The First 20 Minutes

By Gretchen Reynolds

Interval Training

“You can compress all your exercise into a few minutes a week. This approach improves both health and fitness in a very short time frame but is not for the fainthearted. To employ Dr. Martin Bibala’s HIIT (High-Intensity Interval Training) you can:

1. Warm up with at least three minutes of easy cycling (running, or swimming).
2. Then HIIT it, with intervals consisting of 50 seconds of almost all-out pedaling (running or swimming), equivalent to almost 100 percent of your maximum heart rate. Basically make yourself as uncomfortable as you can stand for a minute.
3. Rest with 75 seconds of low-intensity pedaling (below 40 percent of your maximum heart rate).
4. Repeat the spring-rest interval at least 8 times to start, working up to 12 or more repeats.
5. Pedal (jog or swim) for a few minutes at the sessions end, for a total time commitment during each workout of less than 30 minutes.
6. Aim to complete 3 sessions a week, or an hour and a half (or less) in total. ‘It would take at least five hour of conventional endurance exercise for the same benefits,’ Dr. Gibala says.”

Strength Training

A group of middle-of-the-pack 5K and 10K racers were placed in three groups: those who trained by running only, a group that lifted weights and ran, and a group that used power training in addition to running.

The second group outperformed the first in maximal running speed during a timed sprint and also performed better overall during a treadmill run.

The third group who practiced explosive power training by jumping onto and off of boxes and lifting light free weights over and over at a faster pace than the traditional strength trainers, also outperformed the running-only group on the treadmill, and had a notable kick during the spring testing.

“Strength training and power training, the authors (of the study) concluded, were ‘effective in improving treadmill running performance.’ Multiple other studies have produced similar results. There seem to be few if any downsides to weight training for endurance athletes and many advantages, chiefly that the training seems make people faster. In another representative study of traditional, machine-based weight training involving both the upper body and the legs, a group of experienced runners became physiologically more efficient. They used less oxygen to cover the same mileage as they had before they began resistance work. And their late-stage spring ability soared.”
“Other studies have found particular benefits for endurance athletes, such as runners, from more idiosyncratic explosive-power training, namely plyometrics. With plyometrics, you leap from the ground onto boxes and otherwise overload your muscles using body weight and sudden acceleration and deceleration in space. In a recent study involving competitive male distance runners, half added a weekly session of standard machine-based strength training to their ongoing running training. Another added a once-a-week session of plyometrics. After eight weeks, both groups had improved their running efficiency, but the runners practicing plyometrics had improved more.”

“Resistance exercise ‘amplifies the adaptive signaling response’ in the muscles . . . It also, as other science shows, tunes up an out-of-shape nervous system.”

“Strength training seems to be a key to improving inter-muscles coordination.”

“‘Long before you see’ any added muscle mass from a weight training program ‘you are probably getting neuromuscular improvements.’ The nerves attached to muscle cells begin accepting and sending signals between the muscles and the brain more quickly. The connections between nerves strengthen. The moving body begins to click along more efficiently.”

“‘Weight training does not have to be that complicated.’ Recent studies have shown that people actually gain more strength by listening to their bodies rather than following a formula. Does the lifting feel hard, especially after eight or ten repetitions? Then you’re probably doing enough and should maintain that effort for a while. When lifting that same amount of weight feels easy, you need to do more . . . In general, lifting less weight more times produces greater strength training than the reverse. A study showed that people improved their maximal strength significantly more if they lifted less weight at least ten times than when they lifted more weight six to eight times. The additional repetitions seemed to stimulate greater changes within the muscle cells and the nervous system. Not that you have to use formal weights or weight machines at all. Push-ups, pull-ups, squats, planks, and other exercises that use your body to provide resistance are do-anywhere, do-anytime moves that prompt the same cellular and aesthetic changes as using free weights or machines.

“I would nominated the squat as the single best exercise. It’s simple. It’s convenient. It activates the body’s biggest muscles, those in the buttocks, back and legs.’ And it requires no gym or coach—not even weights. ‘Just fold your arms across your chest, bend your knees, and lower your trunk until your thighs are about parallel with the floor. Do that twenty-five times.’ Add a weighted barbell once the body-weight squats grow easy. ‘It’s a very potent exercise’ for health, fitness and physical performance, and encapsulates everything you could would for from strength training as a whole. ‘It builds power. It allows for progression. It’s not overly complex. And you can do it anywhere.’”

Strategies to Keep Yourself Off of the Injured List

Improve Your Balance

“Dr. Hertel says, ‘All you really need is some space, a table or wall nearby to steady yourself if needed, and a pillow.’ Begin by testing the limits of your equilibrium. If you can stand sturdily on one leg for one
minute, cross your arms over your chest. If even that’s undemanding, close your eyes. Hop. Or attempt all of these exercises on the pillow, so that the surface beneath you is unstable. ‘One of the teak-home exercises we give people is to stand on one leg while brushing your teeth, and to close your eyes if it’s too easy.’ Dr. Hertel says, ‘It may sound ridiculous, but if you do that for two or three minutes a day, you’re working your balance really well.’”

**Strengthen Your Knees**

Concentrate on exercises that strengthen the quadriceps (leg extensions) and the hip stabilizers (possible exercises listed below).

**Front Step-Ups** – Place one foot on the first step of a staircase or low box and stand straight up, keeping your weight on your supporting leg. Lower yourself back down, but don’t shift your weight; just touch your heel to the floor. To make the exercise harder raise your knee toward your chest while lifting your arms a position parallel to the floor. Repeat with the other leg. Try to complete five repetitions on each leg to start, increasing the number of repetitions as the exercise becomes easy.

**Wall Squats** – Stand with your back against a wall, with knees slightly flexed, feet in front of you. Slowly slide your back down the wall until your knees are bent as close to ninety degrees as possible. Hold for 30 seconds, increasing the time to a minute as the exercise becomes easy. Straighten your knees and ease yourself back up the wall. Repeat the exercise five times.

**Straight Leg Lifts** – Sit on the floor, back straight, one leg extended and the other bent toward your chest. In this position, lift the straight leg slightly off the ground. Lower it to the floor, then repeat five times. Switch to the other leg and complete five consecutive repetitions. Increase the number of total repetitions. Increase the number of total repetitions as the exercise becomes easy.

**Bridges**

Bridging is where you lift your hips up from a supine position. It activates your buttocks and hip stabilizers in your hip joints where your femurs attach to your pelvis. By strengthening your buttocks and pelvic floor muscles, you can alleviate some back pain and tight hip flexors. This is good for those who have weak hips and mild back stiffness, since the supine position on the floor
lessens pressure upon the spine.

Lay on the floor on your back with your arms at your sides and palms facing up. Bend your hips and knees, and bring your heels close to your buttocks. Keep your legs about hip-width apart and your toes pointing forward. Exhale and lift your hips off the ground as high as you can without hyperextending your lower back or lifting your toes. Hold for two deep breaths and lower your hips to the ground.

You may also do a one-leg bridge where you lift one leg up in the air and bridge up.

**Supine Hip Rotation**
This exercise stabilizes and rotates your pelvis in a supine position, and it also strengthens your trunk muscles as your hips are moving.

Lay on the floor with your arms to the side and your palms facing up. Bend your legs and hips at 90 degrees and keep your knees together. Place a folded towel between your knees, and squeeze it tight throughout the exercise. Slowly turn your hips to the right, and lower your legs as low as you can without lifting your left shoulder and arm off the floor. When you reach your maximum range of motion, rotate to the other side. Keep rolling back and forth for about 30 to 60 seconds.

You may also straighten your legs, and do the same rolling pattern. In this position, you probably would not be able to rotate as much.

**Deep Squat Series**
This exercise sequence increases your core and hip stability and mobility. The movement takes your hips and legs in a full, deep squat and retrains your nervous system to activate your core and hips to generate stability in movement. It also functions as a warm-up before training and competition.

Stand with your feet shoulder-distance apart and your toes pointing forward in front of a step or a similar platform that you can put your hands on. Raise your arms above your head, and bend forward to place your palms on the platform. Lower your hips into a deep squat while keeping your spine tall and chest high. Hold the position for a few deep breaths.

Then raise your arms above your head, and push yourself up, keeping your spine in the same position without bending forward. If you have trouble doing the squat pattern, place a rolled-up beach towel under your heels for support. As you become proficient with the movement pattern and improve your posture, remove the heel support.