

HOW STRONG IS YOUR STRIDE?

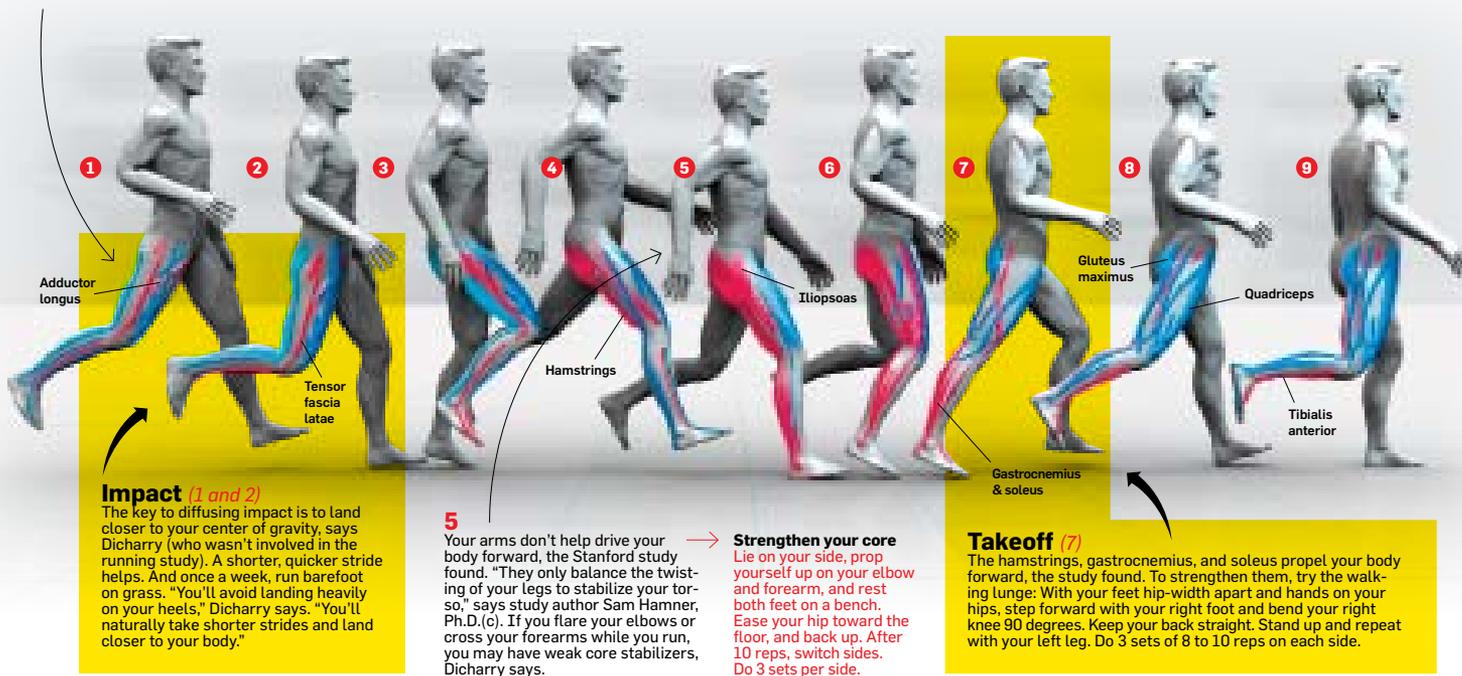
Stanford University researchers analyzed a single stride sequence to determine which muscles activate and when. We asked a trainer how to strengthen your weak spots to run your best.

1 Most runners don't extend their hips properly because their legs don't stretch back enough, says Jay Dicharry, C.S.C.S., director of the Speed Clinic at the University of Virginia. They compensate by landing in front of their body, adding to the impact.

→ **Stretch your hip flexors**
After a run, kneel on one knee, keeping your back straight. Tilt your pelvis backward and hold for 60 seconds. Repeat three times on each side.

2&3 Compressive force peaks during the mid-stance phase of your gait, while you're on one leg. "Stabilizing muscles [in your core and glutes] have to keep you from rotating or leaning too much so you don't increase stress on the body's tissues," says Dicharry. These muscles are often underdeveloped in runners.

→ **Strengthen your stabilizers**
Stand on one leg for 30 seconds, 10 times per leg, each day. An ideal time: while brushing your teeth.



Impact (1 and 2)
The key to diffusing impact is to land closer to your center of gravity, says Dicharry (who wasn't involved in the running study). A shorter, quicker stride helps. And once a week, run barefoot on grass. "You'll avoid landing heavily on your heels," Dicharry says. "You'll naturally take shorter strides and land closer to your body."

5 Your arms don't help drive your body forward, the Stanford study found. "They only balance the twisting of your legs to stabilize your torso," says study author Sam Hamner, Ph.D.(c). If you flare your elbows or cross your forearms while you run, you may have weak core stabilizers, Dicharry says.

→ **Strengthen your core**
Lie on your side, prop yourself up on your elbow and forearm, and rest both feet on a bench. Ease your hip toward the floor, and back up. After 10 reps, switch sides. Do 3 sets per side.

Takeoff (7)
The hamstrings, gastrocnemius, and soleus propel your body forward, the study found. To strengthen them, try the walking lunge: With your feet hip-width apart and hands on your hips, step forward with your right foot and bend your right knee 90 degrees. Keep your back straight. Stand up and repeat with your left leg. Do 3 sets of 8 to 10 reps on each side.

STINE LAB / Runner illustrations, based on images in a study from The Journal of Biomechanics; Kallista Images / MRSA cells

60

NUMBER OF DAYS SUPERBACTERIA MRSA CAN SURVIVE ON ARTIFICIAL TURF WHEN MUCIN (A COMPONENT OF SNOT AND SALIVA) IS PRESENT

Source: *Medicine & Science in Sports & Exercise*



A RACE TOO FAR?

Guys who run marathons year after year must be superfit, right? Maybe: In a Minneapolis Heart Institute study, **men who'd completed marathons for 25 consecutive years showed surprising levels of arterial plaque**—62 percent more than sedentary men. Study author Jonathan Schwartz, M.D., says the physical stress of training and races, including elevated heart rate and blood pressure, can expose tissue to a damaging acidic environment. "This may be another example of 'Everything in moderation,'" he says.

ON OUR RADAR

Wetter water

High-pH alkali water hydrates you better than bottled water does, a new Montana State University study found. People who drank mineral-enhanced H₂O instead of plain water for 2 weeks lost less fluid as urine and were more hydrated than plain-water drinkers. Study author Daniel Heil, Ph.D., says the minerals and pH-spiking compounds may help your cardiovascular system retain more water. Try Akali glacier water (akaliwater.com), the type used in the study.

PERFECT TIME TO START

If you're starting a workout program, here's some encouragement for the new year. **Sedentary men who exercise just once a week can make sharp fitness gains**, a recent study from Thailand reveals. The men performed a moderate-intensity cardio workout once a week for an hour. After 12 weeks, their average resting heart rate was down 11 percent, and their VO₂ max—a measure of aerobic capacity—was up 24 percent. Get started: Schedule one workout on the same day each week, and make it a can't-miss appointment.