

Dancing on Your Bike

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Does your back ache after climbing? Do you dread climbing hills? Do your hill climbs feel like they turn into a "leg press session" at the gym? Would you like to make climbing less of a chore and more of a joy? We'll, I suggest you learn to dance with your bike.

This article is intended to share the techniques I use for climbing that have been successful for myself and others. It all really started after a long hiatus from cycling and considering how to re-develop my pedaling stroke for more power while still protecting my lower back. It's all about lift and proper cadence.

If you visualize your pedaling stroke as *pushing* and *pulling* motions, when climbing a grade I put most of my effort into the pull or lifting portion of the stroke for several reasons.

1. Pushing hard while sitting or, *mashing* while standing, puts strain on the lower back.
2. Standing (*in the correct gear*) allows momentum and my body weight (or gravity) to complete the down stroke with minimal effort on my part.
3. Standing properly during a climb (*using a pull & lift stroke*) can be more powerful and efficient than sitting, once you've invested the time to develop it.
4. Climbing out of the saddle allows my back and legs to be more in line to the same vertical plane where I can generate power without compromising my back.
5. By developing the muscles for lifting and pulling, I can "rest" certain muscles for pushing on the downhill or flats.

If you've been cycling for some time, I'm sure it's probably second nature for you to push *and* pull, making those "perfect" circular strokes. In reality, most cyclist probably exert more effort pushing than they do pulling through their stroke. (*Example: You may actually be pushing twice as hard as you pull, we'll say 2:1 ratio for sake of comparison*) This would lead me to believe there's some potential unused power in those legs to tap into.

If the "push" stroke is your default on the flats, then you probably depend on it even more when climbing, which may also explain why most people hate hills and are poor at ascending them. In my opinion, the key to hill climbing is executing your stroke so that your pulling *or lifting* with twice the effort you use to push. Sound a little strange? Well, having incorporated this in my own climbing, I now understand how those top riders "dance" up the mountains and do it for extended periods of time.

If you remember when you first became truly cleated to your pedals, it was like taking your "4 cylinder engine" and turning it into a v6. We'll if you fully develop the pull *and* lift stroke, I think it's more like turning your engine into a v8!

Gear selection, to maintain an optimal resistance, is the 2nd key to obtaining a good pull *and* lift stroke out of the saddle. You want enough resistance to maintain a cadence that isn't running away from you, requiring you to lift with medium effort, yet not be so difficult that you are laboring which may tempt you to return to pedal *mashing*. By example, a car engine may redline at 5000 RPM, yet the torque curve shows it's best power is produced at 3600 RPM, where it can stay all day long. That's what we want to do on the bike, so start by selecting

gears which keep you at a cadence of 80 to 95, using medium effort. This effort can always be increased as your stroke develops and stamina increases.

I have no scientific proof for this, but another observation I've made is; If I'm in a good lifting rhythm, I feel like the bike is "lighter" and that my efforts are going right into the drive train, making it easier to accelerate. At the same speed but just pedal "mashing," it feels like part of my weight and power is being driven down into the asphalt, which then makes the bike seem "heavier," especially if I'm sitting. (*Just listen to the tires when you mash up a hill, rocking the bike side to side.*) Now that could all be perception, but I suspect there's some truth to it.

Probably the only way this enhanced pedaling stroke will make a dramatic change in one's cycling or climbing is to **re-train** your stroke and the way I suggest doing that is to over-emphasize the new pull *and* lift stroke during all of your normal cycling for at least a month. By then, it will have become "second nature" to push and pull more equally *and* developed enough to do you some good on the climbs. I started by developing it first on the flats, sitting (not standing) and as often as I could, focus just on pulling from the 4 o'clock position up through the 11 o'clock position or top of the stroke. It's like scraping mud off the bottom of your shoe and continuing with a knee lift.

Don't trash the exercise if you find your power fading after 20 minutes of this because you are now using your quads and hams differently and it will take time to see the full potential. Emphasize the new stroke on and off throughout your normal workouts until you can build up to going an hour or more using **twice the effort** to pull *and* lift as you do to push. Once you've developed those pulling muscles, say 2 to 3 weeks, you'll be ready to see how dramatic the change is in dancing up the climb.

This will be another challenge for those who typically sit after 45 seconds of standing. When I climb, I am out of the saddle the majority of the time, up to 15 minutes. My body is positioned up over the bars so that approximately 50% of my weight is supported by my arms. I also have my hips slightly forward toward the bars in an effort to have my back and legs in somewhat the same plane, in other words, minimize bending over at the waist. (*It will be closer to a 15 degree bend instead of 45+*)

While the standing position I just described may sound very basic, I've observed that when many riders come out of the saddle, they'll have a 45+ degree bend at the waist, improperly supporting the back, while the majority of their weight is still being supported by their legs. This improper standing position **does not** lend itself to a good lifting stroke, so you'll probably still be *mashing* the pedals down (by default) to keep yourself moving up the grade.

Out of the saddle, don't be over zealous about pointing your toes down as you'll be giving up the full power of the pull *and* lift. If you visualize pulling *and* lifting from the ball of your foot, it will be more effective with your heel down, just slightly higher than the ball of your foot... how much is personal preference.

Standing, you'll be pulling up at the bottom of the stroke (6 o'clock) which is later than the sitting stroke, but the **lift** portion should have your greatest effort from the 8 o'clock position on over the top, to possibly the 1 o'clock position. Again, this sounds like stroke basics 101, but many people don't work the full lift, *especially with purpose*. (*I think of lifting or driving the knee upward and at times, my lower quad will lightly touch the bottom of the handle bars*) Of course the other leg is already starting its pull as the lift is finishing, leaving you with balanced effort in the drive train. As a reminder, I am letting my body weight perform *most* of the push side of the stroke with minimal or no effort on my part.

(Technically speaking, the force of the lift stroke is what helps complete the down stroke. Because you are "standing," you'll also be naturally pushing at the very bottom of the down stroke, which gives a kick-start to your lift!)

If you keep your "engine" in the optimum power zone by selecting the appropriate gears when needed, you can maintain this dance up the climb for a very long time without even breathing hard. Which reminds me, the 3rd key to success is reading the grade or terrain and anticipating the gears *in advance*, especially at the start of a climb. Don't wait until you've bogged down to stand or you may never regain the rhythm. *For training purposes*, even if you know you can't make the whole climb standing, *begin* standing from the start (*in the correct gear*) and go as long as you possibly can to make good use of that momentum and rhythm. If you have to sit at some point, it will give you a goal to pass the next time you're there. While out of the saddle on a long climb, make sure you down-shift as needed, maintaining the proper cadence. You may even need to "up-shift" for more resistance if the grade lessens or becomes easier at some point in order to avoid spinning. It's all about dancing with optimum rhythm and resistance.

The 4th key is breathe slow. During training, discipline yourself to take a **long**, smooth inhale and naturally exhale. Your legs may be doing 90, but breathe like your cadence is 60. During this development period, your climbing speed may actually be slower than normal, but resist reverting back to "mash climbing." Once you've properly strengthened those legs with the new stroke, you'll find yourself sprinting up those hills in no time.

I've emphasized standing through an entire hill or climb for the purpose of developing those muscles used in the lifting stroke. So for training, I would stand and **lift** on every possible rise, as long as you can. Once you've developed this style of climbing, use it strategically to your advantage in a race or on club rides. I personally like to take the first third of a long ascent sitting while incorporating the pull *and* lift stroke that we used to train on the flats. (*Twice the effort on pull vs. push*) For the remainder of that climb, I prefer to be out of the saddle, dancing away.

One final note, once you've fully developed the pull *and* lift part of your stroke, you should find it easier to obtain a *truly* equal push / pull stroke on the flats *and* riding longer with the same effort.

Well, that's certainly enough for now. I hope this gave you some food (*or training*) for thought.

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