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29

# Pro Cycling Secrets



FOR  
ROADIES

# 29 Pro Cycling Secrets for Roadies

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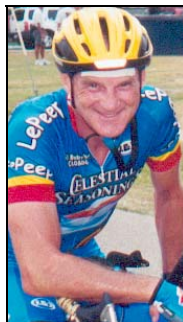
During our careers as cycling journalists, we've had the great fortune to meet (and do a few miles with) some of our sport's most talented riders and coaches. We asked them the same questions you would if you had the chance. We learned what the pros really do!

Over the years, we wrote about these tips in our books and magazine articles. But we never rounded up the best advice and put it all together—until now! And we've taken it one step further by showing you how to use these pro secrets in your own riding. Whether you race or simply want to perform more athletically in the type of cycling you love best, here are 29 ways to improve.

If you like this eBook, be sure to tell your cycling friends. They'll get a complimentary copy, too, when they sign up for the free weekly newsletter at [RoadBikeRider.com](http://RoadBikeRider.com). Thanks!



Ed Pavelka



Fred Matheny

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# Part 1: Techniques

## Think Like a Climber

Three keys to better climbing are (1) mental attitude, (2) light bodyweight and (3) smart tactics.

### Pro

**Greg LeMond** (triple Tour de France winner, double world pro road champion, American cycling legend).

### Secret

**“There’s not much difference in perceived effort between a 40-minute time trial on the flat and a 40-minute hard climb. But most riders perceive climbing as harder. You need to adjust your thinking to be a good climber.”**

## What You Can Do

Let’s make one thing clear immediately—good climbing is not “all in your head.” Genetic ability, training, and your power-to-weight ratio are far more important.

But an optimistic, can-do attitude when the road tilts upward makes a big difference, not only in your performance but also in your enjoyment.

Here’s how to get your head on straight:

**Choose hills.** If you have a choice between a hilly loop and a flat ride, which one do you choose? Most mediocre climbers automatically head for billiard table roads. Break out of this

habit. Two or three times each week, ride the hilliest course you can find. To be a better climber, climb.

**Use appropriate gears.** If your favorite pro climber uses a 39x21-tooth gear on a given climb, why are you tackling similar gradients in the 23?

**EXAMPLE!** Look at it this way: Pro riders can be competitive on any climb if they produce 6-7 watts of power per kilogram of body weight. If they weigh 70 kg (154 pounds) they need to churn out 420 to 490 watts. The average pro can generate more than 400 watts on medium-length climbs. Lance Armstrong generated in excess of 500 watts in a 35- to 40-minute climb. The average masters-age racer, in contrast, manages 250 to 300 watts.

So the question becomes: If Lance put out almost twice as much power on a climb, why are you using a gear only 2 teeth easier?

Get a 27-tooth big cog, or swallow your false pride and invest in a triple crankset. Then you'll be able to keep your cadence above 80 rpm, save your knees—and climb faster than you would if you were slogging away in the 23.

**Mark off intermediate goals.** It's a long way to the top of a 3-mile climb. Even good climbers can be intimidated when they compare their effort to the distance remaining. It's mentally excruciating to think of working so hard for another 10 or 20 minutes.

Instead, break a climb into a series of goals. Tell yourself you'll maintain the pace to the next turn. Once there, set another goal—the big tree a quarter mile ahead, for instance. Soon you'll be at the top.

Just as a higher cadence allows you to break the effort of pedaling into easier chunks, choosing intermediate goals lets you break up the mental effort of climbing.

**Ride with climbers who are only slightly better.** If you try to climb with superior riders, they'll leave you way down the hill. That's tough on your psychology. Even worse, they'll be so far up the road that you won't be able to learn from riding with them.

Instead of trying to climb with the lightweight mountain goats, find riding companions who are good enough to make you work without blowing your doors off.

**Examine your self-talk.** When a hill looms, what goes through your mind? Do you think: "Oh no, another #&\*%%\$ hill!" Or do you say to yourself, in a quietly confident way, "I'm improving on hills every day. I'll ride this one to the best of my ability and get a little better in the process."

LeMond is right: Mental attitude can be stronger than gravity.



# Optimum Body Weight

**Pro**

**Greg LeMond**

**Secret**

**“The best climber’s build is a marathoner’s scrawny upper body with powerful, piston legs. Pros climb well in three-week tours because their upper bodies atrophy during the event from lack of use. It’s a fallacy that a burly upper body will help you climb better on the road. Strength helps but bulk doesn’t. Body fat should be as low as possible, but so should upper-body muscle volume.”**

**EXAMPLE!** How much does weight loss help climbing? According to exercise physiologist David Swain, PhD, if a 165-pound rider loses 10 pounds while maintaining the same power output, he’ll save a whopping 2 minutes on a 5-mile climb.

## What You Can Do

Riding more helps you lose extra pounds, of course, although you’re unlikely to amass the 20,000 to 25,000 miles per year that pros routinely log. A faster way for us mortals to get svelte is to limit unnecessary calories from our diets. Try these ideas:

- Avoid fatty salad dressing, substituting a squeeze from a lemon wedge.
- Use skim rather than whole milk.
- Eliminate margarine and butter. Try low-fat jam or fat-free cream cheese on your bagels.
- Limit lean meat servings to 3 ounces baked or grilled (about the size of a pack of cards).
- Eat more vegetables, rice, and potatoes in place of high-calorie dishes.
- Order your pizza with half the cheese. Only your waistline will know the difference.
- Fill half your bowl with rice before you add the chili. You’ll get more carbo from the rice and less fat.
- Drink water when off the bike instead of soft drinks or beer.

## Climbing Tactics

**Pro**

**Greg LeMond**

## Secret

“People tend to go out too hard early on a climb and then suffer before the top. If you try to keep up with faster riders you’ll feel okay for a couple of minutes, but then you’ll blow up spectacularly and ultimately you’ll go slower. The solution is to back off earlier in the climb and keep your pace steady. You’ll lose less time to the leaders.

“The same goes for interval training. Riders tend to do the first minute of a 5-minute interval way too hard. Wattage data shows that it’s better to start with an intensity you can maintain all the way. It’s better to start too slowly and pick up the effort in the last minute.”

## What You Can Do

**DRILL! Divide and Conquer:** Find a hill that takes about 5 minutes to climb. Mentally divide it into thirds. Ride the first third at a pace that feels “moderate.” Increase the pace slightly during the middle third. As you approach the last section, you should be breathing hard but in control. Now increase the pace all the way to the top.

You’ll find that your performance improves when you start the climb at a reasonable rate and gradually up your effort. Think of yourself as a carpet unrolling, going faster as you near the end.

## Climbing Position

### Pro

**Bobby Julich** (third overall in the ’98 Tour de France).

### Secret

“I tend to sit most of the time while climbing. When the road suddenly gets steep that’s a good time to stand. I also stand when attacking or accelerating. But otherwise I stay seated because my heart rate remains lower.”

## What You Can Do

For most riders, standing on a climb results in a heart rate increase of about 5 beats per minute compared to sitting and going the same speed. Small, light riders usually can stand with less pulse penalty because they’re supporting less weight than bigger riders. That’s why 125-pound riders like Marco Pantani stand more than big guys like Jan Ullrich.

**TIP!** To find the climbing style that’s most efficient for you, ride to a steady grade that takes 4-10 minutes to climb. Do the whole hill seated at a brisk but not all-out pace. Note your heart rate and the time it takes to get to the top.

Roll around for 15 minutes to recover, then ride the climb again—standing this time, at the same heart rate. Compare your elapsed times.

Repeat several times over a period of a month to allow for variations in form on a given day. By comparing times, you should have a clear picture of which climbing style is better for you.

## Climbing Cadence and Style

**Pro**

**Bobby Julich**

**Secret**

**“I tend to spin a lot more than most pro climbers. My cadence is probably 80 to 100 rpm even on the steepest grades.**

**“Most climbers slide forward and backward in the saddle to vary the strain on their muscles, but I try to stay in the same place most of the time. I climb with my hands on the brake hoods and relax my arms when I’m seated.”**

### What You Can Do

Julich’s predilection for a rapid climbing cadence was shared by Tour de France winner Lance Armstrong, who amazed us with his ability to spin up steep grades while his competitors were grinding.

The secret is to choose gearing that lets you spin on the steepest climbs in your area. If it takes a 39x27-tooth low gear, get one. Don’t let vanity stand in the way. Lance regularly climbed in a 23 and occasionally put on a 25. You’ll find that you, too, are able to climb just as fast when you’re pedaling a lower gear more rapidly. And your knees will thank you.

**TIP!** While you’re spinning up climbs, think about relaxing your upper body. Muscular tension in the arms, shoulders, and face uses energy better spent for turning the pedals.

Look at videotapes of Julich, LeMond or Armstrong. Notice how relaxed they appear even when the crunch is on. Compare their stylish climbing to your own posture on the local killer hill. Now work on flowing to the top.

## Sticking With the Climbers

**Pro**

**Bobby Julich**

**Secret**

**“I try to start each climb in front regardless of my fitness level. It works especially well if you aren’t the best climber in the group. You can limit your losses and catch up on the descent.**

**“When people pass you and you sit on, remember to climb with your front wheel a bit to one side of the rear wheel you’re following. If you’re directly behind and that person stands up abruptly, you could get taken down.”**

## **What You Can Do**

**DRILL! Frontal Assault:** Go with a group that has several riders who are slightly better climbers than you. Experiment with riding up hills from the front. If you ride at your own pace, you’ll gradually slide back through the group. Your goal is to remain in contact all the way to the top. Each time you ride, try to stick in the group longer. You’ll see the improvement in as little as a month.

## Riding in the Rain

Pros have to race, rain or shine. Here’s how to be a rider in the storm—and stay upright.

### **Pro**

**Ron Kiefel** (7-time finisher of the Tour de France).

### **Secret**

**“There are five key elements to riding on wet roads....**

1. “Relax your arms and shoulders. If your arms are tense and you start to slide out, you’ll crash. If you’re loose and relaxed, you can ride through a minor skid.
2. “Look ahead to the corner and plan your line. A rounded, sweeping path through the corner is best. Abruptly laying the bike over will cause your tires to skid unexpectedly. Watch out for lane lines, painted pedestrian crosswalks, or anything metal—manhole covers or sewer grates. All these surfaces get extremely slippery when they’re wet.
3. “Press hard on the outside pedal as you begin the turn. This lowers your center of gravity and pushes the tires into the pavement for better traction.
4. “If you’re riding behind someone, you can get blinded by the roostertail of spray thrown up from the rear wheel. Although it seems counterintuitive, the closer you are the less spray will hit you. Farther back and you’ll get smacked right in the face. I like to sit a bit to one side so the spray hits my shoulder.
5. “Use a helmet visor or wear a billed cycling cap under your helmet. This shield will help keep spray out of your eyes.”

**TIP!** Ron Kiefel says, “Don’t wipe grime off your glasses with a corner of your jersey. The road grit will scratch the lenses. Instead, give them a quick spray from your water bottle.”

## What You Can Do

**Ride in the rain!** That’s the only way to develop good technique. We know, we know—who wants to go out in abysmal conditions, get soaked, and then have a major bike cleaning task? But it’s necessary if you want to feel confident when the rain is pelting down. Here are some tips to ease the pain of the rain:

**Ride your beater bike.** Every serious rider needs an old bike with cast-off components, fenders, and heavy tires to use for winter training and commuting. Break out The Beast for rainy-day rides so you can spare your best bike from unnecessary wear.

**Practice.** Find an empty parking lot and use paper cups to set up a miniature 6-corner criterium course. You won’t need much room. Keep corners no more than 50 feet apart. You’ll get more practice that way and you won’t build up much speed—a benefit if you misjudge the slipperiness of the pavement and go down.

**CAUTION!** When you do this or any other bike-handling drill that might result in a fall, break out your in-line skating gear. You might feel silly riding in elbow and knee pads, but this protection will boost your confidence. You’ll learn your limits faster. Don’t forget protective long-finger gloves and, of course, your helmet.

**Test the limits.** How can you judge traction in the wet? Here’s a trick often used by pro roadies: Roll along at a slow speed. Unclip your left foot. Turn sharply to the left while applying the rear brake. If you start to skid, simply put down your left foot to catch yourself. You’ll quickly discover the limit of tire traction.

**EXAMPLE!** In 1985, future Tour de France winner Greg LeMond hosted a cycling camp at his home in California. It rained all night, and on the morning of the first ride we were huddled in the parking lot waiting for Greg to arrive. Soon he rolled up, unclipped his foot and skidded to a stop. It looked like a hockey stop on skates. He said he did it often—as bike-handling practice, to judge a road’s slipperiness, and to test how different tires behave when wet.

Once you’re confident of cornering in the rain, talk a couple of friends into riding with you the next time wet weather moves in. Don’t get aggressive and turn it into a race. Instead, stay in control and get comfortable having other riders around you. Get the hang of riding behind wheels without being blinded by the spray.

# Riding in the Dirt

## Pro

Ron Kiefel

## Secret

**“I like to ride the dirt roads around Boulder (CO) on my road bike. It gets me away from cars, and I practice cornering on the descents to get used to the feeling of skidding through turns on skinny tires. It’s great for confidence and teaches me how to ride with a relaxed upper body no matter what a road throws at me.”**

## What You Can Do

When he raced, Kiefel was renowned for his bike-handling ability. No wonder—he was the guy who led out two-time Tour de France stage winner Davis Phinney in almost every sprint. Both raced for 7-Eleven, the first American team to compete in European pro road racing.

Pro leadout men have a tough job description. They have to thread their way through a 100-rider bunch, jam their handlebars through narrow openings, and stay up in slippery corners while banging elbows with other crazies—all at speeds over 35 mph.

No one was a better bike handler in these hair-raising conditions than Kiefel. Here’s how to get some of the magic:

- Look for smooth dirt roads, canal banks, park trails, or fire roads. Informal BMX tracks that spring up in vacant lots work fine, too.
- Ride your regular road bike with old wheels and sturdy tires. Or break out the beater bike you use for commuting, errands, or training in the rain. As long as it has drop bars and road tires, it’ll work fine. Don’t ride a mountain bike for these drills—the wide, knobby tires provide too much traction.
- Wear some protection in addition to your helmet. Long sleeves and tights, long-finger gloves, and maybe elbow and knee pads will reduce the ouch if you slide down.
- Now ride the dirt, playing with corners, bumps, downhills, and slippery places. Push your limits within the boundaries of your present skill level. You’ll have fun, hone your reactions, and build confidence at the same time. Bonus: you’ll find some new (dirt) roads for training variety.

## Adding Variety to Group Rides

Are your group rides getting boring? Here are fun ways to put the thrill back into Saturday morning.

## Pro

**John Teaford** (former Keirin racer, coach with the Carpenter Phinney Bike Camps).

## Secret

**“Don’t just go on a group ride with your buddies. Instead, plan group drills to make rides more interesting and help you improve bike handling, speed, and tactical awareness. I recommend these two.”**

### Attack and Fade

1. In a group of 5-8 riders, organize a smooth, single-file paceline on a rolling, lightly traveled road.
2. The rider at the end of the paceline attacks and sprints past the front of the group, then slows and gradually drifts back.
3. As soon as she settles in at the front, the next rider at the end of the paceline attacks, then drifts back in the same way.
4. Continue until all riders have had an opportunity.

Don’t speed up the paceline in response to the attacks. The purpose is to instill paceline discipline for the group while developing leg speed for individual riders.

### Attack and Chase

1. Count off, just like in PE class, so everyone in a group of 5-8 riders has a number.
2. Organize a smooth, single-file paceline on a rolling, lightly traveled road.
3. The lead rider calls a number (not his own). That rider immediately attacks and tries to stay away.
4. The rest of the riders chase him down by remaining in a paceline, working together, and rotating through smoothly.
5. After the escapee is caught, roll easily for 5 minutes, then repeat with another numbered rider.

## How to Sprint

Learn to sprint like this and you’ll never be humbled during those city limit sign rumbles again.

## Pro

**Davis Phinney** (winningest American rider in road racing history with 328 victories, including two stages of the Tour de France).

## Secret

**“Why work on your sprint if you aren’t a competitive rider? Sprinting is fun. It’s pure play to go fast, like a kid playing tag. Also, the ability to sprint is useful in emergencies, like outrunning a chasing dog or evading a car that’s coming at you from a side street.”**

## What You Can Do

Here’s how to initiate your sprint.

1. Roll along comfortably.
2. Shift to a slightly larger gear.
3. Grasp the handlebar in the drops.
4. Come off the saddle as your pedal goes over the top of the stroke.
5. Accelerate smoothly and powerfully.
6. Go as hard as you can.

**TIP!** To keep the bike under control, pull hard with the arm that’s on the same side as the foot that’s pushing down.

Keep both arms fairly rigid. But be relaxed enough overall to let the bike move slightly beneath you. It should stay almost vertical, swaying back and forth only a bit.

Don’t emulate riders who swing the bike wildly from side to side. That makes it hard to sprint in a straight line. And if you should encounter something slippery (water, gravel, sand, oil), slanted wheels could slide out from under you.

Keep your weight back to maintain traction on the rear wheel.

Keep your head up so you can scan the road for obstacles.

Once you’ve got the basics down, try these drills to really improve.

**DRILL! Go for the Goal:** Pick a road sign, telephone pole, or mailbox about a hundred yards up the road. Roll slowly in an easy gear (e.g., 39x15-tooth), then sprint hard out of the saddle. As soon as you get the gear turning fast (about 110-120 rpm) sit down and smoothly maintain that cadence to your landmark. Shift to an easier gear and roll easily for 3-5 minutes. Repeat this sequence about 5 times.

**DRILL! Attack the Top:** Find a gradual hill about 300 yards long. Climb the first half in a moderate gear, using your small chainring (e.g., 39x17- or 19-tooth). Then shift to the big ring but leave the chain on the same cog (the 17 or 19). Sprint as hard as you can to the top. Maintain good form. If you blow up before the top, the gear is too big or the hill too long for your present fitness level.



Don't do this drill before you have a solid base of cycling fitness. Even then, limit it to once per week.

## Raising Your Cadence

### Pro

**Craig Griffin** (former U.S. National Cycling Team coach).

### Secret

**“Genetics ultimately determine how fast you can ride, but good technique lets you make the most of your inherited talent. If you can sit comfortably in the saddle at an rpm of over 120, you won't fade at the end of group rides. When you use a lower gear and a higher rpm, you keep your legs fresher for late in the ride when it really counts.”**

### What You Can Do

Smooth, fast pedaling is the key to riding a bike like a pro. You can always recognize experienced riders. They sit square in the saddle, upper bodies nearly motionless, while their legs spin like pistons beneath them. No wasted motion, no churning, just an elegant application of power.

Pro pedaling is simply a matter of practice. Use low gears so your heart rate doesn't get over 80 percent of max.

- Lower your saddle 2-3 mm to lessen the tendency to bounce at high rpm. Later, gradually move it back to your correct height.
- Focus on pulling through the bottom of the pedal stroke to eliminate dead spots.
- Get a cyclecomputer with a cadence counter and use it as a biofeedback device. Work on gradually increasing the cadence at which you can ride comfortably for 5 minutes at a time.
- Devote a few minutes to high-cadence pedaling on all your rides. A good time is the last 5 minutes of your warm up.

## Pedaling in Circles

For a better pedal stroke, smooth the transitions at the top and bottom.

## Pro

Greg LeMond

## Secret

**“You’ve probably been taught to pull up on the pedal with your hamstrings. Don’t. Instead, emphasize pulling back on the pedal as it comes around the bottom of the stroke. Pretend that you are scraping mud off your shoe.**

**“Another way to think about it: As the pedal begins to come up, push your knee toward the handlebar instead of pulling your heel toward the saddle. Pull the pedal through with your knee—don’t pull it up with your heel.”**

## What You Can Do

Most riders have had the first part of LeMond’s pedaling prescription drilled into them. Greg first used the image—scraping mud off the bottom of a shoe—in his 1985 training camp. Fred Matheny wrote about it in a magazine article. Since then it has been repeated over and over, often by writers who don’t know its source.

Often neglected is the second part of LeMond’s advice—pushing the knee toward the handlebar. In fact, this suggestion works better for most riders. They have less trouble thinking about thrusting their knee forward as the pedal comes up the backside of the stroke compared to making that scraping movement across the bottom.

**DRILL! Different Strokes:** Use a safe, lightly traveled road or ride on an indoor trainer. You want to be in a medium gear and have a low cadence of about 60 rpm. It’s easier to think about your pedal stroke if you keep your cadence down. At higher rpm your feet go around too fast for your brain to keep up.

Ride for one minute, concentrating on pushing each knee forward as it comes up and across the top. Spin for another minute at higher rpm. Then repeat the slow cadence part. Alternate for 10 minutes.

Include this drill as part of your warmup each day, either indoors on the trainer or outside on the road.

Got it down pretty well? Now think about the opposite side of the stroke and whether you’re pulling through with a scraping motion to connect the downward push to the upstroke. If not, work on that using this drill.

**DRILL! One-Leg Pedaling:** This will help you eliminate the dead spots at the top and bottom of the pedal stroke. Put your bike on a resistance trainer. Warm up, then unclip one foot and rest it on a stool or hook it back over the trainer. Pedal with the other leg for one minute focusing on producing a smooth circle using LeMond’s advice. Then switch legs. Your goal is to pedal one-legged for up to 10 minutes in a moderate gear at 80-90 rpm.

# Getting an Aero Advantage

Get cheap speed with these simple aerodynamic adjustments.

## Pro

**Andrew Pruitt, Ed.D** (director of the Boulder Center for Sports Medicine in Boulder, CO, chief medical officer for the 1996 U.S. Olympic Cycling Team, author of *Andy Pruitt's Medical Guide for Cyclists*).

## Secret

**“Not many riders can afford a special time trial bike with all the aerodynamic goodies like disk wheels and special tubing. But if you want to go fast in your local time trial, you can get most of the aero advantages of a fancy bike simply by mounting an aero bar on your road bike and developing enough flexibility to use it properly.”**

**Here's the aero bar setup that Pruitt recommends:**

- Lower your stem about one inch, then bolt on the aero bar. It should be parallel to the ground or angled upward as much as 30 degrees. Decide based on comfort.
- Ideally, placement of the forearm pads will put your elbows very close together. But it's best to start with the pads wider until you are confident in how the bike handles. Then move the pads in.
- Slide your saddle forward about 1 cm and raise it slightly (2-3 mm). If you try to get a low position without moving the saddle forward, you'll create too tight an angle between your upper thighs and chest. This will inhibit breathing and cause discomfort.
- Train at least once a week using this setup so you get used to the position.

**TIP!** Work on flexibility so you can get more aero. Pruitt maintains that “if you can't touch your toes without a warm up, your hamstrings aren't flexible enough for a good aero position.”

Do some simple hamstring stretches after each ride when your muscles are warm. For example, sit on the floor with your legs spread and knees straight. Reach toward your right foot, bending to try to put your nose on your right knee. Hold for 15-20 seconds, feeling the stretch in your hamstring. Alternate right and left legs.

# Countersteering Through Corners

Want to corner better than ever? Start by forgetting nearly everything you already know.

## Pro

Davis Phinney

## Secret

**“I always cornered in the old-fashioned way: my inside knee stuck out and I sort of steered around the corner. But I’ve found a much faster and safer way to corner at speed. It’s called countersteering. It’s now the technique we teach at our cycling camps. Using this method, I can fly through corners where I used to have to slow down. It’s safer, too, because it provides more control.”**

**EXAMPLE!** “When I went to Europe to race, I thought I knew how to get around corners fast,” recalls Phinney. “After all, I was a criterium specialist and I was used to hanging it out in the last corner.

“One day in my first season in Europe, we were flying down this nasty descent in France and I was trying to catch the group ahead. I was gaining fast when suddenly I realized that I’d caught up for one simple reason. The next corner was a U turn and the group had slowed way down.

“I got partway around, locked up the brakes, and went catapulting over a stone wall into a vineyard. It took five minutes to find my bike. After that I decided I’d better think through this cornering business.”

## What You Can Do

Here’s how to turn using the countersteering method. You’ll know when it clicks by that big smile on your face.

- Start the turn by putting the outside pedal down. (The outside pedal is the right one if you’re making a left turn.)
- Stand on the pedal. Press your body weight on it. Pretend you’re trying to break it off. This will lower your center of gravity and make the bike more stable.
- Hold the handlebar in the drops.
- Move your butt to the rear of the saddle.
- Lower your torso along the top tube. Make yourself long to balance your weight along the bike’s wheelbase.
- As you enter the turn, push your inside leg against the bike’s top tube. (In our left turn example, that’s the left leg). Don’t stick it out so it’s pointing into the turn like motorcycle road racers do. Pushing your knee into the top tube will automatically turn your hips toward the outside of the turn. This makes the bike dive rapidly into the corner but in total control.

- Press your outside leg's inner thigh against the saddle, pushing the bike down and to the inside against the pressure of your weighted outside foot.
- At the same time, pull gently on the handlebar with the outside hand. Phinney used to tell riders to push with the inside hand. The new method accomplishes the same thing while taking weight off the bar and improving control.

The bike will carve smoothly around the corner. It'll lean as much as you need it to while your body remains relatively upright.

Need to adjust your line because of gravel or a wet spot? Simply relax the outside hand so you aren't pulling the bar so hard. The bike will straighten up so you can avoid the obstacle. Once past, increase your pull with the outside hand to lean the bike over again and complete the turn.

**DRILL! Crash Course in Countersteering:** Instead of learning how to countersteer during normal riding, give yourself a crash course in an empty parking lot. (Don't take us literally on that one.) Set up paper cups or traffic cones to form a slalom course. Zigzag left and right past the cups. The closer you place them, the quicker your position shifts must be—and the faster the technique will become automatic.

**TIP! Braking Away:** You can't corner fast if you don't know how rapidly you can decelerate for a corner. And that means knowing the power of your brakes. To practice, pick a sign about a hundred yards away on a straight road with no traffic. Approach the sign moderately fast (about 20 mph) and experiment with how much distance you need to stop.

Apply the front and rear brakes evenly at first. Notice, however, that the front brake delivers more stopping power because your weight shifts forward as you decelerate.

You can stop faster if you squeeze the front brake harder, but there is a risk. To make sure you don't rotate right over the handlebar, always slide your butt back. The harder you grab the front brake, the lower and more rearward your body should be.

## Group Riding Skills

Unnerved by riding in a pack? Here's how to hone your bike-handling skills and become more confident.

### Pro

**Jeanne Golay** (4-time world champion, member of the 1996 U.S. Olympic Cycling Team).

### Secret

**“Most women (men, too) who want to race or just ride in a pack are intimidated by the bike-handling demands. Once you have your basic riding skills down, find a club and**

ride with big groups. You learn by putting yourself in the pack, then trying to stay in as long as possible.”

## What You Can Do

Before you jump in, you need to know the basics of group riding: following a wheel, riding a straight line, and paceline etiquette.

There’s one more important step. You need to practice some simple, low-speed bumping drills so you’ll feel more comfortable riding in close confines. Go to a soccer field or similar grassy area with a friend. Have your helmets on.

**DRILL! Shoulder Bump:** Ride side-by-side at walking speed. Gradually move closer to your partner until you can reach out and touch his shoulder. When that feels okay, keep both hands on the bar and touch elbows. Next, touch shoulders. Keep your arms relaxed to absorb the bump before it causes your handlebar to twitch.

Finally, lean right into your partner. Press against him, then separate. As you gain confidence, bump more aggressively. Soon you’ll be able to absorb a sizeable shot with nary a flinch.

Turn this drill into a game. Can you lean on your partner hard enough or long enough to make him put a foot down? Two rules: Keep the speed low, and keep your hands on the handlebar. Head butts are legal!

Wheel contact can happen suddenly in pacelines or groups—you overlap the rear wheel of the rider just ahead and he swerves slightly. Boom! You’re down. Touching wheels is the major cause of crashes in the peloton, so it’s crucial to know how to stay up if your front wheel gets hit.

**DRILL! Wheel Tap:** Ride behind your partner, again at walking pace. Overlap his rear wheel slightly and steer so you brush against it. Don’t bang into him, just tap him. You’ll probably get knocked offline and need to put your foot down to regain balance. Try again, and this time when your wheels brush, turn slightly *into* his rear wheel. This allows you to regain balance and turn smoothly away from the contact without crashing. It sounds counterintuitive, but it works.

**TIP!** Ride a mountain bike on the dirt. Here’s the reason, from Jeanne Golay: “It’s a great training tool for bike handling. Ride on rocks and dirt and get used to your tires skidding in corners.

“I usually race mountain bikes early in the season. One year, later in the summer, in a criterium, a girl crashed right in front of me. I didn’t even think about it—I just bunnyhopped her front wheel. Jumped the bike right over her and stayed up. It was an instinctive move like being out on the trail and bunnyhopping a log. Mountain biking reinforces those instincts.”

# Part 2: Training

## Planning the Season

The ability to plan their season and stick to their plan, including recovery from hard efforts, separates successful riders from those who struggle.

### Pro

**Tyler Hamilton** (Europe-based pro road racer).

### Secret

**“Most big events aren’t until late spring or early summer, but some riders do intervals all winter. They’re ‘January champions.’ Then they hang up their bikes in June.**

**“Be patient with your training and don’t get frustrated in the spring if progress seems slow. Trust your program and realize you’ll come around when it counts.”**

## What You Can Do

**Get a coach.** Season-long planning is best done with outside help. Even the most experienced riders can get carried away by their own enthusiasm. A coach, on the other hand, will set a cold and calculating (and realistic) schedule.

**Write down your key goals.** Know what events you want to be ready to ride at your best. Then plan your year accordingly. It makes no sense, for instance, to be doing intervals in February if your big race or tour isn’t until July.

**Wear a heart monitor.** It can help prevent mistakes. In winter, for instance, keep riding intensity below 90% of max. Sure, it’s okay to open it up a bit in the off-season. But don’t do it too often and don’t twist the throttle too far. Going above your lactate threshold is almost always a mistake. For most riders, that means keeping effort below 90% of max.

## Time Budgeting

Here’s how to find the time to ride at a high level—and still hold down a job.

### Pro

**Karen Kurreck** (national and world champion time trialist).

## Secret

**“When I won the world time trial championship in 1994, I had a full-time job as a software engineer. It’s possible to train at a high level and still find time for work and family.”**

## What You Can Do

Look for small blocks of time in your schedule. Kurreck identified 5 time slots available for training during her busy day: before work, the morning commute, lunch, commuting home, and evening. She combined these slots in varied ways.

For instance, Kurreck sometimes trained at 6 a.m. If she arrived at her office a little late, she would stay late to make up for it. Or she rode 8 miles to work, trained at lunch, and rode home.

“If you can find several one-hour blocks in your day,” she says, “you can do double workouts and improve.”

Quality is more important than quantity. When time is limited, increase intensity.

Kurreck based her training around twice-weekly evening criteriums at the local community college. The secret, she says, is to “warm up, do the training, and cool down—no wasted time.”

It also helps to be a fast changer. Kurreck says she can shower and change from riding clothes to work clothes in less than 5 minutes.

Be just as efficient at your job to protect riding opportunities. “You need to get your work done in less time than your colleagues,” Kurreck says.

**TIP!** Weight training increases workout opportunities. You can lift when you can’t ride—when it’s dark or too cold or wet to get on the bike. Karen Kurreck lifts for 4 months during the winter and early spring. Her riding performance suffers while she’s doing squats and leg presses (“I ride terribly while doing leg work in the weight room—my legs are shot!”) but the added strength pays off in the season.

## The 10-Hour Training Week

Here’s another champion’s take on using time to best advantage.

## Pro

**Connie Carpenter Phinney** (winner of the first Olympic road race for women).



## Secret

“Ten hours of training per week is a magic number for most serious recreational riders. If you can train for 10 hours during every 7-day period, you’ll realize most of your genetic potential. It’s not necessary to put in the 20 to 30 hours a week like pro riders.

“That’s a good thing because who has the time? With 10 hours each week, you’ll have room in the training schedule for some quality work and also some easy riding for recovery. It isn’t easy to fit even 10 hours into most riders’ hectic schedules, but it can be done.”

## What You Can Do

Here’s a sample week’s schedule based on Carpenter Phinney’s recommendations. We’re assuming that you work a normal 9-5 job on weekdays and have some time to ride on weekends.

**Monday:** Rest day. Stay off the bike at least one day a week to help recovery. You might want to keep blood circulating with some light upper-body weight training or an easy walk.

**Tuesday:** Ride 90 minutes. After a warm up, do 5 to 10 sprints, or a short training time trial, or short intervals at a heart rate around 90% of your max.

**Wednesday:** Ride 2 hours with the emphasis on endurance. Heart rate shouldn’t go above about 85% of max.

**TIP!** If you’re pressed for time, split 2 hours of training into a couple of rides. For instance, go hard for an hour in the morning, maybe on the trainer or on the commute to work. Then pedal easily after work or in the evening to promote recovery.

**Thursday:** Ride 90 minutes. Ideally this can be a group ride or training race in the evening.

**Friday:** One hour easy with a friend or spouse. Finish up with a short weight training session.

**Saturday:** One hour easy. This is another recovery day. A short ride leaves time for home chores and family responsibilities.

**Sunday:** Ride 3 hours. Race, do an endurance ride, or go out with a spirited group. This is the day to reap the benefits of your improved fitness.

## The Key to Lance’s Training

Want to ride like Lance Armstrong? Sorry, there’s no secret that’ll make that happen. But to get a little closer, improve your ability to ride at your lactate threshold.

## Pro

**Chris Carmichael** (coach to Lance Armstrong and many other riders through [Carmichael Training Systems, Inc.](#)).

## Secret

**“Power isn’t the issue. Anyone can produce 400 watts for a few seconds. However, most riders can’t produce 400 watts for very long without going anaerobic and slowing abruptly.**

**“What’s key is the ability to produce significant power while remaining under your lactate threshold (LT) and in control. All of Lance’s training revolved around raising his power at LT.**

**“The secret is to do most of your hard training a little below, at, or slightly above your lactate threshold.”**

## What You Can Do

First, a little background. Most training programs are complicated because pro cycling requires a vast range of seemingly conflicting abilities—the endurance to ride 150 miles, the speed to win 40-mph sprints, and the aerobic capacity to time trial at more than 30 mph.

Training these diverse skills is like asking a champion marathoner to also win the 100-meter sprint. Or an NFL quarterback to play defensive tackle, too.

Despite this, Carmichael’s training philosophy is extremely simple. He distills the sport to one skill, the ability to produce great power at lactate threshold.

Basically, LT is the maximum intensity a rider can sustain for 30 to 60 minutes. It’s usually measured in watts.

According to Carmichael, Armstrong’s power at LT improved steadily over his career from about 340 watts in 1993 to more than 400 watts by 2001. (For comparison, the average age-group bike racer generates about 220 watts at LT.)

**EXAMPLE!** Why is power at LT so important? Suppose a rider named Mick generates 300 watts at LT while his rival, Rod, puts out 250. On a race’s early hills, Mick pushes the pace at an effort equal to 280 watts. He’s still under his LT, riding hard but in control. To keep up, Rod has to go over his LT and into oxygen debt. On the last and deciding climb, guess which rider will still have something left.

About now, you’re probably interested in knowing your lactate threshold. It can be determined by an expensive lab test, but there’s a simpler way. Notice we didn’t say easier.

First, it helps to have a heart monitor with an average heart rate function. Try to borrow one if your model doesn’t have this feature. You can use a non-averaging monitor, but you’ll have to watch it as you ride and estimate its average reading during the test. This won’t be as accurate.

Warm up thoroughly, then ride for 30 minutes as hard as you can without bogging down and slowing markedly in the last 10 minutes. It's better to start a notch easier, then pick up the intensity in the last half.

Your average heart rate for the 30 minutes will be a close approximation of your LT.

**DRILLS!** Here are four workouts that will boost your LT. Remember to warm up well for at least 15 minutes. Wear a heart rate monitor to regulate your effort.

### **1. Time Trial Special**

Ride from 20 to 30 minutes at an average heart rate about 10 beats below your LT.

### **2. Ten Twice**

Ride for 10 minutes at an average heart rate of about 5 beats below LT. Spin gently for 5 minutes to recover, then repeat the 10-minute hard effort.

### **3. Hill Repeats**

Find a hill that's 3 to 5 minutes long. Climb it at your LT heart rate. U turn, coast to the bottom, spin gently for 5 minutes to recover, then repeat as many as 5 times (depending on your fitness level).

### **4. Grinders**

Find a longer hill that takes 10 to 30 minutes. Climb it steadily at your LT. Use a gear that allows you to maintain a cadence of 80 to 90 rpm.

Do these workouts and you'll be as fast as Lance was.

*Just kidding!*

**CAUTION!** LT training can be hazardous to your health! To make sure you improve rather than disintegrate, obey these rules:

- Get your physician's permission before you undertake this or any other strenuous training.
- To avoid overtraining, do most LT workouts at a heart rate 3-5 beats below your lactate threshold.
- Do no more than two LT workouts per week, separated by at least two days of light riding or rest.
- After three weeks of LT workouts, ride easily for an additional week to let your body recover and consolidate the gains.

- Don't do LT training all year. After 8 weeks (2 cycles of 3 weeks on, 1 week off), spend a month doing rides that keep you about 30 beats below LT to build your endurance.

**TIP!** Re-test your LT every 6 to 8 weeks during the season. As you improve, the heart rate you can maintain at LT increases as expressed as a percentage of your maximum heart rate. Top time trialists like Armstrong can ride for an hour at 90-93% of their max.

## Modern Pro Training

If you want to ride like a pro, train like a pro. Here's how to utilize their methods without their time commitment.

### Pro

**Massimo Testa, M.D.** (physician for the 7-Eleven and Motorola cycling teams).

### Secret

**“Twenty years ago, pro cyclists took two months off the bike after the season, trained easily in the winter, and then raced into shape. Now riders take only two weeks of easy riding as a break and have 8,000 miles in their legs before the first race in February.**

**“Slow endurance rides have been abandoned. Even long training rides are done at only 25 beats per minute below lactate threshold.”**

## What You Can Do

You aren't going to do 8,000 miles before your first big event. Only pros have the time and financial motivation to do that. Only you can decide how much time and enthusiasm you have for riding.

Testa's observations highlight two crucial points that are as valid for recreational riders as for pros: consistency and intensity.

- Don't take extended time off the bike.
- Ride briskly unless you're out for a recovery ride.
- Throw in some efforts near your lactate threshold, even in the winter.

# Training With Weights

## Pro

**Massimo Testa, M.D.**

## Secret

**“Modern pros are lifting because they’re going at speeds unimaginable 15 years ago. A top sprinter like Mario Cipollini can sprint in a 54x11-tooth gear at 45 miles per hour. He’s like a motorcycle.**

**“We suggest that pros use light weights—about 60 percent of the one-rep maximum in a given exercise—and do 50 to 60 reps with short rests between sets.”**

## What You Can Do

Hit the weight room, not only in winter but all year round. Focus on the sort of moderate-resistance, high-repetition work that Testa suggests, especially for your legs.

One big advantage of this program: You’re forced to use light weights so your chance of injury is lessened.

**CAUTION!** If you lack weight training experience, get educated advice on the best exercises for cyclists and the way to do them. Consult a licensed cycling coach or a trainer certified by the National Strength and Conditioning Association. Most roadies can stop leg exercises during the cycling season when they’re riding hard miles.

# Speedwork for Everyone

Want to improve your cruising pace? Add speedwork to your diet of steady rides and commuting.

## Pro

**Pete Penseyres** (Race Across America winner, multi-time masters national road champion).

## Secret

**“When I first rode RAAM, I thought I needed a lot of miles. So I commuted 40 miles to work, rode 60 or 70 miles on the way home, and did a double century on both Saturday and Sunday—all at a steady pace.**

**“But I added speedwork three years later before I set the average speed record for RAAM (15.4 mph). Each week I did two 35-mile training races and a short team time trial.**

**“Speedwork was only about 10 percent of my total riding time but it was the most important part. Getting faster for short distances enabled me to ride faster for long distances. It raised my average cruising speed one to two miles per hour.”**

## What You Can Do

Most cyclists ride at the same pace most of the time. You know how it works—you get into a nice rhythm and just keep cranking. It feels good. It isn't too easy or too hard.

Of course, there's nothing wrong with enjoying your ride. But if you want to improve you have to occasionally force your body to go faster.

Fortunately, it doesn't require extreme pain or clenched-teeth dedication to bump up your effort a couple of times a week. Here are 3 painless (well, almost painless) ways to fit speed into your usual rides.

**1. Time trial.** Scout out a clear stretch of road with no traffic control devices and few crossroads. Ideally, the course will be about 5 miles long and either gradually uphill or into the prevailing wind.

Warm up with at least 15 minutes of progressively harder pedaling. Then ride the course at your lactate threshold. Cool down by cruising home. That's it.

**2. Ride in a fast paceline.** Spirited paceline riding is like interval training. You push your heart rate to LT or a bit higher every time you're on the front. While you're sitting in, your heart rate drops slightly. For best results, limit the group to 5 riders so you get to the front often enough to improve.

**3. Climb.** If possible in your area, ride a hill that's 10 to 15 minutes long twice a week. Climbing hard will automatically bump your effort to LT. Also, a hard effort is easier to maintain when you're climbing compared to riding on the flats.

## Alternative to Heart Rate Training

Do you need a heart rate monitor to guide your training? Not if you listen to this experienced and opinionated coach.

### Pro

**Dean Golich** (coach of world champion time trialist Mari Holden)

### Secret

**“You don't need a heart monitor. There's little correlation between heart rate and power output.**

**“When you do intervals, just go as hard as you can for the duration of the interval. If you're doing a five-minute interval, start it flat-out and hang on as long as you can. As you get tired, your speed will decrease but your effort won't. Soon you'll find that you can maintain a high speed longer.**

**“Look at it this way: If you never go 30 miles per hour, you'll never go 30 miles per hour. Sure, this type of training is hard. But so is racing.”**

## What You Can Do

Heart monitors are useful for many types of training. They provide an accurate measure of your LT heart rate. They keep you from going too hard on easy days.

But when you do intervals from 30 seconds to about 5 minutes in duration, Golich's heretical recommendation makes sense. Hard training will boost you past a performance plateau and raise your ability to suffer to new levels.

Golich's training approach is simple:

Go as hard as you can for the duration of the interval. When your cadence slows in the middle of the effort—and if you're doing this right, it will—simply shift to an easier gear and keep the effort high.

Limit yourself to 1 or 2 all-out efforts the first time you try it Golich's way. Assess how your body is recovering. Add one effort per workout per week. Remember, this is high-risk training.

**CAUTION!** Make sure to have a solid aerobic base of at least 8 weeks of steady rides before you attempt coach Dean Golich's "as hard as you can" training. Use gears that let you keep your cadence above 90 rpm to save your knees. Monitor your enthusiasm for this or any interval training program. If you experience overtraining symptoms including poor performance, apathy, irritability or insomnia, take some time off. When you resume, reduce the intensity and duration of your interval workouts. Find the level that improves your performance while avoiding negative consequences.

## Block Training

Here's a different take on traditional hard day/easy day training plans.

### Pro

Dean Golich

### Secret

**"Most coaches say to go hard one day and go easy the next. They argue that you need alternated easy days to recover.**

**"But I like 'block training' where my athletes go as hard as they can for three or four days in a row. Then they go easy or rest for as many days as it takes to recover—usually another three or four days—before they repeat the hard block.**

**"Pro racers go all-out for three weeks in a row in the Tour de France. If they rest properly after the Tour, they're flying."**

## What You Can Do

Block training works great for time-challenged riders who are bent on improvement. For example:

- Go hard and long on the two weekend days when you have time.
- Continue with hard-but-short rides on Monday and perhaps Tuesday when you're busy with work and family. Within an hour you can warm up, do 5 intervals of 5 minutes each with 2 minutes recovery, and cool down.
- Do easy rides for recovery or take rest days during the remainder of the week.

Golich's program has a firm scientific foundation.

In a study done at the University of Wyoming, 8 well-trained cyclists were subjected to 3 weeks of hard training, including 8 maximum-effort interval sessions, a sprint workout, and a 5-minute all-out test. Cycling performance improved significantly during training and increased even more after 2 weeks of recovery.

**TIP!** Block training could easily be a recipe for overtraining and chronic fatigue. So remember this: The key isn't the repeated hard days but rather the rest in between the blocks of effort. Be sure to allow enough time to fully recover. Your head will tell you when you're ready to go again. If you haven't regained your enthusiasm for hard efforts, spin easily until the juice returns.

## Developing Greater Power

Power development is the key to superior riding. Here's how to maximize your wattage.

**Pro**

**Chris Carmichael**

**Secret**

**“Power is best developed at high cadence—100 to 130 rpm for most riders.**

**“Because power is defined as work over time, riding up a hill in a big gear at 50 rpm doesn't develop power. It develops strength.**

**“You need to develop great strength with low cadence work, then add power by doing intervals at a high cadence.”**

## What You Can Do

Lance Armstrong's 2000 Tour de France victory was notable for many reasons. A second consecutive win after recovering from cancer was certainly huge.



For cycling coaches, however, the truly groundbreaking development was Armstrong's extremely high cadence on climbs and in time trials. While other riders were grinding up the hills at 70 or 80 rpm, Armstrong was turning the cranks smoothly at around 100—and using a correspondingly lower gear.

The French call it *souplesse*—the ability to pedal smoothly and rapidly. It's the key to powerful riding.

Why? Pedaling faster means your leg muscles do less work on each pedal stroke. Sure, each leg goes around the pedal circle more often (due to the higher cadence), but the muscular tension on each stroke is reduced. The effort is passed along to your cardiovascular system (you pant more) while your leg muscles are saved for later in the ride or race when you need a surge of speed.

The classic method of developing fast-pedaling power is to build a strength base with hard efforts at low rpm, then gradually move to faster-rpm intervals.

Here are two workouts that'll do the trick.

**1. Power Builder:** Find a moderate hill that takes about 30 seconds to climb. After a thorough warm up, sprint 3 times up the hill. Sprint out of the saddle, or alternate one sprint standing with the next sitting.

- Do the first sprint in a gear that allows a cadence of 100+ rpm. Make a maximum effort. Spin gently for 5 minutes to recover.
- Do the second sprint in a bigger gear so your cadence drops to about 90 rpm. Spin for 5 minutes to recover.
- For the last sprint, use an even larger gear that limits your cadence to 70-80 rpm. Keep pedaling smoothly even when cadence falls. Don't degenerate into pedaling squares.

**2. Power Extender:** Find a gentle climb about a mile long. The road should have no traffic control devices and little traffic.

- Ride for 2 minutes at your lactate threshold or slightly higher. Keep your cadence at 100-120 rpm. You'll probably need a lower gear than you'd normally use on this hill. Gearing doesn't matter. Cadence does.
- Repeat the 2-minute climb 3 to 5 times. Do 5 minutes of easy spinning between each effort.

**CAUTION!** Don't do low-cadence sprints if you have knee trouble. Be sure you have a good aerobic base before attempting these hard efforts. Do these drills no more than twice a week and only for 3 weeks in a row. After 3 weeks, take an easy week to recover.

# The Importance of Rest

## Pro

**Wolfram Lindner** (former East German cycling coach, now mentoring the German pro team called Team Coast).

## Secret

**“Olaf Ludwig (top East German amateur who went on to a stellar pro career) rode 26,000 miles during the 12 months before his Olympic road race victory. When you train as intensely as we did, you have to rest just as hard.**

**“ We went to Mexico for six weeks of altitude training. When we got back, my boss in East Germany looked at all the rest days and said we could have saved money by only staying four weeks. He didn’t understand the need for rest.”**

## What You Can Do

Pro riders and coaches have said it many ways in the tips recorded in this book: Rest and recovery are as essential as work.

Hard training is only half the equation. Without rest to allow the body to recover and get stronger, those tough workouts are only so much wasted sweat.

If you’re not getting better despite your dedication to training, you’re probably a victim of insufficient rest. Make sure to follow these rules for recovery:

- Take at least one day per week completely off the bike.
- Most riders improve maximally if they train hard 3 days per week and ride slow and easy 3 days.
- Some (not many) riders can get away with 4 hard days per week. But it’s dangerous to maintain this schedule for more than a month.
- As you get older, you recover more slowly. Riders over 45 or 50 often do best by riding hard only twice a week and taking two days off the bike.
- Don’t try to be superhuman. You’ll improve faster—and have more fun—if you’re rested and eager for hard training, group rides, or races.

**TIP!** During training, work on your shortcomings but don’t forget your strong points. As coach Wolfram Lindner puts it, “We work extensively on riders’ strengths and also try to improve their weaknesses. But never spend so much time on your weaknesses that you lose your strengths.

“For instance, we had a great sprinter who suffered with the fourth group on climbs. He worked all winter on climbing. When racing began he could climb with the third group. But he could no longer sprint well.”

**CAUTION!** Overtraining is a constant threat when you're in a regular training program. Here's an interesting warning sign from Dr. Massimo Testa:

“Sweat that smells like ammonia is a signal that you're overtrained, glycogen-depleted, and destroying muscle cells as you ride. It indicates catabolism and means you aren't respecting your need for rest.”

When you shower after a ride, be aware of the odor as the first spray of water hits your body. If you catch a whiff of ammonia, take an easy week. Be sure you're eating enough carbohydrate to fuel your training.

## Ride Rollers for Recovery

Improve your recovery with a technique used by the powerhouse East German cycling teams of the 1980s.

**Pro**

**Wolfram Lindner**

**Secret**

**“To promote recovery, our cyclists ride rollers for 15 minutes before breakfast and another 15 minutes in the evening. They don't go hard—they just spin easily.**

**“The idea is to get the blood flowing, which will flush out the toxins from the day's hard training.”**

### What You Can Do

Rollers are viewed as old fashioned. Modern indoor trainers provide more resistance and don't make you balance. You can go as hard as you want without toppling over when your poor oxygen-deprived brain cells cease to function properly.

But rollers have a big advantage for recovery rides compared to most indoor trainers: You don't need to work hard while pedaling. (Well, that's true for rollers with large-diameter drums. Models with drums the size of rolling pins generate more resistance.)

- Go easy! The purpose of these short spin sessions is to help your legs recover, not to subject them to yet more work.
- Be sure you're well hydrated. Hydration is crucial to recovery. Have a bottle of water or sports drink on your bike and take big swigs frequently.

No rollers? You can probably get the same zero-resistance benefit by using your trainer at its easiest setting and putting your bike in low gear.

# On-Bike Recovery

Pro

Tyler Hamilton

Secret

**“Most riders who race or do a hard group ride on Sunday take Monday off the bike. But you’ll recover faster if you ride for an hour extremely slowly. You shouldn’t feel any pressure on the pedals—just spin your legs.**

**“Here’s another trick: After a hard weekend of riding, do several days of recovery rides but throw in a couple of sprints. Just do 10 seconds at about 80 percent effort. If you get your legs to burn a little, you’ll come around faster.”**

## What You Can Do

Riding slowly is as much of an art as riding fast.

Serious riders equate going fast with having fun. Riding slowly—on purpose—is a foreign concept. But Hamilton and other pros have to ride hard in as many as 100 races a year, so when they get an excuse to go slow they enjoy the ride.

Remember this and do your slow rides guilt-free.

**EXAMPLE!** In 1995, RBR’s Fred Matheny rode with Tyler Hamilton and other members of the U.S. National Cycling Team during their altitude camp in Winter Park, Colorado. Fred remembers: “On the first day, coach Chris Carmichael told his charges to ride 25 miles slowly. I expected that these elite riders’ idea of a slow pace would make this old cycling writer work hard. I was wrong. They tooted along talking and even my heart monitor didn’t go above 120.”

Follow these tips to make sure you ride slow enough:

- Wear a heart monitor on recovery rides and don’t let it exceed 65% of your max. Skip Hamilton (no relation to Tyler) instructs the riders he coaches to go “guilt-producingly slow” on their easy days.
- Build up the desire to go fast. Don’t squander your energy and enthusiasm. Save it for those days your training plan calls for intensity.
- Search out flat roads so you aren’t forced to strain on hills. If you don’t have flat terrain, install a bigger low-gear cog so you can spin up hills with less resistance.
- Ride bike paths to keep your speed and effort down.
- Ride with a slower companion—your significant other is often a good choice. Spin along and talk, gaze at the flowers, concentrate on not breaking a sweat. Little kids on BMX bikes, riding on the sidewalk, should zoom past you.

- Avoid group rides. Even if the group has agreed to go slow, competitive urges often causes the pace to increase to the point where you're riding too hard for recovery.

## How NOT to Lose Weight

Here are 3 ways that pro roadies get lean. Whatever you do, *don't* try them.

### Pro

Actually, no pro rider or team physician we've ever talked with would tell the specifics of how modern pros achieve their low bodyweights.

### What You *Shouldn't* Do

Northern European riders of the 1970s and early '80s were often big, muscular (and maybe a little fat). They felt that size was an advantage when riding rough cobbles or fighting for position in a nasty Belgian crosswind.

Also, sports nutrition was in its infancy. Fatty foods, beer, and pastry were staples of many pros' diets.

That's all changed. Now, pro road racers make a fetish out of light body weight. The reason is the increased pace on climbs where it pays to have a favorable power-to-weight ratio.

The best cyclist of all time, Eddy Merckx, told us: "When I rode, only a few riders could force the pace on climbs. Now there are 50 riders who can climb in the big ring."

**EXAMPLE!** Five-time Tour de France winner Miguel Indurain of Spain started racing at 196 pounds. Always a fearsome time trialist, when he trimmed down to 172 pounds he developed the ability to climb with the best.

**EXAMPLE!** Italy's Andrea Tafi came close in classics like Paris-Roubaix at 176 pounds and 8% body fat. Then when he slimmed down to 154 pounds and less than 4%, he won four major races in four weeks.

Perhaps the most famous example of weight paring is Lance Armstrong who told in his book, *It's Not About the Bike*, that he weighs his food before he eats so he can closely monitor his caloric intake and energy output.

Armstrong cuts weight responsibly, careful not to incur too large a caloric deficit each day.

Unfortunately, some pro riders use potentially dangerous methods of weight control. Although we couldn't get pros or team personnel to talk on the record, we've pieced together these methods many pros use to get gaunt.

**CAUTION!** Don't use these techniques! We're listing them to show their dangers. A balanced program of diet and exercise is the best method of reaching your ideal cycling weight.

**1. Bypass dinner.** Eat a big breakfast, ride 5 to 7 hours while consuming only a carbo drink, and eat a high-carbo meal in mid afternoon after the ride. Then eat nothing until the next morning. In theory, the body stores fat at night. Skipping dinner forces your body to burn fat while you sleep instead of store it.

**Danger!** If you don't eat dinner, your body goes 14 hours or more without food. The resulting lowered glycogen stores can compromise your training in subsequent days. You may also wake up hungry in the night, disrupting the rest you need.

**2. Ride before breakfast.** Ride 3 to 4 hours before breakfast while consuming only water. The idea is to force your body to use fat stores for energy during the ride after you've already "fasted" for 12 hours overnight.

**Danger!** Riding on empty can lead to severe cases of the bonk (running out of glycogen stores during a ride). Some coaches maintain that when you bonk you severely injure your body and must ride easy for at least a week.

**3. Starve yourself.** Consume about 1,000 calories per day less than needed to meet the energy demands of training. Use diet drugs to suppress appetite.

**Danger!** Diet drugs can be addictive and have serious, even lethal, side effects. Stay away!

