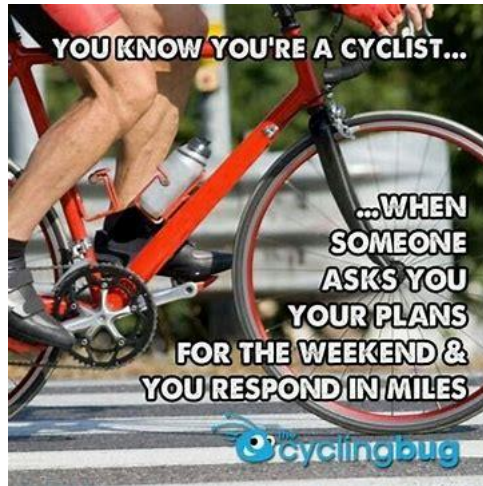


TTIPS VOL. 3/23 – INSIGHTS

- Knee Pain -



Introduction

Let's say you ride 45 miles this weekend. And let's say that your average pedal cadence at the finish line is 87 revolutions per minute. And let's say that it took you two and a half hours to ride that 45 miles. That means that your pedals completed one revolution 13,050 times during just that ride. Let's say you do that ride three times per week. Your pedals would have completed 39,150 revolutions. Wow.

The human body is amazing. Imagine all of the power transmitted to the pedals through your knees during those rides. Most of us complete our rides, hop off the bike, and go about our business. Some of us don't. As we all know, sometimes all of that work can translate into sore knees. Do you have knee pain induced by riding your bike? Well take another Ibuprofen and read on.

How to Knock Out Knee Pain for Good

THE EXERCISES, TIPS, AND SUPPLEMENTS YOU NEED TO PROTECT YOUR KNEES AND RIDE STRONG FOREVER

BY ASHLEY MATEO, PUBLISHED: Apr 14, 2022
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At first glance, the knee seems fairly simple: It's just a hinge joint that allows our legs to move in a circle as we pedal. But so many different forces act on it—the four muscles of the [quadriceps](#), the three making up your [hamstrings](#), one of the [hip adductors](#), and the [iliotibial band](#)—that it's actually quite complicated. “All of those cross through the knee joint, and the different lengths and tensions aren't always in balance,” says Frank Baptiste, a certified strength and conditioning coach in New York City.

And it plays a crucial role in your riding. “Power comes from the large muscles in our hips and thighs as we cycle,” explains John Feldman, MD, an orthopedic specialist at the Orthopedic Institute at Jersey City Medical Center. “In order to transfer that power to the site of propulsion—our lower legs and feet—energy needs to be transferred through that knee joint.”

Given that complexity, it makes sense that knee injuries are among the most common for cyclists—up to 33 percent of riders have suffered from knee pain, according to a 2018 study published in the *Open Access Journal of Sports Medicine*.

That's also due to how much we use our knees as we pedal. “If you're spinning at a hundred revolutions per minute for 100 minutes, you're looking at 10,000 repetitions,” says Baptiste. If your body positioning is just a little bit off or you have a minor muscular imbalance somewhere, you're at risk for overuse injuries, which are caused by repetitive stress or trauma to a certain area. Luckily, most of these injuries tend to be pretty minor, says Feldman. But they can linger if you don't address them.

Don't let that happen to you. This advice is designed to help you kick knee pain to the curb, and prevent it from slowing you down again.

Where Does It Hurt?



FRONT

➡ **Feels Like:** A dull, aching pain around the kneecap

➡ **The problem:** Patellofemoral pain syndrome

➡ **What it means:** Your quads do the hard job of pushing the pedal forward with every stroke. Each one is made up of four muscles—the vastus medialis is one of them, and works to extend your knee. If that muscle is relatively weak compared to the others in the quad, the stronger muscles can pull the kneecap to the side of the knee, says Feldman.

➡ **Fix it:** Make sure your saddle isn't too low—that can put excess stress on the quadriceps, patella, and ligaments, says physical therapist and bike fit specialist Kevin Schmidt, owner of Pedal PT in Portland, Oregon. Aim for a knee angle of 32 to 35 degrees at the straightest part of the pedal stroke. To find that sweet spot, have someone hold the bike steady for you while you pedal backward with your heels on the pedals; the knee should have just a very slight bend at the bottom of the stroke, he says.

BACK

➡ **Feels like:** Pain or stiffness behind the knee, or at the top of the hamstrings near the glutes

➡ **The problem:** Hamstring overextension

➡ **What it means:** A trio of muscles that run across the back of your thigh, your hamstrings are responsible for hip extension and knee flexion, helping you pull the pedal back up to the top of a stroke. Each time the leg reaches too far to get to the bottom of a pedal stroke, it “places the hamstrings and posterior knee structure in a lengthened, stretched, and often inefficient

position,” explains Schmidt. Add in countless repetitions over a long ride, and that’s a recipe for pain.

➡ **Fix it:** To avoid that overextension, try lowering the saddle slightly and moving it a little closer to the handlebar, a few millimeters each. But don’t go too low—your knee angle should never be less than 30 degrees at the bottom of a pedal stroke, Schmidt says.

OUTSIDE

➡ **Feels like:** Sharp pain on the outer side of the knee

➡ **The problem:** Iliotibial (IT) Band Syndrome

➡ **What it means:** “The IT band is this long piece of fascia [a web of connective tissue underneath the skin] that extends from your hip all the way past your knee to the top of your tibia on the [outside] of your leg,” Feldman explains. It helps to move the hips and thighs toward the midline of your body, and stabilizes the knee—which involves it in every aspect of a pedal stroke. So with repetitive sports like cycling, “whenever you flex your knee, the IT band moves back and forth over the outside of the knee joint,” he says. Over time, excessive friction can lead to inflammation in that connective tissue.

➡ **Fix it:** Because the IT band is a connective tissue—not a muscle—you can’t exactly stretch it, but foam rolling can help relax the surrounding muscles and ease tension on the IT band, says Feldman. Stretching and strengthening those surrounding muscles can also reduce pain. Learn how to do exercises that help at [bicycling.com/ITband](https://www.bicycling.com/ITband).

INSIDE

➡ **Feels like:** Sharp pain on the inner side of the knee

➡ **The problem:** Foot misplacement

➡ **What it means:** “This is commonly related to ‘too wide’ of a stance, which occurs when the cleats are placed too far toward the inside of the foot on the shoe,” says Schmidt. “It can also occur when the cleat is externally rotated on the shoe, causing your heel to rotate outward.” That makes your knees more likely to collapse inward, putting more stress on it during each pedal stroke. Smaller riders, those who use a triple chainring in the front, and people who ride fat bikes may be more susceptible to this kind of pain, because their stance will naturally be wider.

➡ **Fix it:** Get a bike fit. “Your goal should be to have your hip, knee, and foot in a nice vertical line when viewed from the front,” says Schmidt. A professional bike fitter can offer gear and positioning solutions to better align your legs.

All right, that's all for now. Until next time,

Make Every Ride Epic,

Darryl