Swing

Stand facing a wall, lean towards it slightly from the waist, and brace both palms against it. Swing your fully extended right leg left to right in wide arcs between your body and the wall. After completing 10 swings, swing your left leg.



#### Heel Bounce

Assume a modified push-up position, with your legs as close to your hands as you can get them without bending your knees, and your butt in the air. Lift your left foot off the ground, bend your left leg slightly, and rest the top of your left foot against the back of your lower right leg. Lift your right heel as high off the floor as you can. Without pausing, lower your heel back to the floor and “bounce” it off the floor, back into another heel raise. Bounce your right heel 20 times and then repeat with the left leg.

This article is excerpted from *Brain Training for Runners*, by Matt Fitzgerald. Do the right thing and [buy a copy!](#)

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