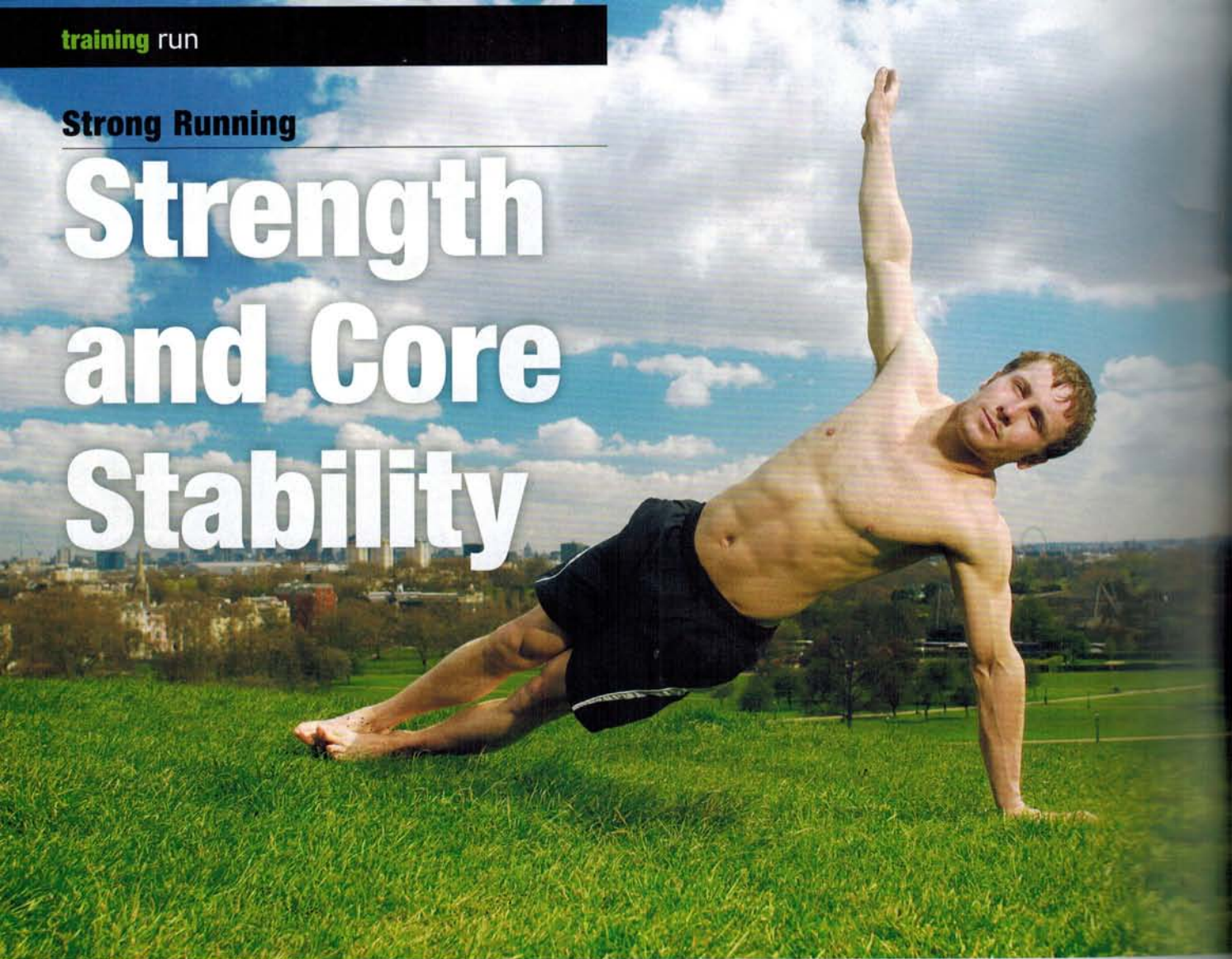


Strong Running

# Strength and Core Stability



by Dr. Jenn Turner

**D**o endurance athletes need strength? This is a debate quite popular among coaches and athletes alike. One of the major benefits to having a strength program, if you are an endurance athlete, is the significant effect it can have on injury prevention. If properly designed, a strength program can also help with better performance, increased strength and power and better efficiency.

Swimming, biking and running are repetitive movements done over and over using the same muscle groups. It is ideal to use resistance to create symmetry throughout the body and reduce overuse injury by creating balance. Most endurance athletes feel that strength should be implemented only in the off-season and, for power and strength, this is mostly true. However, strength and conditioning experts believe that endurance athletes need to be in the gym all year round, on a once-a-week basis while in season. At this time, most athletes tend to focus on “core” strength.

## Core Stability Muscles

- Transverse and rectus abdominus
- Internal and external obliques
- Multifidi and paraspinal muscles
- Diaphragm

Core seems to be a training trend these days, and it's a trend that seems to be sticking. No matter what you call it, core or spinal/lumbar/pelvic stability, this group of muscles are very important in the stability of the pelvis and spine, which is where movement of the upper and lower limbs is generated. A lack of core stability can cause excessive body movement and a breakdown of form, which wastes energy. Head and neck movement, rounded shoulders, excessive arm swing, pelvic dropping and an increased curve in the low back while running are all signs of energy loss. This energy loss is not only detrimental for speed and increases fatigue, but certain muscle groups/tendons/ligaments are working overtime, which can lead to breakdown and injury of these tissues.

Some spine stability experts recommend a technique called abdominal bracing. This entails activating all of the muscles that

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surround the spine simultaneously. The purpose is to teach the body how to prepare for stabilization. Bracing should be performed during all core and whole-body strength/stability training. To practice bracing, pretend you're going to be punched in the stomach. This should stimulate all the muscles to tighten around the spine. However, you must be able to do this without holding your breath. This helps to ensure that the technique can be done during exercise. Eventually, this action will be automatic as the pattern is engrained in the body's neuromuscular system.

Traditional abdominal exercises are not the best ones to accomplish the task of spinal stability. Research has shown that sit-ups and back extensions not only target singular muscles in the torso, but they actually are damaging to the discs in the spine. Exercises that replicate the activities of swimming, biking and running, while focusing on activating some of these core muscles, are a better option. Try adding these exercises below to enhance a strengthening session and improve that energy transfer to be faster, more efficient and injury free. **T**

**Stir the Pot**

Place your elbows on an exercise ball with your feet on the floor. Move your elbows in a circle while maintaining the plank. Alternate directions as you "stir the pot" using full circles. Perform 3 sets of 30 seconds.

**Side Wall Plank**

Go into a side plank next to a wall. Place your top arm in line with your bottom arm and lift your top leg with your toes pointed up to form a star. Tuck your chin slightly so your head, glutes and back of your shoes touch the wall. Hold for 10 seconds and perform 6 repetitions/side for a total of 60 seconds per side. Do 3 sets.

**Plank Row**

In a traditional plank position, grip dumbbells in your hands. Lift one dumbbell by retracting the scapula (shoulder blade) and bending the elbow. Be sure to maintain even pressure on both legs as one leg will want to counter balance. Slowly lower the dumbbell and repeat using the opposite hand.

**Pelvic Bridge**

Perform the bracing technique and squeeze the gluteals, then push your hips up and hold them level and high. Hold for 10 to 15 sec. Repeat 10 times. If this is too easy, place the feet on a ball, or do a single-leg progression.

**Band Walk**

Use a loop of theraband and tie it around the thighs just above the knees. While maintaining a neutral spine and using the bracing technique, step to the side in a half-squat position. Follow with the trail leg without letting the band snap your leg in. Do ten steps in one direction, then switch.

*Dr. Jenn Turner is a chiropractor that works with many different types of athletes in her clinic, Moveo Sport & Rehabilitation centre. She is also the head chiropractor for Cycling Canada and will be heading to the Olympics with the Road, Track and BMX athletes this summer.*

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