

Dirt Secrets -March 2007

Scott Jurek reveals performance-enhancing cross-training and diet strategies

By George Beinhorn

In his recent book, *Bowerman and the Men of Oregon*, Kenny Moore describes a conversation between coaching legend Bill Bowerman and two-time Olympic gold medalist and mile and 800-meter world-record holder Sebastian Coe. Bowerman was quite surprised when Coe revealed that he trained just 40 to 50 miles per week. Later, Coe mentioned, almost in passing, that he also regularly put in 10 to 12 hours per week at the gym, working on core strength, flexibility and speed with weights, plyometrics and range-of-motion drills.

If your schedule prevents you from running 120 miles per week, or if you lack the V02 Max of an Olympian, supplementing your training with appropriate exercises can help you accomplish your trail-running goals. That isn't just our opinion.

In this interview, seven-time Western States 100-Mile Endurance Run winner and course-record holder, Scott Jurek, suggests cross-training strategies that will help you make the most of your time and talents.

Q: How should people prepare their bodies for the special demands of trail running, especially in terms of injury avoidance and punishing downhill?

Scott Jurek: I find that many runners assume, "I run, therefore I have strong legs." But that's a big misconception.

The biggest issue, especially for downhill running, is preparing your leg muscles, particularly the quadriceps, hamstrings and glute muscles, to work eccentrically, which means contracting while lengthening.

By contrast, in concentric contraction—for example, working your quads going uphill—you contract the muscle while shortening it. Of course, the best way to strength train for downhills, in terms of specificity, would be to run downhill. You don't have to run miles-long downhills typical of the Western States course; just find the longest hill in your area and run down it. Folks who live in flatter terrain can prepare for long mountainous downhills by doing repeats, going up and down short hills. And you don't need to practice on trails—a logging road works fine, for example.

Downhill training can also be done on a treadmill, by inclining the back of the treadmill and creating a downgrade. Don't try this if you're new to the treadmill. Also, you will need very strong supports to elevate the treadmill (if at a gym, the permission of the owner/manager).

Q: What about downhill-running tactics?

SJ: The key component is being aggressive, which comes with practice and getting comfortable with going fast with gravity. If you never train to attack the downhills, or learn to let your body "fall" down a hill, you can't expect to learn it for the first time in a race.

So play with speed. Lots of runners say, "I try to keep my heart rate high on the downhills." But you're not stressing the cardiovascular system on downhills; you're actually recovering, and that's the beauty of trails. The thing you're really trying to stress is the skeletal muscles, for the eccentric contractions.

Q: **How about technique, especially on very steep downhills?**

SJ: **Do not lean back! Keep a high stride rate, 85 to 90 per minute, and let the legs spin with quick steps, minimizing time on the ground. Quick short strides allow you to react to technical, steep terrain. Scan the trail 10 to 15 feet ahead, and "pick a line." Also, lower your center of gravity by increasing knee bend and slightly flexing the hips. Arms can go out to side for more balance. Stay stable and strong in your core. As your comfort level grows, you can lengthen your stride with more confidence.**

Q: How do you recommend reaching maximum speed safely on moderate downhills?

SJ: Again, employ a high stride rate, and let your body "fall" without excessive braking, i.e. landing too far

out in front with the legs. Let the foot land under the body, but the torso should fall forward with the core/pelvis in neutral and stable position--not leaning from waist. Make sure arm swing follows stride length and rate. Your arms should be a good source of propulsion on moderate downhill.

Q: **What leg-strengthening exercises do you recommend?**

SJ: I'm a big fan of doing things one-legged, because that's how we run--we're constantly on one leg. Yet it's surprising how many people go to the gym and do their squats and leg presses two-legged.

Lunges are great, too, even though you're supporting yourself on your back leg. It takes more time to work one leg at a time, but it's worth it. Single-legged workouts also reveal any imbalances between left and right, and that can be a huge element in terms of injury prevention, as well as performance.

If you're preparing for long downhill, I suggest periodizing your strength training: doing some strength-endurance exercises (high reps, low load) for a few weeks, then some strength-power (medium reps, medium loads), followed by high-resistance, low repetitions for pure strength.

Runners who want to prepare for long downhill but don't have access to that type of terrain can do cross-training exercises with high repetitions--for example, 30, 40 or 50 reps of lunges or one-legged mini-squats. They are time consuming and can be boring, but you have to reach a fatigue point.

Q: Gym instructors often recommend 90-degree squats. Is that the same as a mini-squat?

SJ: With a one-legged mini-squat, you're only bending to about 45 degrees. The deepest I would usually have somebody go is 60 degrees. You're trying to mimic the range of motion that happens when you run. When you're running, you never really bend deeper than 60 degrees, except possibly when you're climbing a steep hill.

Q: What do you think of full squats, i.e., going all the way down?

SJ: I recommend avoiding them. Even if somebody's really watching their technique and they're comfortable with squats, functionally, there's really no reason to go that far down.

Q: **What about core strengthening?**

SJ: Having a strong core reinforces your lower extremities' ability to stabilize your body. When you build a house, you want a solid foundation. If you have weak core musculature--which includes the glute, hip, abdominal, and back muscles--it's like building a house on a swamp.

The East African and Mexican runners spend a lot of time on dirt, which gets you more fatigued than roads. It's not a strength workout, but you're constantly making adjustments for the terrain.

Q: **What core-strengthening exercises do you recommend?**

SJ: Sit-ups and crunches build core strength, but I encourage runners to incorporate exercises like Pilates [a method of exercise that emphasizes proper alignment, concentration, breathing and flowing movement]. You aren't crunching, you're not bending or moving your low back, but you're staying stable while you're moving your arms and legs. Bridging or plank work are good, where you're on your elbows, holding yourself suspended or using side planks. Working with a Swiss gym ball adds a dynamic component to further engage stabilizing muscle groups in the core.

I'm also a proponent of the abdominal-pelvic stabilization exercises, because postural muscles fire a lot when you're on trails, whether you're going up or down. You aren't bending forward or doing extensions, so it makes no sense from a functional standpoint to load up your back or abdominal area with weights and do crunches, for example. What I tell my clients is that you've got to ask what are the sport's specific demands.

Q: What do you think of plyometrics for a hill runner?

SJ: Plyometrics are great, but for folks who don't have a strength-training base, they can be dangerous. I encourage light plyometric-type activities like jumping rope, skipping or hopping. For hardcore plyometrics like box jumps, you really need a trainer or a physical therapist who'll help you design a good program. You want to have a good level of strength before you go into plyometrics at that level. Intense plyometrics really

load the joints and muscles.

Runners tend to be really weak. [Laughs] They think they're strong, and if they do lots of trail running, up and down hills, they're probably better off than your average road runner who isn't doing any strength training. As you age, you lose strength, starting at 25 or 30. Muscles will lose strength unless we're using them, or stressing them through resistance exercises.

Q: How about yoga for trail runners?

SJ: I'm a huge fan of yoga. But sometimes I'll recommend Pilates first, so that people can become aware of their body position. I've seen athletes go to yoga class and push themselves too hard. Athletes have to drop the ego when they start doing yoga. Unless you have natural flexibility and/or you're being closely monitored by an instructor, you may find the poses difficult and frustrating.

Yoga gets people to slow down and develop body awareness. Where am I tight? Where am I strong? Yoga can also be a great core-strengthening workout, because you're constantly aware of what your core is doing in space. But there's just so much happening in a yoga posture that the average runner needs to start with a basic-level class.

Q: Do you think yoga helps a person relax while they're running?

SJ: Definitely. The benefits of yoga depend on the style. Some people teach a very vigorous type of yoga, and that may or may not help you relax. The slower, gentle types of yoga are what I usually recommend for runners, because they're getting plenty of strengthening if they're working in the gym, or they're running hills. I think it's best to "think slower," so you can focus on body awareness, breathing and form. That can definitely help you be more relaxed when you're running.

Q: Do you work with runners on posture?

SJ: Definitely. Runners will often assume, "We run the way we learned as kids, so we're stuck with that technique." While running isn't as technical as golf or skiing, paying attention to posture, body alignment and movement and consulting with a running biomechanics and technique expert can improve your efficiency.

Yoga helps, because it improves body awareness. People have been running a certain way for years, and they don't realize that maybe they're bending forward from the waist, or their head is tilted forward, or they're tight in their upper body.

Q: It's widely known that you follow a vegan diet. Can a person become a better trail runner by changing what they eat?

SJ: You'll find people who have great diets and run pretty decently, and people who have very poor diets and run very fast.

In terms of performance, diet may not help you on race day, but a healthy diet improves the body's ability to recover and repair. When you're young, you can bounce back quickly, but individuals who've paid attention to their diet for many years usually run and recover better later in life.

Q: Are there specific foods that you find helpful for recovery?

SJ: I like to say "get-down, wholesome, whole food." Fruit, vegetables, whole grains, legumes, beans. Dense protein sources like tempeh and tofu are great. But I try to advise individuals, as I do with my own diet, to incorporate as many fresh whole, unprocessed foods as possible, because they have the most intact vitamins and minerals. They are the building blocks.

Another important dietary consideration for runners is glycogen replenishment, which is best accomplished by ingesting carbohydrates 20 to 30 minutes after a workout. And we now know from research that some protein, and maybe a little fat, helps carbohydrate replenish the glycogen stores.

I also like to incorporate things like barley-grass juice and wheat-grass juice. These and other "super foods" like chlorella, spirulina, etc. provide condensed vitamin and mineral content that's minimally processed.

Q: No white powders in a can? No "race drinks" from a chemical factory?

SJ: I'm not into white powders. I use a drink from Clif that's probably one of the cleanest electrolyte drinks, in terms of not having additives. It's just brown-rice syrup that's been powderized, plus a little electrolyte.

Q: Do you eat solid foods during races?

SJ: I do.

Q: On your website, you mention eating solid foods such as quinoa, aduki beans and pita bread during races.

SJ: Yeah, but I do different things also. I'll sometimes eat bean-and-rice burritos, potatoes and bananas. It depends on the timing during the race, as well as other factors. At Badwater [a grueling 135-mile race in Death Valley] this year, I had some potatoes and bananas, but I didn't do a whole lot of solid food, probably because the heat was so intense.

Solid foods take a lot of water to get down, and when it's that hot I stick to gels and drinks, with some fruit here and there. I had some soy-protein drink, but mostly I ate simple foods.

Heeding Jurek's sound advice, even flatlanders can rise to ultra greatness (or at least finishes). Consider Matt Mahoney: the native Floridian has finished all of the major trail 100-milers, including multiple finishes at Colorado's Hardrock, the most difficult trail ultra of all, with more than 33,000 feet of elevation change. Yet the highest hill Matt trains on is a 50-foot-high freeway overpass. His secret? Regular weight work emphasizing the quads.

Former Western States 100 director Norm Klein believes that 85 percent of the race's dropouts are caused by the relentless, quad-trashing downhills. (The WS 100 course features 23,000 feet of descent, and "only" 18,000 feet of climbing.) No question, the hills can kill you. Probably the most time-efficient way to transform your legs into trail tigers is by following Scott Jurek's advice: **spend time in the gym or cross training, especially if you aren't running high mileage over mountainous terrain.**

In addition to his formidable running accomplishments, Scott Jurek is a licensed physical therapist and personal trainer advising clients worldwide (www.scottjurek.com).

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