

# Are You a Masher or a Spinner?

This article builds on the previous article, “When Stronger Isn’t Faster”. If you haven’t read that yet, please read that first, then read this article. It can be found on [www.CyclingUpdate.com](http://www.CyclingUpdate.com)

As mentioned in the last article, power is defined as the rate at which work is done, or Work/Time. There are two ways to increase power on the bike. One is to increase the amount of work done in a given time period – e.g. to push a bigger gear at a constant cadence. The other is to do the same work faster – e.g. spin the same gear faster. Of course, you could try to combine the two and spin a larger gear faster to increase power. Successful cyclists use different combinations of gears and cadence to create their power. There is no difference more dramatic than between Jan Ullrich and Lance Armstrong. Jan pushed a big gear slowly and Lance spun a lower gear faster. Both were very successful and almost evenly matched. People who churn large gears more slowly are sometimes called ‘gear mashers’ while those who spin more quickly are called ‘spinners’. After Lance’s great success with his ultra high cadence, which is much faster than those of most of his pro competitors, many people began mimicking Lance’s high cadence and many coaches advocated spinning drills to increase everyone’s cadence to be more like Lance. But is that the right thing to do? I don’t believe so. Trying to mimic someone else probably won’t work for you unless you are built just like them. Lance has an extremely high aerobic capacity which allows him to spin fast but doesn’t have the leg strength to be a masher.

I believe that cadence is a very individual thing. Long before Lance came along we were already riding at our self-selected cadences. Our self-selected cadence is likely the most efficient for each of us. Our optimal cadence is likely a function of our muscle makeup and our aerobic system. Those of us who tend to pedal at lower cadences have to put out more force per pedal stroke than those who spin faster in a lower gear. Spinners need a well developed aerobic system to support the aerobic demand of high cadence spinning. Mashers need more leg strength to develop the force needed to turn a big gear. The cadence you use is dependent on your muscle makeup. I have a theory, and only observational evidence, hence it’s only a theory but here it is. Cyclists with larger leg muscles tend to pedal at lower cadences. The exceptions to this are track cyclists – they have huge leg muscles but also spin very quickly but they only do so for short periods of time. I’m referring to road cyclists here. There may be a couple of explanations for my theory. First, cyclists with larger muscles are likely capable of generating more force and therefore are able to turn larger gears and are comfortable doing so. Cyclists with thin leg muscles may not be able to generate the force to turn large gears so they resort to spinning faster with less force per pedal stroke. The other explanation may be that those who have trained for years at lower cadences may tend to develop larger muscles from all the strength they’ve needed to generate from all those years of pushing big gears, although I doubt this is the case. Most likely it has to do with the muscle makeup and the amount of fast twitch and slow twitch fibers which is genetically determined.

So back to my point – I believe cyclists have an optimal pedal cadence which is dependent on their own physiology, most likely their muscle physiology. I don’t believe you should try to force yourself to become a spinner if you tend to be a masher or vice versa. If you are reading this article, chances are you are already a pretty successful cyclist so you have the combination of strength and spinning to ride a bike quickly. My self-selected cadence is 84 and if the pace picks up in a paceline

or race when I am at my limit, the only way I can keep up is to shift to a larger gear and crank out a larger gear. My cadence may actually decrease as I speed up to keep up. If I try spinning faster in the same gear I will get dropped. So try as I may, I will never be a true spinner. Now that doesn't mean I shouldn't work at improving my spinning ability. As a masher, one of the best ways to increase my power is to learn to spin large gears faster. Likewise, if you are a spinner, developing more leg strength will enable you to push a larger gear while still spinning at your high RPMs. But don't turn away from your natural tendency completely, rather complement it by training the other capability (strength or leg speed) to enhance your power-producing ability. As the saying goes, train your weaknesses and race your strengths. If you are a masher, work on spinning in training but when push comes to shove in a race, push whatever gear you need to.

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Ride on -- David Ertl

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