

HIIT It!

Get more results in less time with this super-intense cardio workout.

By MATT FITZGERALD

Nancy LeBlanc, 40, used to stick to slow and steady cardio. An executive assistant and avid tennis player in Waltham, Mass., LeBlanc went for brisk walks and rode the elliptical trainer at the same moderate intensity week after week. But she just wasn't getting the results she wanted. So she hired strength and conditioning coach Tony Gentilcore, CSCS, of Cressey Performance near Boston, who introduced her to a gut-busting, super-swift aerobic workout technique called high-intensity interval training (HIIT).

HIIT features short sprints (lasting no longer than one minute) performed at very high intensities, interrupted by brief rest periods. The workouts can be applied to any cardio activity, and they seldom take more than 15 minutes to complete. This makes them different from the longer, slower interval workouts many endurance athletes employ. And, unlike Tabata intervals, which consist of 20-second sprints followed by 10-second recovery periods, a typical HIIT workout has recovery periods that are longer than the sprints. (For more on Tabata, see "The Tabata Tune-Up" in the March 2008 archives at experiencelifemag.com.)

Under Gentilcore's guidance, LeBlanc began on the stationary bike with repeated 30-second sprints followed by 90-second slow-pedaling recoveries. Despite the brevity of these workouts, they were harder than anything she had experienced. "It was total torture," she recalls.

Almost immediately, however, she noticed results. "My energy level increased tremendously," she says, "and I lost a ton of fat." That's because HIIT stimulates big increases in mitochondria (the body's intracellular energy factories) and elevates metabolism for hours after each workout. (For more on mitochondria, see "Functional Wellness, Part 6: Energy, Mitochondria and Toxicity," page 62.) As LeBlanc got fitter, the HIIT workouts became less tortuous, so Gentilcore kept changing their format to keep them challenging. As a result,

LeBlanc dramatically improved her tennis game. "I never get tired now," she says.

LeBlanc's experience with HIIT is not unusual. If you're looking for a time-efficient way to improve your sports performance or boost your energy, HIIT is it.

Faster, Leaner, Fitter

A recent study conducted at the University of New South Wales in Australia found that after 15 weeks on a three-times-a-week HIIT program, women lost an average of 2.5 kg

How to HIIT

The following workout, designed by Tony Gentilcore, CSCS, is appropriate for those who have never done HIIT before, but have a good fitness foundation in steady-state cardio. (See "A Natural Progression," next page, for guidelines on developing your fitness with HIIT.)

1. Warm up with five minutes of easy pedaling on a stationary bike.
2. Do your first high-intensity interval by increasing the resistance on your bike and increasing your pedaling cadence until your effort level is 9 on a 1-to-10 scale. Continue for 20 seconds.
3. Reduce the resistance and your pedaling cadence back to warm-up levels for 60 seconds.
4. Complete five more (six total) 20-second high-intensity intervals followed by 60-second active recoveries.
5. Cool down with five minutes of easy pedaling.

(about 5.5 pounds) of body fat, representing an 11.2 percent decrease. In contrast, the control group that maintained its activity level and a group that did three steady-state cardio workouts per week over the same period actually saw slight *increases* in body fat. The difference, experts say, is likely due to what's known as the "afterburner" effect.

"What happens is that after an interval workout is completed, because it's so intense, the metabolic rate stays elevated longer, and you continue to burn calories at a higher rate [long after you've stopped exercising]," explains Martin Gibala, PhD, an exercise physiologist at Canada's McMaster University who has conducted more than a half-dozen studies on HIIT.

These studies and others have shown that HIIT boosts fitness as well as it burns fat. A 2007 study published in the journal *Medicine and Science in Sports and Exercise* found that subjects who performed two different types of HIIT workouts boosted their VO₂ max (a measure of aerobic fitness) by 5.5 percent and 7.2 percent in eight weeks — significantly more than those who used steady-state workouts.

HIIT strengthens the aerobic system by increasing the heart's pumping capacity and the blood vessels' elasticity, explains Gibala. These changes have a direct impact on sports performance. A 2006 study published in the *Journal of Science and Medicine in Sport* reported that runners who engaged in a weekly regimen of two steady-state runs and two HIIT workouts improved their 3,000-meter race times by 7.3 percent in six weeks, while others who did only steady-state runs saw no significant improvements.

"The bottom line is that HIIT enables you to maintain a higher level of performance for a longer duration," says Gentilcore. "Show me an athlete who doesn't want that!"

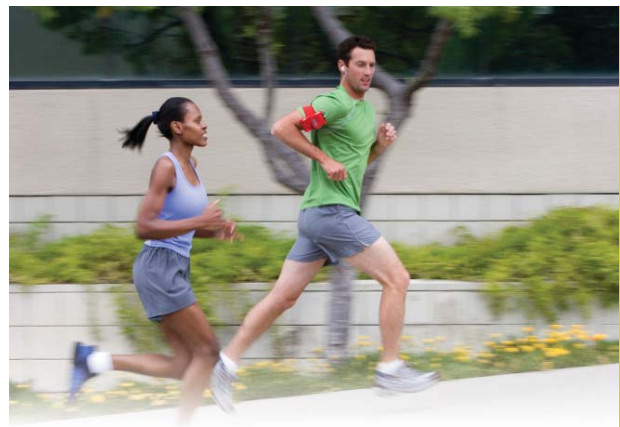
Getting Started

If you've never done HIIT before, it can be challenging to push yourself hard enough to get the most out of these short workouts. This doesn't necessarily mean that each sprint has to be all-out, says Gibala, but you need to get out of your comfort zone and go hard if you expect results.

During your first few HIIT sessions, simply focus on determining how hard you can go. It's better to complete the workout as planned than to start at an unrealistically high effort level and conk out before you finish. If, on the other hand, you complete your first HIIT session and think, "That wasn't so bad," you'll know to take it up a notch.

Pay attention to workout numbers, such as your watts on a stationary bike or your speed on a treadmill. In each workout, try to meet or beat the numbers from your last session.

Exactly how hard you go depends not only on your fitness level, but also on the duration and number of intervals and the duration of the intervening rest periods. Typically, Gentilcore has his clients start with shorter intervals and longer rests. "A good place to begin is 20-second intervals with 60-second recoveries," he suggests. As with any exercise plan, those with medical conditions should consult their physician before trying HIIT.



"HIIT enables you to maintain a higher level of performance for a longer duration. Show mean athlete who doesn't want that!"

Limitations of HIIT

A little HIIT goes a long way. Too much will exhaust you and hamper your ability to strength-train and, yes, do steady-state cardio, which remains a classic endurance builder.

"Too many people go to the extreme, performing three or more HIIT sessions a week," says Gentilcore. "But even athletes do intervals just once or twice a week."

He recommends building your HIIT workouts to peak levels once or twice a year — timing these peaks to provide maximum fitness when you need it most — and then taking a few weeks off before starting a new HIIT cycle.

"High-intensity interval training is a good thing," says Gentilcore. "But there can be too much of any good thing." ©

Matt Fitzgerald is a running and triathlon expert and has authored and coauthored several books, including *Maximum Strength* (Da Capo, 2008) with Eric Cressey.

A NATURAL PROGRESSION

The following 11-step HIIT workout progression can help you dramatically improve your fitness over a number of weeks. You'll know you're ready to move from one step to the next when the workout you're doing becomes noticeably easier, or when you're able to do your intervals at a greater speed or power-output level.

11-Step Workout Progression: Start with workout No. 1 and complete it two to four times before advancing to the next workout. Do no more than two HIIT workouts per week. (Be sure to warm up with five minutes of light activity, and cool down with another five easy minutes.)

1. 6 x 20 seconds high intensity/1 minute low intensity
2. 8 x 20 seconds high intensity/1 minute low intensity
3. 10 x 20 seconds high intensity/1 minute low intensity
4. 6 x 30 seconds high intensity/90 seconds low intensity
5. 8 x 30 seconds high intensity/90 seconds low intensity
6. 10 x 30 seconds high intensity/90 seconds low intensity
7. 6 x 1 minute high intensity/2 minutes low intensity
8. 8 x 1 minute high intensity/2 minutes low intensity
9. 10 x 1 minute high intensity/2 minutes low intensity
10. 10 x 1 minute high intensity/90 seconds low intensity
11. 10 x 1 minute high intensity/1 minute low intensity