



RIDE HARD, RECO

Though he spends thousands of hours on the bike, some of Chris Horner's most important race prep takes place on the couch. "It's a physical and mental break," says the RadioShack-Nissan pro, about getting off his feet and paying attention to his remote instead of his watts.

Plenty of everyday cyclists log far fewer miles than Horner, yet risk injury, overtraining, and burnout by neglecting this kind of down time. "They think they can't afford to go easy," says Stephen Cheung,

{ IF YOU'RE HAMMERING EVERY DAY, YOU'RE PROBABLY HOLDING YOURSELF BACK. HERE'S HOW TO NOT GO ALL-OUT JUST RIGHT. }
BY ANNE STEIN

PhD, a professor of kinesiology at Brock University in Ontario and coauthor of *Cutting-Edge Cycling*. "But recovery is just as valuable as training, if not more so."

One of the ways you become a better cyclist is through muscular adaptation. In very basic terms, this is what happens: The stress of training causes micro tears in

your muscles. Your body then repairs the damage, which results in an inflammatory response (the swelling and tenderness you feel after a hard workout or race).

This rebuilding process creates stronger muscles—but only if the body has adequate time to heal. "If you start your next ride when you're not completely recovered,"

THE ROAD TO BECOMING A BETTER CYCLIST IS PAVED NOT ONLY WITH THE MILES YOU PEDAL, BUT WITH THE TIME YOU SPEND OFF THE BIKE.



COVER HARDER

says Max Testa, MD, chief medical officer for Team BMC and former team doctor with 7-Eleven and Motorola, “your body’s at a disadvantage and you’ll grow more tired and gain less from each workout.”

But recovery isn’t just about sitting on the couch with your legs up. It’s also about not going hard all the time and using days off wisely. Strategies like low-intensity rides and massage allow your muscles to benefit from all the work you’ve put in. Here’s how to maximize every minute you spend in—and out—of the saddle.

REST, ACTIVELY

In a well-thought-out training plan, rest usually doesn’t mean doing nothing. In fact, many coaches prefer low-effort workouts to total rest on off or easy days to get blood circulating and reduce inflammation so you’re primed for your next ride.

Another form of active rest is the postride cooldown at the end of a long or hard effort. Easing up on the pedals enhances blood flow to help flush your legs of lactic acid (a waste product of exercise) and fuel your depleted muscles. A study

in the *Journal of Strength & Conditioning Research* found that when cyclists did a 15-minute cooldown spin at 30 percent of their VO_2 max after a hard effort, they were able to perform almost as well 24 hours later on an identical strenuous workout.

DO IT Plan active recovery workouts for the day after a high-mileage weekend, a hard interval session, or a race. For these rides, the trick is to go deliberately—borderline embarrassingly—slow. Cheung describes it as letting-your-grandmother-beat-you easy. And you don’t have to

limit yourself to the bike; walking, easy swimming, or light jogging count. As for a cooldown, dial your effort back to a pedal-to-the-coffee-shop intensity during the last five to 10 minutes of your ride, says Cheung. Keep power and resistance low, heart rate slightly elevated.

TAKE A COLD PLUNGE

Long a favorite ritual of distance runners, soaking in cold water after a workout has been shown to reduce inflammation and soreness. The same *Journal of Strength & Conditioning Research* study mentioned on the previous page found that a group of

BUT ISN'T INFLAMMATION GOOD?

You might be wondering why you should limit inflammation if it ultimately helps muscles grow stronger. Some inflammation is good when training, says Testa, but you don't want so much that you're too sore or tired to ride. The muscle-soothing, injury-preventing effects of simple recovery methods can help you face your next hard ride fresh and ready to go. Especially if you're doing a stage race, or a multiday or century ride, Testa says, it's critical to wake up feeling capable of more miles. It's the main reason Tour de France riders put in two to three hours in the saddle on rest days.—A.S.

GET A MASSAGE

A postride rubdown helps increase circulation and clear muscles of lactic acid, says Reed McCalvin, head *soigneur* for Team Bontrager-Livestrong. It also reduces adhesions, or knots, that make movement less efficient and more painful. What's more, science has linked massage to improved muscle function. In a study on cyclists who got a massage on only one leg, biopsies showed greater muscle regeneration in the treated leg. And researchers in Canada found that postexercise massage reduced inflammation and promoted the growth of new mitochondria—the parts of your cells that produce power.

There's also a mental benefit to massage, says Testa. Numerous studies have shown that it lowers levels of the stress hormone cortisol, which is released during hard efforts. "If your brain remains in fighting mode," says Testa, "it slows your recovery." Excess cortisol has been linked to overtraining syndrome and can lead to a host of problems including irritability, weight gain, and muscle loss. **DO IT** No *soigneur* on your payroll? You can buy a foam roller at most sporting-goods stores and use it after a ride or any time in between. Rest your leg muscles and glutes on the cylinder and roll slowly back and forth, pausing and pressing into the sorest spots for 30 to 45 seconds. For hard-to-reach areas such as shoulder blades and other parts of your back, lean against a tennis ball on the wall. (Go to BICYCLING.com/rollout for six foam-roller moves.)

cyclists who immersed their legs in cold water right after a hard effort performed



NIX THE ICE—IT MAY CONSTRICT BLOOD FLOW.

If you start your next ride when you're not completely recovered, your body's at a disadvantage and you'll gain less from each workout.

even better on a second rigorous ride 24 hours later. Another benefit: Soaking in cold water can simply feel good, especially on hot days. Whether it leads to actual strength gains is up for debate. A recent review of 17 studies found that while it does reduce pain, cold-water immersion might not make muscles stronger.

DO IT Fill a tub with about 8 inches (enough to cover your legs while you're in a seated position) of 50- to 60-degree water. Soak for up to 15 minutes within a half hour of finishing a hard ride. If you can't tolerate the chill, start with shorter baths and try keeping your shorts on and wearing a fleece jacket.

REFUEL THE RIGHT WAY

At the end of Tour de France stages in the mid-1980s, 7-Eleven team members would immediately drink soda to spike insulin stores, says Testa. They'd then eat a sandwich, yogurt with fruit, and maybe some cheese with potatoes later at the hotel. These days, team directors use a more formulaic approach; riders guzzle recovery drinks with an ideal balance of muscle-mending protein and glycogen-replacing

carbohydrates that are easy to digest and quickly enter the system. **DO IT** Unless you're pressed for time, it's easy enough to get these nutrients from real food. The optimal formula is four parts carbohydrate and one part protein. Good postride recovery snacks include a smoothie made with Greek yogurt, banana, and berries, or



a bowl of cereal with fruit and milk, says sports nutritionist Nancy Clark, RD. For a meal, try a turkey and cheese sandwich or spaghetti and meatballs made with turkey or lean beef.

You also need to replace sodium and potassium lost through sweat, and while commercial sports drinks are handy, says Clark, low-fat milk (regular or chocolate), and other convenient foods such as pretzels, a bagel with peanut butter, or pasta with tomato sauce can be even better for replacing these electrolytes—and for your overall health.

As for timing, feed muscles as quickly as possible after a workout, especially if you have less than 24 hours until your next hard effort. “Within 15 to 30 minutes is ideal,” says Testa. Try to eat something else in the next 60 to 90 minutes, when your body’s primed to take in nutrients and replenish energy stores. And no matter how exhausted you are at the end of a long day, topping off the tank before heading to bed may help repair muscles while you’re down for the count. In a study published in *Medicine & Science in Sports & Exercise*, researchers had a group of exercisers drink a protein shake 30 minutes before bed, while another group drank a shake sans protein. Overnight muscle-protein synthesis rates were 22 percent higher in the protein drinkers.

SLEEP MORE

It’s well known that pro cyclists sleep far more than the average club rider, clocking up to 70 hours of shut-eye a week during the Tour de France, for example, compared with the 40 to 50 hours most of us get during the same amount of time. It’s a recovery tool that pro teams take seriously, and for good reason: When you sleep, your body produces hormones that are critical to recovery. Research has shown that getting just two fewer hours of sleep than normal can slow your reaction time. Indeed, it can be a key factor in athletic performance, says Stanford University sleep researcher Cheri Mah, but one we often neglect. In 2011, Mah and her colleagues found that when athletes who were sleeping six to eight hours a night aimed to get closer to 10, their reaction time and performance improved.

WHEN STOP DOES NOT MEAN GO

SIX SIGNS YOU NEED TO SCRAP YOUR PLANNED WORKOUT AND DO SOMETHING ELSE INSTEAD

- 1 **Your heart rate is higher than normal when you wake up.**
>> Take an easy or rest day.
- 2 **You can’t stomach the idea of riding.** >> Do something else, like a walk or a mellow run or easy swim.
- 3 **Your heart rate on the bike is unusually high—or it’s low plus you’re irritable or don’t feel well.** >> Decrease intensity and/or duration. (Lower heart rate can signal improved fitness. Keep a training log to become familiar with your body’s normal responses.)
- 4 **You immediately feel horrendous on the bike and have a hard workout planned.**
>> Spin easy or don’t ride.
- 5 **You feel so-so on the bike and have a hard workout planned.**
>> Do the first hard effort. If you still don’t feel good, spin easy or call it a day.
- 6 **You didn’t sleep well the previous night and don’t feel rested.** >> Take an easy day.

Source: Stephen Cheung, PhD

The National Sleep Foundation recommends that healthy adults get seven to nine hours of sleep. And though Mah’s study wasn’t specific to cyclists, athletes in any sport will benefit from even just 30 more minutes, she says. **DO IT** To get more sleep at night, try these tips from Mah. Have a consistent bedtime routine; it helps to go to bed and get up at the same time each day. Remove distractions like laptop, phone, and TV from your bedroom, and otherwise avoid them an hour before bedtime. Listen to music or read instead. Finally, limit alcohol (it can prevent deep sleep) and cut off high-octane beverages by midafternoon. ☐

PENCIL IT IN

MAKE SURE YOU BUILD ENOUGH EASY DAYS INTO YOUR RIDING ROUTINE. HERE'S HOW.

Coaches typically designate Monday as an easy day after a weekend of longer endurance rides, says Cheung. Intervals and other power and strength-building workouts are usually planned for Tuesday, Wednesday, and Thursday, with another easy day on Friday before the increased weekend volume. There's also a longer-term approach in which a month consists of three weeks of hard training followed by an easier week to allow the stress to settle in. "The idea is to work hard," says Cheung, "then give yourself time to properly recover before going on to the next hard bout of training."

No set schedule works for every cyclist, though, and it may take a while to figure out your optimum training/recovery ratio. Recovery is highly individual and depends on age. Typically the older you are, the more recovery time you need, says Cheung. A hard effort at age 50 may need to be followed by two days of easy riding rather than the single day you required at age 30.—A.S.

