

# Specific Strength Training for Speed and Efficiency

## Essential Drills For Speed And Efficiency

By Brian Metzler, Published Sep. 13, 2012, Photos by Mark Doolittle Photography

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*Do these nine drills consistently to help improve your running form.*

If you want to improve as a runner, you've got to do more than just run. You've got to make time to do the extra stuff, too. Taking 20 minutes to do a handful of drills, such as those demonstrated here by 2012 Australian Olympic marathoner Benita Willis, can dramatically improve your running form and economy (or the ability to run fast efficiently) and increase your stride cadence and racing speed.

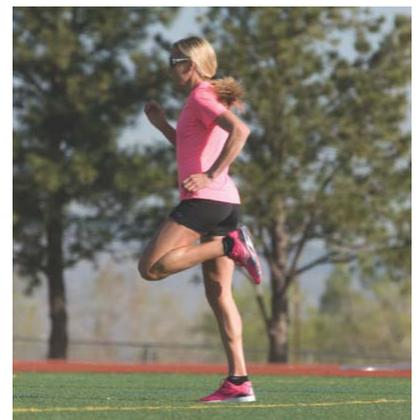
Each of the drills highlights one or more aspects of good running form and accentuates them through repetitive motion, which trains the body to become comfortable with that movement so it can be inserted into your typical running mechanics. These drills can serve as a dynamic warmup routine after a 10-minute easy jog before your regularly scheduled run or workout, or they can be completed after a run to reinstate the notion of running with good form while fatigued.

Try to do these drills three to four times per week on an ongoing basis, focusing on the precise movements outlined below. There are numerous other drills you can incorporate into your routine, including acceleration strides, but the most important factor is doing them consistently.

### Butt Kicks

**Why:** Butt kicks engage the hamstrings and accentuate the recovery portion of the running gait and improve leg turnover cadence.

**How:** Run in place with your thighs more or less locked in a neutral position and try to kick yourself in the glute with your heel on each stride. Focus on keeping the rest of your body still and simply flicking your lower leg backward. If you're not making contact, you need to improve your dynamic range of motion. Do two or four reps of 15 kicks with each leg.



## High Knees

**Why:** The high knees drill accentuates knee lift and glutes and hamstring power, which are keys to running fast and efficiently, as well as powerful and efficient leg drive.

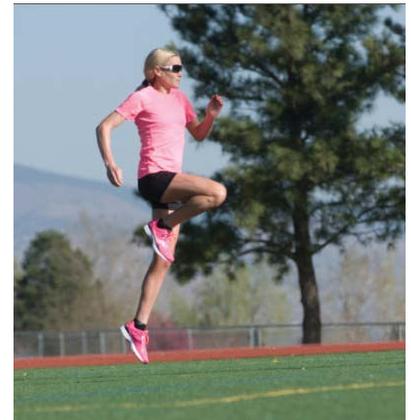
**How:** Taking short steps with a very quick cadence, alternate thrusting knees upward until your thigh breaks a plane parallel to the ground. Focus on soft, flat footstrikes near the ball of your foot while using your core to lower your leg down slowly instead of letting it crash to the ground. Do two to four reps of 15 lifts on each knee.



## Bounding

**Why:** Bounding increases foot, calf and hamstring muscle power and develops single-leg stance stability necessary to maintain fluid running form while fatigued.

**How:** On a flat or very slightly downhill slope, alternate thrusting into the air off one leg in an exaggerated skipping motion. The focus should be on a powerful leap into the air and a quick (but not super fast) cadence. Your arm motion should be synced to the opposite leg's action, holding steady for the brief moment while you're off the ground. Do three to four reps of 10 leaps on each leg.



## Grapevines

**Why:** This drill loosens hip flexors and glutes and increases hip and leg and gluteal mobility while also using lateral strength required to run with good form.

**How:** Standing upright with your head and torso facing forward, move laterally in one direction by placing your trailing leg in front of the lead leg. Then move the lead leg in that same lateral direction and place the trailing leg in front of the lead leg. Maintain a fluid motion with your arms rotating in the opposite direction from the legs. Do two to four 50-meter reps to the left and right, facing the same direction for each lateral movement.



## Slow Skipping

**Why:** This drill helps develop calf and foot strength needed during the toe-off phase of the gait cycle while also stimulating neuromuscular timing for running with high cadence. It also accentuates the high-knee action of the lifted leg during a running stride.

**How:** Skip with a moderate leap off of one foot and return to the ground and immediately leap off the other foot, maintaining a compact arm swing as if you were running. This slow-action skipping drill should have a staccato rhythm. Do two or four 50-meter reps.



## Lateral Bounding

**Why:** This drill develops lateral strength and agility necessary to stabilize the body and maintain single-leg balance during forward running motion. Specifically, this drill works the glutes, hip flexors, tensors, abductors and psoas muscles in ways that are otherwise neglected in forward running.

**How:** With an upright torso and level head, move laterally in one direction by alternately bounding with your legs spread and your legs together. You'll probably need to swing your arms overhead in an opposite pattern to maintain balance. Do two to four 50-meter reps to the left and right, facing the same direction for each lateral movement.



## Hamstring Extensions

**Why:** This drill increases mobility of the hamstring and gluteal muscle groups and enhances forward hip extension necessary for running fast with efficient form.

**How:** With an upright posture and straight legs, alternately flick one leg forward while reaching with the opposite hand to lightly tap the extended foot. Focus on form, not speed, as this will wind up being a variation of a slow-moving skipping drill. Do two to four reps of 10 extensions on each leg.



## Straight-Leg Shuffle

**Why:** Also known as low-rise bounding or paw backs, this drill helps stimulate neuromuscular timing for quick-cadence running, while also reinforcing a flat or midfoot footstrike. Combined, those stride components can greatly shorten ground contact time and eliminate the counterproductive braking associated with a heel-striking gait.

**How:** With an upright torso, straight legs, dorsiflexed ankles and toes pointed upward, start bounding forward with low-rising forward leg lunges and a quick cadence. Avoid leaning backward by acting as if you're aggressively pulling the foot backwards as soon as it touches the ground. Do two to four 50-meter reps.



## Running Backwards

**Why:** Running backwards helps strengthen the glutes and upper hamstrings, as well as various core muscles in the abs and lower back.

**How:** Although it will seem awkward at first, try to replicate your forward running motion while moving backward. You'll still be pushing off of your forefoot and swinging your arms, but you'll be lunging backward with your hamstrings and using core muscles to stabilize differently than you're used to while moving forward. Focus on form, not on speed. Do two or four reps of 50 to 100 meters.



# Get Buns Of Steel

on 2 November 2011 www.runnersworld.co.za

The gluteal (buttocks) muscles are commonly left out of runners' strength programmes. When we run, the glutes hold our pelvis level and steady, extend our hips, propel us forward and keep our legs, pelvis, and torso aligned. So when our glutes are faulty, our entire kinetic chain gets disrupted. Studies link glute weakness to Achilles tendonitis, shinsplints, runner's knee, and iliotibial band syndrome.

Many injured runners come to physical therapy with strong abdominals and backs but weak glutes. Part of the problem is that glutes aren't as active as other running muscles during routine activities, which can make your hamstrings, quadriceps and calves disproportionately stronger.

Another issue is that most strength-training routines don't isolate the glutes. If an exercise requires several muscles to perform the movement, the majority of the work will be done by the strongest of those muscles. Also, tight muscles, specifically the hip flexors, can inhibit the glutes and prevent their muscle fibres from firing.

Here's how to see where you stand, plus exercises that will strengthen your neglected glutes – and give you a coveted runner's butt.

Do two or three sets of 12 to 15 reps twice a week.

### SEAT CHECK

**Test your glute strength**  
**SINGLE-LEG STANCE TEST**

↵ Stand with your hands over your head, palms together. Lift your right foot off the ground and balance. Watch the left side of your hips to see if it dips down. If it does, it's a sign of glute weakness. Try it on the other side too. Next, do this: While in the same position, lean to the right of your body, checking to see if your left side dips. Move your hands to the left of your body and see if your right side dips. If your hips dip, it's a sign that your glutes need work. Also try this test after a long or hard run to see how your glutes perform when fatigued.



### LUNGE STRETCH

↵ Tight hip flexors can inhibit the firing of glute muscles. Do this stretch after every run. Step forwards and lower your back knee. Keep your knee over your ankle. Hold for 30 seconds on each side.



### HIP HIKE

↵ Stand sideways on a step, box or bench at least 12cm high with one leg held free of the bench, keeping both hips squared forwards and shoulders level. Keeping your standing leg (the one on the bench) straight (no knee bending!), raise your free hip directly upwards and then drop the leg.



### SINGLE-LEG SQUAT

↵ Stand on your left leg. Lift your right out in front of you. Stand tall (don't round your shoulders) and keep your left knee over your ankle as you lower down into a squat. Your hands can extend out for balance. Push into your heel to come back up and repeat. Start with shallow squats; go deeper as it becomes easier.



### SINGLE-LEG DEADLIFT

↵ Stand on your right leg with your left leg behind you and in the air. Keeping your shoulders back and your back straight, hinge forwards and reach your hands towards the ground. Return to the starting position and repeat. Hold weights or a medicine ball for an added challenge.



### THREE-WAY LEG RAISES

↵ Place a resistance band just above your knees. Separate your feet and bend your knees, lowering down into a slightly crouched position. Balance on your left leg. 1. With slow, controlled motions, move your right leg forwards against the band's resistance, then back to the starting position. 2. Without placing your right foot back on the floor, move it out to the side, then return to the starting position. 3. Move your right foot behind you, then back to the starting position. That's one repetition. Repeat with the left leg.

### SIDE-LYING LEG LIFT

↵ Lie on your side with your legs extended out straight. Rest your lower arm under your head and your top arm on your hip. Lift the top leg up while keeping your hips steady and facing forwards (do not rotate backwards). Lower down and repeat. For an added challenge, wear an ankle weight.

