



Body Work

Tips to keep you running stronger and longer

Run Strong

Exercises to prevent injuries and run more efficiently

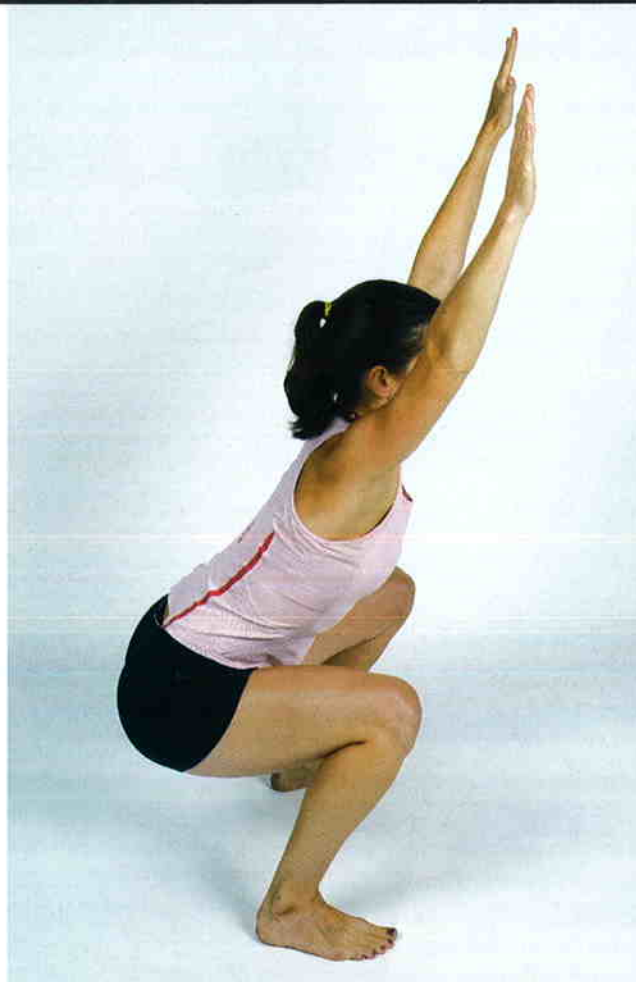
By **Carmen Bott**

IF YOU WATCH A GROUP OF RUNNERS in motion, you'll see big differences in their gaits – so big that it's difficult to define the "ideal" running mechanics and predict who will get injured and who won't. Some athletes with apparently inefficient motor patterns and poor posture get injured quickly, while others (who are luckier) seem to have higher tolerances for the stresses and repeated impacts of running. But everyone has a breaking point, so taking care of small biomechanical imperfections can play a key role in avoiding injuries.

Two important areas to focus on are posture and neuromuscular patterning, both of which can be addressed with strength exercises. Posture is the position in which you hold your body upright against gravity while standing, sitting or lying down. Good posture in running involves training your body to move where the least strain is placed on supporting muscles and ligaments. Think of the wheels on a bicycle: if they're not lined up properly, the bike will zig and zag as it attempts to travel forward. Good posture also reduces joint wearing and ligament stresses, prevents muscle fatigue and strain, avoids back problems, and contributes to a strong-looking finish.

The neuromuscular system refers to the communication highway between both the brain and spinal cord and the muscles responsible for producing and controlling movement. Our neuromuscular system is responsible for our coordination, which is the ability of our muscle systems to function together. By training this system, you can facilitate the movement patterns involved in running, without actually enlarging the relevant muscles. (Runners generally don't want bigger muscles, since power-to-weight ratio is a key performance variable.)

Identifying – or, even better, anticipating – neuromuscular imbalances may offer the greatest potential to help endurance athletes avoid injury. The following exercises will improve your posture and allow you to run more fluidly and with less wear and tear on your body.



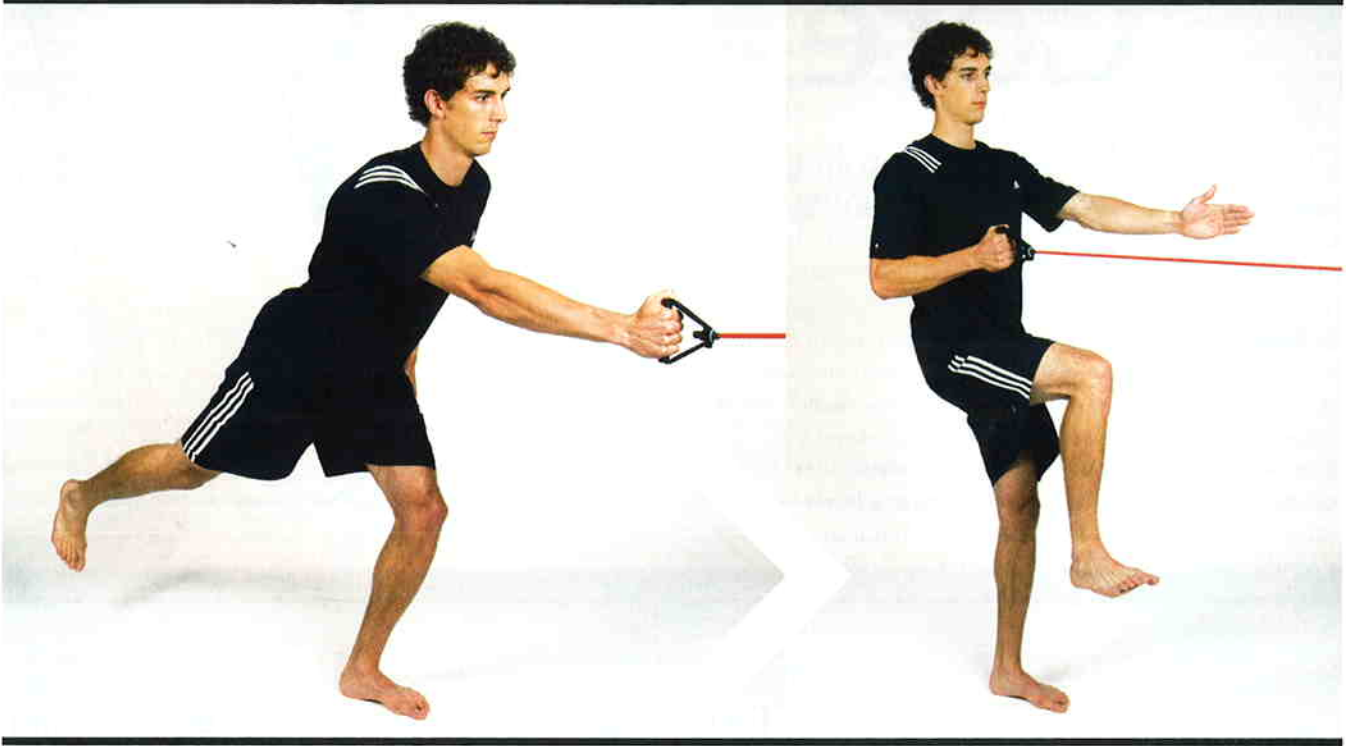
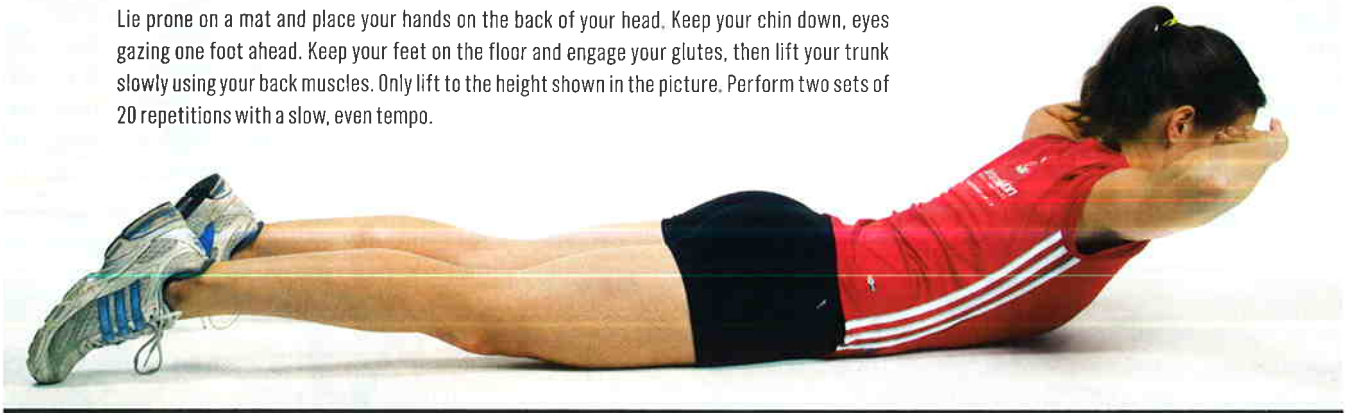
Posture test

Squat down as low as you are comfortable with your arms extended overhead. Your knees should line up over your toes, and your back should be straight (not arched or rounded). Your arms should line up with your ears and be within 15 cm of the sides of your head. If you have trouble getting into this position, it's time to work on your strength through specific postural and patterning exercises. If you can, you're ready for a more advanced prescription.



✓ Prone chest lift


Lie prone on a mat and place your hands on the back of your head. Keep your chin down, eyes gazing one foot ahead. Keep your feet on the floor and engage your glutes, then lift your trunk slowly using your back muscles. Only lift to the height shown in the picture. Perform two sets of 20 repetitions with a slow, even tempo.

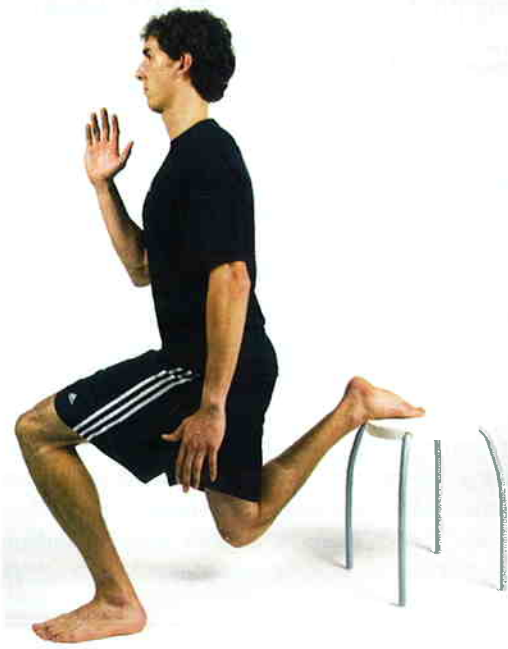


⊕ Single leg squat to cable row finish

Stand on one foot and grasp tubing or a cable in the opposite hand. Allow your free leg to reach back behind you, but keep it close to the floor or your back may arch. Also, don't allow your trail leg to disappear behind the leg you're standing on – keep your feet shoulder-width apart at all times. As you reach extension with your back leg, allow your arm to also reach away from you, keeping tension on the cable. Do not allow your arm to come out of the socket; keep your shoulder away from your earlobe. Once you have fully extended, drive the support foot down into the floor and stand rowing the cable by bending the elbow and contracting your upper back muscles. Finish with a tall posture, knee up and elbow close to your side. Perform three sets of eight repetitions per side with a slow, even tempo and moderate load.

⊖ Single leg squat with rear foot support

Place your bare foot on a bench about 30 cm high. Facing away from the bench, put your opposite foot three foot-lengths away from the bench, keeping your feet shoulder-width apart. Bend at the front knee and hip, and "pull" yourself toward the ground while keeping your front knee tracking over your toes. Also, keep your back straight, shoulders back and chest lifted. Don't let your body slump forward or turn sideways – stay square. Perform three sets of 10 repetitions per leg using your body-weight to 90 degrees of knee flexion. As you progress, you can add load with dumbbells. 



Carmen Bott is a Vancouver-based strength and conditioning specialist, and the owner of Human Motion (www.humanmotion.ca).