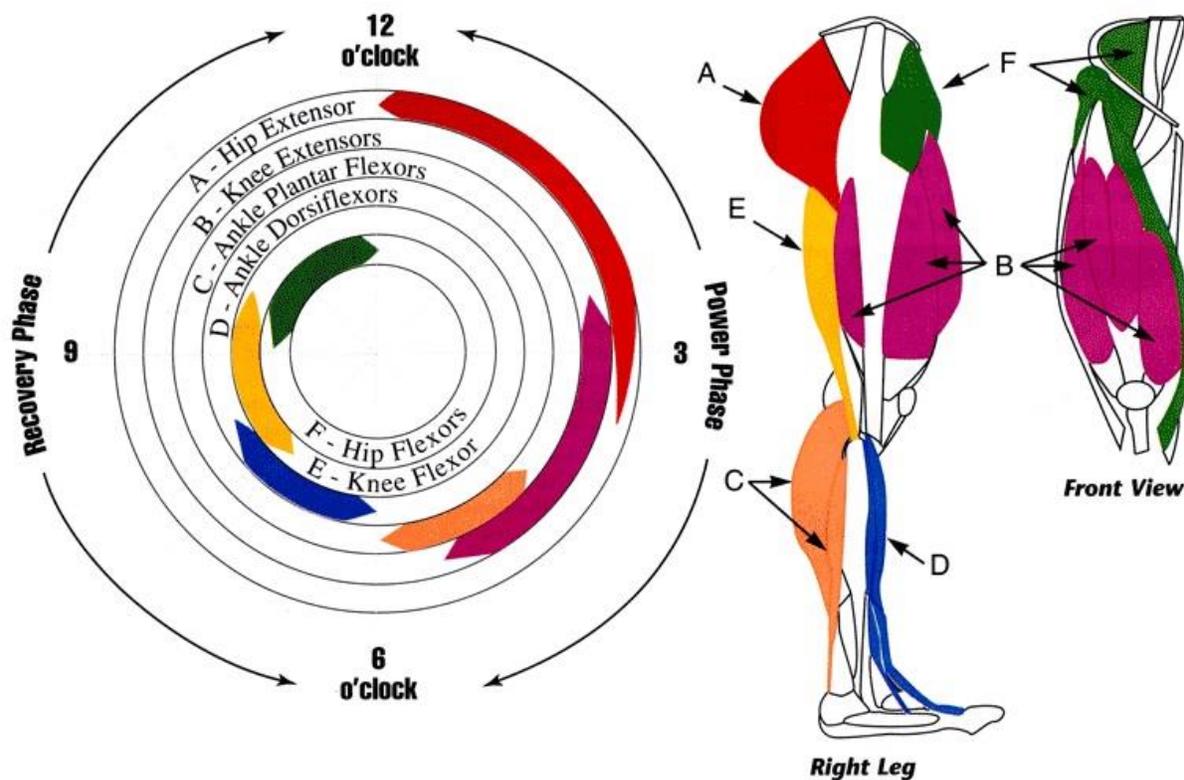


TTIPS Vol. 2/22 – Techniques and Insights  
The Muscles You Use During Cycling\*

Thursday, I went for an afternoon ride from my house through Old Town Bluffton, and back home. The weather was perfect, and I was feeling good on the return ride. On the spur of the moment, I decided to stop and get a bottle of Tequila so that I could whip up a couple of frozen Margaritas before dinner. I bought the bottle and put it into my bottle cage for safekeeping for the remainder of my ride home. As I clipped in I thought, you know, if I fall the bottle will pop out and break. I paused my ride. with no other viable options, I opened the Tequila, chugged down the contents, and resumed the trip home. Turns out I was right.....I fell 11 times on the way home. Tragedy averted! I'm not sure why, but my muscles were sore when I woke up the next day. Come to think of it, my whole body was sore.

So, here's a question for you. Have you ever thought about what muscles you use when you are riding your bike? Well of course you have! When I'm not drinking Tequila, I do. And as we think about it, of course we wonder about which leg muscles we use during our pedal stroke. C'mon, you know you do, admit it. I find the following graphic fascinating.



Most of us think of only our quadriceps because often when we push our body to full capability those muscles are where we mostly feel the burn. Other people see a cyclist's well-defined calves and assume that the calves are the heroes, but your calves only serve to transmit to the pedals the work of your quads. Don't get me wrong, quads and calves are great, and they carry a big load of the work. But our graphic reveals a more complex picture. Look at the circle above. In a clockwise direction, from the 12 o'clock to the 6 o'clock position is commonly referred to as the "power phase," and from just past the 6 o'clock spot clockwise back up to the 12 o'clock is called the "recovery phase." Look at the red band: The red band is the largest one on the graphic (meaning that the muscles represented by the red band are activated for a greater length of time during one pedal rotation than the others). That's not the quads, it's the "glutes" (hip extensors) doing the work for most of the power phase. Bet you didn't know that did you? Want to ride stronger and faster? If so, develop your glutes. The quads get all the attention, but your glutes are the real heroes of the power stroke.

Here's another thing. Lots of people say you should have a "round" pedal stroke and will encourage you to pull up in the recovery stroke. Well, look at the relatively weaker "recovery muscles." Knowing what you know now of the muscles involved, you might have guessed that it is impossible to produce even amounts of power throughout the pedal stroke from one leg. The muscles you recruit during the recovery stroke are not powerful enough to make an impact on overall force, and they will fatigue quickly. Almost all your forward motion on a bicycle comes from pressing down on the pedals.

This is different from having a smooth pedal stroke, which is probably what most people mean but have not articulated properly. You should pull up in the recovery stroke just enough so that your power leg is not bearing the load of lifting your recovery leg. Smoothly transitioning from each phase of the pedal stroke will avoid jerky motions and add to efficiency. We've all seen cyclists whose legs are jerking and moving furiously, making them seem unstable and wobbly. Pro cyclists look like they have round pedal strokes, but that comes from smoothness and hours upon hours of perfecting muscle memory. Guaranteed they are producing far more power in the front end of their pedaling.

Think about it next time you ride and smooth out your pedal stroke. That's it for this week. By the way, learn from me, and don't drink and ride at the same time.

Darryl

- *Some of this content is excerpted from an article by fellow cyclist and cycling coach Josh Friedman in his April 15, 2020 article in [Ilovebicycling.com](http://Ilovebicycling.com). Thanks Josh.*