Hill Training from Impact Magazine

What Goes Up Must Come Down
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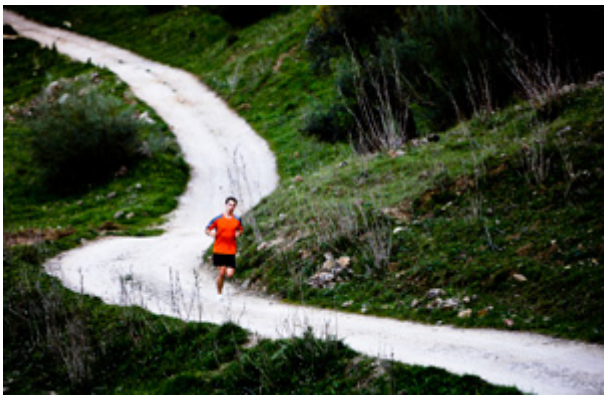
Hill training adds strength and speed to running. But don't forget the downhills.

You would not be alone if you approach hill training as a strictly uphill endeavour. But you also might find you feel a lot more beat up by a hilly course than your training might predict. Vancouver sports chiropractor Wilbour Kelsick offers a different perspective. Hill running is as much about the up as it is about the down, says Kelsick, who founded MaxFit Movement Institute and has worked with Canadian national and Olympic teams as a member of the official medical staff. Find out why he says most marathon failures are from a lack of downhill training. And, yes, gravity is your friend, if you prepare your legs.



What is hill training?

When we talk about hill training, the issue is that people think about running uphill. To better meet the needs of runners, we need to cover up- and downhill running.

Why does hill training fall off the table for many runners?

The reason people feel negatively about hill running is because it's difficult. The other reason is because it's tough training. Many runners have had a negative experience in which they have crashed in a race, especially on the downhills. A high percentage of marathon failures are from a lack of downhill training. It's a problem not just for recreational runners, but also for elite athletes. The research literature shows a lot of failure is about downhill running.

What are the benefits of hill training that includes downhills?

It really helps you improve your running economy. You'll run much faster and become eccentrically stronger, having more breaking power and capacity.

Why do legs hurt from running downhill?

Going with gravity adds extra forces to your body. You land with more force on your feet, but, if you don't want to fall, you have to brake yourself, which is exactly what causes the soreness in your quads. It doesn't really help that people are blaming the soreness on the downhills because you can train for them. It seems ironic.

- Why do we have this stress when we're running down hills? Isn't it easier?

It may feel easier, but you're not using less energy to go downhill because your anti-gravity muscles are working harder. Eccentric muscle contraction means that, as the muscles are lengthening, they are asked to contract to control speed. This causes micro-damage in the muscles, or tearing in the contractile elements. That's why they are sore for days, which is why taking proper rest in between hill workouts to recover is so important.

What do you need to think about when you're starting to hill run?

You need to start slow when training up or down hills. Always warm up with a run before you do hills. Start training on a soft surface, such as grass or bark mulch or a trail, before moving onto the road. The body is learning to absorb the impact. If you don't take it easy to start, you can develop stress fractures, sore IT bands, tendonopathies. Remember, it takes four to six weeks for your body to adapt. Run hills a few times a week and take the rest in between seriously.

Do different distance goals require different approaches to hill training?

My theory is if you're running short distances, hill repeats are good, but you also need to run down the hill (not just up). For the marathon, you don't need to do hill repeats because they're not as effective as running hills as part of your runs. Instead, include hills like this: go on a 15K run. Partway through, run up an 800 metre hill, run on flats for a kilometre or two, and then run down the hill. The idea is to run hills when your legs are tired. And do the hills in the earlier phases of long distance training - you don't want to be doing them two or three weeks before your event because it's not enough time to recover. Research shows it can take up to three or four weeks to repair the micro-tears in the muscle.

The last word on downhill running?

It's rhythmic. I love downhill running. I've discovered the knack of it.

HILL PROFILES FOR DIFFERENT NEEDS

1. Short hills for sprinters: five to 15 percent grade; 30 seconds to run up.
2. Medium hills for medium distance (800 to 1,500m) runners: three to eight percent grade; 30 to 90 seconds to run up.
3. Long gradual hills for long distance: three to five per cent grade; 90 seconds to three minutes to run up.

Note: A grade below two percent will not produce beneficial results.

WILBOUR KELSICK'S HILL RUNNING TECHNIQUE

Uphill running

1. Lean forward to let gravity help you move up the slope.
2. Use shorter steps. Avoid overstriding as this can put incredible stress on the hamstrings.

Keep your body weight on the balls of your feet. Pull from your hips right over your feet. Load the calf muscle because it acts as a spring when you run. Use the hind foot as the initiator of the footstep. Transfer weight onto the front foot. You're actually going straight up against gravity.

3. The lean is not exaggerated, as this will put strain on your back. Instead, push up with your back foot.
4. Keep your pelvis tucked forward.
5. Get comfortable with your stride.
6. Land lightly on your forefoot and push up with your back foot.
7. Be careful about your movements. For example, pumping your arms vigorously will waste anaerobic energy.

Downhill running

1. It's easy to overstride because you are moving with gravity. Overstriding makes you land harder and with more force, which will wear you out faster. To prevent this, use a shorter stride with increased frequency.
2. Lean forward and go with gravity. Leaning back stresses your back and slows you down.
3. Excessive braking raises your risk of injury.
4. Keep your feet under your body, not reaching out in front of you.
5. Stand tall from your chest with your arms tucked in.
6. Keep your chin slightly down and tucked in so you can watch where you're going.
7. Lower your centre of gravity by bending your knees slightly to absorb the shock.
8. Aim for a cadence of 100 steps/minute.

"What Goes Up Must Come Down" first appeared in the 2010 March/April Running Issue of IMPACT Magazine.