



12 Surprising Things About Economical Running by Jae Gruenke, GCFP

Surprising Thing #3: Forget pelvic stability and go for pelvic coordination.

Did you watch the London marathon last Sunday? If you did, you saw what a properly mobile pelvis coordinated well with the legs and upper body looks like. Liliya Shobukhova, who won the women's race, has a fantastic balance of movement between her upper and lower body and knows how to allow her pelvis to shift for a smooth gait with minimal bouncing. You can see it quite clearly on this [two-minute highlights video](#).

Now before I go any farther, I must tell you that I'm not taking her as my example so I can argue that "she won, so what she's doing must be right." Thanks very much to coach Neil Cook of the Asphalt Green Triathlon Club for pointing out that I seemed to be making that argument by using clips of Usain Bolt and Emil Zatopek in the last article. Economical running form is just one of a constellation of factors that interact to deliver a runner to the finish line first, and many runners win without much advantage in this department. Paula Radcliffe is a classic example. When I write, I like to give examples of runners doing the things I'm talking about so you can picture them. So when I've seen a race where a runner exemplifies the movement, it's easiest just to search for that pre-existing video and give you the link. That's why my examples skew to the world-class. Shobukhova is a perfect exemplar for this article, and she's also fresh in my mind.

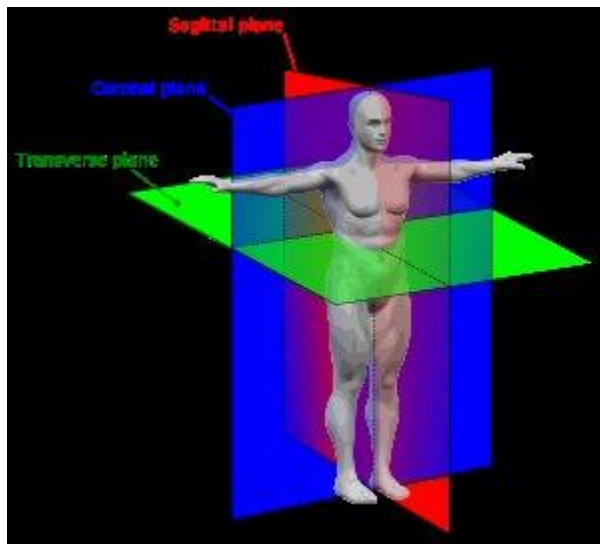
A lot of physical therapists, Pilates teachers, and writers for *Runners' World* tell you not to do what Shobukhova was doing. Their watchword is "pelvic stability," and as an injured runner in a PT clinic you'll almost certainly be given exercises designed to help you learn how to hold your pelvis still and to make you strong enough to do it. They won't completely work because it's impossible to run without moving your pelvis, due to the fact (as I've pointed out in every article in this series) that we have one leg on one side of the body and one on the other and in order to get from one to the other there needs to be a spiraling action throughout the trunk. This involves the pelvis.

I did try once, inadvertently, to run with my pelvis virtually immobilized – I was wearing a frame backpack fastened tightly across my hips, and I crossed a NYC street against the light. It was really stupid. I saw a horde of cars rushing towards me and I tried to break into a run, and the result was kind of like images of astronauts running on the moon: boing! boing! but with a stride length of about two feet. I felt my hipbones (anterior

superior iliac crests to be specific) straining against the frame in desperate rhythmic alternation, but the frame wouldn't give. Somehow I avoided being killed; the cars must have put on their brakes. Never have I worked so hard to cover so little ground.

So why do so many professionals insist that pelvic stabilization is the way to go? I'm not sure, but my latest theory is that it's actually an over-correction of the problem of inflexible hip joints. Say, for example, you have tight hamstrings. This may prevent your leg from being able to swing forward far enough, so when the hamstring runs out of slack (so to speak) but the leg keeps going, the pelvis will just get tugged along and be in the wrong position to take your weight when you land on that leg, and the result may be injury.

The cure for this isn't to hold your pelvis still, it's to improve your mobility and learn the right rhythm of motion for both your pelvis and your legs so they're each doing what they're supposed to do. The result is a pelvis that participates fully in the spiraling action of the trunk. This has two components.



The first component is movement in the transverse plane, bringing one hip forward and then the other, harnessing the abdominal obliques to *generate* power to help drive the legs rather than forcing them to fight the legs by trying to immobilize the pelvis – a terrible waste of effort.

When the pelvis moves properly in the transverse plane, running gets smoother and you handle impact better, harnessing it with your elastic tissues rather than receiving a jolt through your bones. You bounce up and down less because you're able to get more forward movement in each stride without overstriding -- the extra stride

length comes from your hip moving rather than your foot moving out in front of your hip. This means you don't need to go up in the air as much. You also harness the power of many more hip muscles to run; if the pelvis barely turns, you just flex and extend your hip joints, but if the pelvis does turn properly, the hip movements become flex/abduct/externally rotate the forward-swinging leg and extend/adduct/internally rotate the stance/toe off leg, which allows more muscle groups to contribute, increasing your power and helping you run longer before you fatigue.

The second component is movement of the pelvis in the coronal (a.k.a. frontal) plane, with one hip rising and helping the swing leg move forwards, and the other driving downwards, creating thrust into the ground. This adds a great deal of force to your toe-off without stiffening the back leg, so the leg can remain supple and swing forward rapidly for a quick turnover. I believe it also shortens the ground contact time for this reason, and is essential for moving your weight precisely where it needs to be, side to side, at each moment in your gait cycle.

So to summarize, moving your pelvis in the transverse plane makes your running smooth and fluid, reduces vertical oscillation, and increases stride length. Moving your pelvis in the coronal plane makes your running snappy and quick, speeds your turnover, and creates short, explosive ground contact.

Now take a look again at the women's race highlights in London marathon. You'll see Shobukhova and Mergia side by side, and you can see Shobukhova bounces less than Mergia. Because of their clothes you can see Shobukhova's pelvis better than Mergia's, but if you look just at their waistbands you'll see Shobukhova's tip side to side like a seesaw, and you won't see more than the barest hint of that on Mergia. You can sense Mergia hitting the ground hard with every footfall, whereas Shobukhova seems almost to glide.

What is particularly spectacular about Shobukhova's running here is the spiraling action in the middle of her torso. She's turning her upper body, but not so much that it overpowers her pelvis and prevents it from moving the opposite direction – likely Mergia's problem. In fact, as she approaches the finish line you'll see the epitome of healthy, economical running: a figure-eight motion in pelvis and shoulders that involves movement in both planes, turning and sidebending. Upper body, lower body, and legs are perfectly balanced in their movement relative to each other.

So with all of this in mind, I propose that if you want to run more economically, you work not on pelvic stability but on what I like to call "pelvic coordination." Allow your pelvis to move – not to dominate, but to coordinate with your legs to allow them proper range of motion and a quick and powerful toe-off. And also to coordinate with your upper body to generate your running from the center point in your body -- the middle of your trunk -- so that your torso muscles and hip muscles collaborate for fast, fluid, and easy running.

One last word on Shobukhova: whenever I look at runners, I see what's working well for them and then what I wish they also could do. I've told you here what works so well for Shobukhova. What I wish for her is that she could allow her neck also to be mobile, which would permit her to lean forward more and diminish her tendency to overstride. Then she'd be even better. I'll explain more about how that works in a future article. Maybe it seems a little outrageous to wish for more for a runner already doing so well. But even more than winning, what I really love to see is each runner fulfilling their potential.

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