

**Safety and Education**  
**Vol. 32/23**  
**High-Intensity Workouts for You**

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**The Best HIIT Bike Workouts to Add to Your Routine**

HERE'S EVERYTHING YOU NEED TO KNOW ABOUT HIGH-INTENSITY INTERVAL TRAINING.

By Selene Yeager / Published March 22, 2023 / Bicycling.com

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**INTRODUCTION**



High-intensity interval training a.k.a. HIIT has basically become a workout staple among athletes. The reason: Because it works, and it works fast. Whether you're coming straight off the couch, you like to do [long rides](#) on weekends, or you [race your bike](#) for a living, HIIT bike workouts are good for your health—and they make you fitter and [faster](#).

To get the most of your HIIT bike workouts, though, you need to understand what this type of [training](#) really entails, what you can get out of it, and how to make the most of your sessions. Lucky for you, we have your complete guide to all things intervals.

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**What exactly is a HIIT workout?**

HIIT sounds very scientific, but it's really very simple. It's comprised of short, hard bouts of [cardio exercise](#)—anywhere from 10 seconds to five minutes in length—broken up by brief recovery periods.

How hard is hard? That depends on the interval length, but the key is to go as hard as you can for the duration of the effort. So if you're doing [Tabatas](#) (20 seconds of effort, followed by 10 seconds of recovery), you're pushing full throttle for 20 seconds. If you're doing longer, three- to five-minute intervals, you're working in your [VO2 max](#) zone, or about 95 percent of your [max heart rate](#) (or a 9 on a scale of 1 to 10 for rate of perceived exertion) for the duration of the interval.

How much [recovery](#) you take between intervals depends on your goals. Short intervals are usually paired with equally short or even shorter recovery periods so your body can adapt to repeated maximal efforts. And because your heart rate stays elevated during the recovery periods, your [aerobic energy system](#) (in addition to anaerobic) gets a training benefit, as well.

In other cases, such as super high-intensity sprints, you want each effort to be done at max, so you need to let your body fully recover for four or five minutes between bouts.

### **What are the benefits of HIIT bike workouts?**

New studies on the benefits of HIIT make the news on a regular basis. For example, a [meta-analysis](#) of 10 studies, published in 2022 in *Experimental Gerontology*, found that HIIT can reduce blood pressure in older adults. Another [meta-analysis](#) published in 2022 in the *International Journal of Environmental Research and Public Health*, including 14 studies, found that HIIT can support those living with diabetes by helping with blood sugar control, blood pressure, and potentially [inflammation](#).

As for HIIT's effects on performance, a [study](#) in the November 2018 issue of *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology* found that just *two minutes* of sprint interval training (in this case, four 30-second max-effort sprints followed by four and a half minutes of recovery for a total of 20 minutes) improved [mitochondrial function](#), just as well as moderate exercise. Mitochondria helps change fuel to energy quickly, and it's a benchmark for good health and exercise performance. In other words, busting out two minutes of really hard work can give you the same fitness benefits as slogging through 30 minutes at a steady, moderate pace.

It's no surprise HIIT training is also outstanding for your cardiovascular system. [Research shows](#), depending on how fit you are when you begin, HIIT can boost your VO2 max (how much oxygen you can use) up to 46 percent in 24 weeks, increase your stroke volume (how much blood your heart pumps out per beat) by 10 percent after eight weeks of training, and significantly [lower your resting heart rate](#). It's also safe for cardiovascular disease patients and can be more effective at improving cardiorespiratory fitness in this population, compared to moderate-intensity continuous training, according to another 2022 [meta-analysis](#).

HIIT workouts do more than benefit your body. They're also good for your mind. [Research](#) shows that high-intensity workouts improve cognitive function and increase levels of brain-derived neurotrophic factor (BDNF) more than easier exercise. BDNF is essential

for learning, [memory](#), and mood regulation, and your brain uses it to repair and maintain brain cells. Another [study](#), also from 2022, involving 82 participants with depressive disorders, found that HIIT can improve [sleep quality](#), depression symptoms, and cardiorespiratory fitness.

The best part is that HIIT provides all of these benefits as well as—and in some cases better than—traditional longer bouts of moderate cardio exercise in far less time.

### **How does HIIT benefit cyclists, specifically?**

Most of us already ride a lot because as endurance athletes, that's our thing. But even if you're already fit, you can still reap measurable benefits from adding HIIT to your training regimen, says exercise physiology professor and coach [Paul Laursen](#), Ph.D., endurance coach, author of [\*The Science and Application of High-Intensity Interval Training \(HIIT\)\*](#), and cofounder of [HIIT Science](#).

For cyclists who like to go long, HIIT can be part of a smart [base-building strategy](#). “Your base comes down to your mitochondrial capacity,” Laursen says. “Longer, lower-intensity exercise increases the number of mitochondria in your cells, which is why people perform long, steady [endurance exercise](#) to build a base. But high-intensity training makes those mitochondria more powerful,” he says, noting that research also shows that [high-intensity exercise](#) performed regularly can stimulate the production of mitochondria, as well.

“Our research found that when well-trained cyclists performed two interval sessions a week for three to six weeks, their VO2 max, peak aerobic [power output](#), and endurance performance improved by 2 to 4 percent,” Laursen says.

### **How do you perform HIIT workouts properly?**

Laursen says you've got three main weapons to choose from in the HIIT arsenal: Long intervals, like the [VO2 intervals](#) that range from one to four minutes; short intervals done at about 120 percent VO2 max that can last from 10 to 60 seconds with equal recovery periods; and [sprint](#) intervals, which are done “all out” and can be either very short (three to six seconds) or longer (20 to 30 seconds).

You can take the shotgun approach and rotate through all three. Or choose the format that best works your weak spot. “If you fade out during longer efforts, do longer [HIIT training](#) intervals. If you're lacking in the short 10- to 30-percent power range, then do sprints,” Laursen says.

For general [endurance](#) benefits, interval durations ranging between 30 seconds to five minutes at a very hard intensity build your aerobic system while also recruiting some [fast-twitch sprint fibers](#), which makes your power-producing fibers more fatigue-resistant over time, Laursen says. “Performing three to six of these efforts, allowing one to two minutes of recovery between, can have impressive effects,” he says.

You can perform HIIT intervals in your primary sport, or you can do them when you [cross-train](#) to get a metabolic boost while giving your body a break from your usual activity, Laursen says. “This works well for runners and team sport athletes who occasionally need to reduce their impact while nursing a little injury or niggle,” he says. “They can do a [HIIT session](#) on the bike to maintain their cardiovascular load, while lessening the impact on their neuromuscular system.”

### How often should you do HIIT workouts?

HIIT is like medicine: The right dose works wonders, but too much can have ill effects. If you’re not racing or doing big events on the weekends, you can do up to three [HIIT workouts](#) a week to stay fit, so long as you allow ample [recovery](#), ideally a day or two of easier activity, between sessions to allow your body to bounce back.

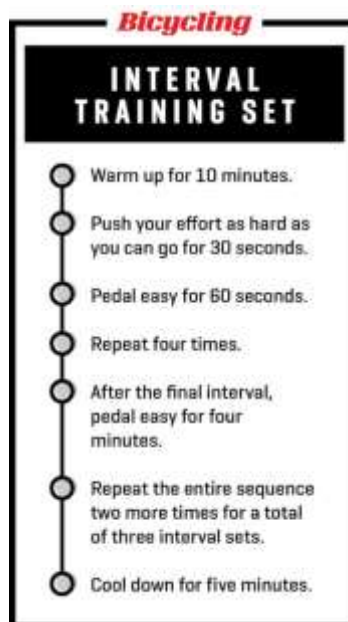
Once you’re out there putting in longer miles and/or pushing it hard with weekend outings, you can dial back your HIIT workouts to just once or twice a week to stay sharp between events.

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## The Best Bike HIIT Workouts

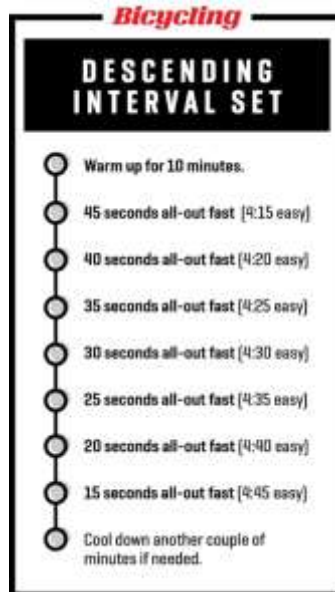
### Quick and Dirty 30s

Thirty seconds is the ultimate HIIT duration—just long enough that you can really ramp it up full throttle, but not so long that you fizzle out before it’s over. Experienced riders can follow the Dirty 30s as outlined here; [beginner cyclists](#) should extend the rest interval to 90 seconds. (Advanced riders can shorten the rest interval to 30 seconds.)



## Descending Miracle Intervals

Olympic coach Gale Bernhardt, coauthor of [Become a Fat Burning Machine](#), prescribes a type of HIIT interval she likes to call “miracle intervals”—not because you need a miracle to finish them, but because they deliver the high-intensity, fat-burning, top-end fitness benefits of traditional HIIT bouts without completely flogging you. “I like giving longer [recovery intervals](#) because you can really generate high, all-out power for each ‘on’ interval,” Bernhardt says. This workout is 45 to 55 minutes.



## Race-Winning Intervals

These intervals were created by Hunter Allen, founder of [Peaks Coaching Group](#), and simulate exactly how an athlete must ride to win a race. “You must attack hard enough that no one gets on your wheel, and you establish a gap,” Allen says. This is why intervals incorporate both in- and out-of-the-saddle pushes. To close out, the final sprint simulates the final sprint to the line. Each interval is measured in rate of perceived exertion (RPE), on a scale of 0 to 10, with 0 being easier than a soft pedal while 10 is an all-out effort.

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## RACE-WINNING INTERVALS

Warmup	15 Minutes	RPE 1-2
Fast Pedaling Drills	1 Minute	110-120 RPM
Ride Easy	3 Minutes	80 RPM
Ride Endurance Pace	5 Minutes	RPE 1-2
Sprint	30 Seconds	RPE 8
<small>First 15 seconds out of saddle</small>		
Threshold Pace	3 Minutes	RPE 5-6
Out of Saddle Sprint	10 Seconds	RPE 8-9
Spin Easy	5 Minutes	RPE 1-2
Cool Down	10 Minutes	RPE 1

Repeat x 3  
Repeat x 5-8

## The Best Off-the-Bike HIIT Workouts

### Workout 1: The Swing & Push

This [full-body interval workout](#) combines high-energy swings with military-style push-ups to hit every single muscle in your body and keep your heart rate high.

- Warm up with a few easy [calisthenic moves](#) (like star jacks, [mountain climbers](#), or jump squats)
- Perform a “Swing & Push” interval set:
  - Kettlebell swings, 30 seconds
  - Rest for 15 seconds
  - Push-ups, 30 seconds
  - Rest another 15 seconds
  - Repeat 4 times

### Workout 2: The Combo Exercise Set

This dynamic combo targets all your [major cycling muscles](#), as well as many of your smaller supporting muscles. Plus, it’s absolutely killer for your [core](#).

- Warm up with a few easy calisthenic moves
- Perform a sumo pull to press and push-up to side plank interval set:
  - Sumo pull to press, 30 seconds
  - Rest 15 seconds
  - Push-up to side plank, 30 seconds
  - Rest another 15 seconds
  - Repeat 4 times

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Okay riders. This article is the icing on the cake of the three-part series on the benefits of cycling for older adults, and specifically on the benefits of high-intensity interval training (HIIT). Now you know why you should do it (HIIT), when you should do it, and how you should do it. So go ahead and find a HIIT workout that suits you, print it out, then snip it out and take it with you on your bike. See you next week.

Until then, make Every Ride Epic,

Darryl