



## Stop Suffering From Cycling-related Back Pain

### Ouch! Why Is Low Back Pain So Common In Cycling?

We've all felt it. You've just finished a long ride, complete with extended climbs. You get off the bike and you can't stand up straight. If you didn't know better, you would think you'd become an old man in the course of a three hour ride.

Few issues are as universal to the cyclist as that of low back pain. It seems that most riders, especially as they get older, experience this common problem. While it's easy to say 'I've got low back pain', actually identifying the exact source can be much more difficult.

In reality, as with many types of pain, 'the exact source of the problem' is usually too simplistic to be of any help as you begin the process of identification. Your spine and pelvis are part of the neuromusculoskeletal system, and as the name implies, there is an important interaction between the neurology, muscles, and joints. In short, the statements 'I think I've got a pinched nerve', 'I pulled a muscle in my back' or 'my back is out of place' paint an incomplete picture.



### So What IS The Problem?

Don't forget that as cyclists we've constrained ourselves to movement patterns dictated by this machine called the bicycle. Road biking demands that we subject our low back to a prolonged flexed posture. This is hard on the joints and hard on the muscles.

We already spend far too much time in flexion. Most of us sit for long periods of time throughout the day resulting in short, contracted hip flexors. We even spend time curled up when we sleep, further shortening the psoas, iliacus, rectus femoris, and sartorius muscles.

Several other muscles comprise the hip flexor group, but if you start appreciating just how complex the entire low back region is, you'll be on your way toward helping and preventing many low back injuries common to cyclists.

There are actually very few activities of daily living that stretch out the hip flexors.

The extreme flexed position that we subject ourselves to when cycling forces our hip flexors to perform somewhere between 'short and shorter'. 'Short and shorter' muscles are prone to fatigue and spasm.

You may have noticed the problem of short hip flexors when you're doing prolonged hill climbing. In order to get some relief, you stand for a short while. You're experiencing the benefit of stretching out this muscle group during the ride.

It's even more beneficial to take care of them beforehand with a regular hip flexor stretching routine and deep tissue massage. What's good for the pros is good for the amateurs.

No discussion of low back pain would be complete without emphasizing the necessity of increasing the core strength. Without the tireless stability of a strong core, prolonged flexion and extension of the legs is limited. In short, you need a strong core to keep pedaling when the going gets tough.

### **Don't Forget the Obscure Stretches**

We've already alluded to the benefits of alternating sitting with standing in order to lengthen the hip flexors. Stretching out this muscle group at home is invaluable to riding comfort.

Most discussions of cycling stretches include the hamstrings, quadriceps, and calves. Some discussions will cover stretching the hip flexors, the IT bands, and perhaps some general low back stretches. These are all important, but there is a critical group of muscles directly affecting the sacroiliac joints and lumbar spine which is often neglected.

Here are three overlooked muscle groups that should be emphasized in addition to those mentioned above:

- The *psoas* muscle is critical to hip flexion and, because cyclists are bent at the waist, this muscle has to do its work while in a 'shortened' position. Because the psoas muscle originates along the lumbar spine and crosses the sacro-iliac joint on its way to the femur (long bone in the thigh), it can directly contribute to many forms of low back pain. Do everything you can to keep it long and loose. Here's a link ( <http://cycling-review.com/more-reviews/psoas-stretching/> ) to some effective psoas stretches as well as a good explanation of the location and function of this misunderstood muscle.

- The ***gluteus*** muscles are a complex composed of the maximus, medius, and minimus muscles. Chronic tightness of this group can lead to painful trigger points along the backside of the top of the pelvic bone (iliac crest). Effective massage therapists are well aware of the location of these trigger points. When they find them, you'll be overly aware of them, too! Here's a link to a good video demonstrating an effective gluteal stretch. This stretch also stretches the piriformis. <http://cycling-review.com/more-reviews/gluteal-stretching/>
- The ***piriformis*** muscle begins along the side of the sacrum and crosses the sacroiliac joint to the femur. Any muscle that crosses a joint will directly effect that joint and this little muscle as it relates to the sacro-iliac joint is no exception. Additionally, 15% of the population (cyclists included) have their very large sciatic nerve running through this muscle instead of under it, making them more susceptible to sciatic nerve impingement when this muscle is too tight. Follow this link ( <http://cycling-review.com/more-reviews/piriformis-stretching/> ) to examples of piriformis stretches.

### **But It's Not Just the Muscles...**

The sacroiliac joints are often overlooked in a discussion of low back pain. Because of the complex nature of the muscles affecting these joints, including most of the hip flexors, sacroiliac pain is a common source of a cyclist's low back pain.

The sacroiliac joint is the junction of the sacrum (lowest part of the spine) and the ileum (pelvis). Until about 1930, it was thought that there was no movement in the sacroiliac joints, but we now know that there is a limited degree of normal movement.

Any cyclist who's experienced sacroiliac pain also knows that when this joint gets stuck (fixation), severe pain is close behind. Chiropractic manipulation of restricted sacro-iliac joints offers a great deal of relief in most cases.

However, our objective has been to give you some things to do before your sacroiliac complex goes into painful spasm.

### **Low Back Summary**

Injuries affecting cyclists are often dictated to us by the nature of the machine we've attached ourselves to. Repetitive, short range, very controlled movements are a recipe for a host of overuse injuries.

Subjecting ourselves to the confines of the bike necessitates preventative measures such as stretching some obscure muscle groups in addition to the common stretches already being done.

The neuromusculoskeletal system works holistically, with each component-- nerves, muscles, and joints-- affecting the other. A multi-disciplined approach is often the most helpful.

Outside help in the form of muscle work and joint mobilization can help tremendously. Think of it as you would your dental care. While your efforts at home are essential, professional help offers something you can't accomplish on your own.

Optimally, a good understanding of potential injuries and the relatively simple ways to avoid them will prompt us to act preventively.

## **Do Neck Pain and Upper Back Pain Go Hand in Hand With Cycling?**

If you've been on enough long rides, I'll bet you've felt that burning in your shoulders, that tightness in your neck, or even the numbness that goes down into your arms, hands, and fingers.

Neck and upper back problems in cyclists have their roots in several factors which we'll discuss throughout this article. I'll suggest some solutions too, so hang in there.

### **It's The Awkward Position**

It's amusing to note that anthropologists attribute so many of mankind's aches and pains to the audacity we display by walking upright. But, just ask us cyclists: moving forward while hunched over on a bike isn't pain-free either, even though it satisfies the scientists' desire for us to look chimpanzee-ish.

But that's the position cyclists find themselves in. We're bent over at the waist and in order to see where we're going, we have to bend our necks up for hours on end. Health care professionals call it cervical (neck) hyper-extension. It's this prolonged hyper-extension of the neck that leads to so much pain.



### **So What's Really Happening In The Neck...**

Where to begin? Health care providers define an overuse injury, like what's experienced by cyclists in the neck and upper back, as the damage that occurs by repetitive sub-maximal loading.

I've spent over 20 years translating medical-speak into language understood by my patients, so let me give it my best shot in explaining what's happening when the neck is bent up for hours on end. I'll also give you some tips on how to combat the problem.

The circulation of blood into a muscle becomes vulnerable when the vessels enter the muscle, and a prolonged, sustained contraction of that muscle is occurring. When the muscle contracts, it is putting pressure on the arterioles and capillaries within itself. In a sense, it is reducing its own blood supply.

This isn't a problem when a muscle is contracting and relaxing, like the muscles in the leg do when the cyclist is pedaling. But when the muscles on the back side of the neck and upper back stay contracted for hours on end, circulation is impaired. Various fibers of the muscle that is being asked to contract without adequate oxygen and nutrients often go into spasm. This commonly results in trigger points in that muscle.

Trigger points are 'knots' in various parts of a muscle which initiate a pain, spasm, then more pain response. Now you've got problems. There are effective treatments for trigger points which are usually at the hand of a professional.

Medical doctors will inject the trigger points with saline solution or lidocaine. Chiropractors, physical therapists, or massage therapists will reduce these trigger points by putting specific pressure on them until they 'release'.

But, let's talk about what can be done long before trigger points develop.

### **It's All About Movement!**

There's a reason I took the effort to describe trigger points and their origin. If all I do in this report is tell you a few stretches and maneuvers designed to combat neck and upper back tightness you're quite likely to forget them very quickly.

However, if you have a basic understanding of the problem of sustained muscular contraction and the lack of adequate circulation to that muscle when it's under a load, you should be able to reason out what needs to be done. Being able to reason out the problem and its solution beats rote memorization every time.

So what needs to be done? You probably already know that stretching out the muscle is beneficial. But in addition to the stretching, you'll do yourself a favor by making those muscles alternate between contracting at 100% and then relaxing. Reverse shoulder shrugs are great for this.

Reverse shoulder shrugs are performed by shrugging your shoulders up toward your ears, then back toward whatever's sneaking up behind you, then dropping back to the neutral starting point.

They're called reverse shoulder shrugs because forward rotating instead of reverse rotating not only serves to hunch the back even more into the chimp-like posture, it also doesn't force the muscles of the upper back to contract enough to accomplish the "contract, relax, contract, relax" movement pattern. Just remember that you'll benefit if you can get those muscles pumping periodically.

Elbow presses are also very good at forcing this pumping of the blood supply to the upper back. Remember, we're trying to combat the sustained sub-maximal contraction that cinches down on the muscle's small arteries.

To perform elbow presses, bring your elbows out away from the body at the shoulder level. Then pull your elbows back as far as you can, causing the muscles around your shoulder blades and upper back to contract before you bring the elbows back to the starting point.

You can do a series of these elbow presses. Start with your elbows at the level of your shoulders and then perform additional elbow presses with the starting point being a little bit lower each time. The last repetition would begin with your elbows close to your side. By initiating the elbow presses from different levels, you'll be working more of your back muscles. Repeat this until you get a mild 'burn' in the muscles.

Of course you should use some common sense regarding doing any of these exercises if you have shoulder issues, like a rotator cuff injury.

How about some basic neck ranges of motion? Certainly don't compromise your ability to remain upright on the bike, but you may try putting your neck through its paces.

Here's the cervical (neck) range-of-motion drill: flexion (chin to chest), extension (head up), right and left rotation (chin pointing toward the point of the shoulder), and right and left lateral flexion (ear to the shoulder).

### **Thoracic Outlet Syndrome**

Thoracic outlet syndrome accounts for many instances of nerve-like discomfort into the arms. A description of the symptoms includes the Who's Who of upper back and neck problems. Anything from muscle tension headaches, pain in the neck, pain in the shoulders, arm pain, and weakness or tingling in any of these areas can be attributed to thoracic outlet syndrome.

Essentially thoracic outlet syndrome is a compression of the bundle of nerves, arteries, and veins that go down into the arms.

Over development of the muscles in the area, such as the scalene muscles, contributes to this problem in strength sports like football and baseball pitching.

Cyclists experiencing thoracic outlet syndrome-type symptoms, however, are more likely suffering from muscle tightness or spasm at the base of the neck. Once again, movement and stretching are effective in relieving discomfort.

### **Now On To Bike Fitting...**

Let's start by offering some solutions in the area of positioning ourselves on the bike. To begin with, most riders have access to a local bike shop that should know a lot about proper bike fitting. Make good use of their expertise.

Being too 'laid out' on the bike creates the need to bend the neck further up, so there are a few common sense changes that can be made. Raising the handle bars so that you're riding more upright, or making sure that your 'virtual top tube' length isn't too long are good places to start.

While it isn't practical to get a shorter top tube (you'd need a new frame), you can shorten the reach by getting a shorter stem. Just be sure you don't go much shorter than 100 mm or your bike may achieve levels of squirrelness you don't want to have to deal with.

I'm sure most of you know about the basic measurement of correct reach, but here it is anyway.

When your hands are on your handlebar drops, your front hub should be obscured by your handlebars as you look down toward it (the front hub).

Modern handlebars have a variety of degrees of drop so choosing a bar with shallow drops may be a good idea. You may not spend very much time in the drops at all, in which case shallow or deep drops may be a mute point.

Another equipment consideration is the helmet. Road bikers don't often have visors on their helmets because it necessitates having to bend the neck too far up in order to see ahead.

Proper placement of the helmet is also important. Having the helmet too far forward on your forehead causes neck problems by forcing you to bend your head too far back. Having it too far back on your forehead defeats the safety benefits.

### **Upper Back Summary**

As long as we've restricted ourselves to the constraints of our bikes, we'll need to be diligent to overcome the inherent problems of neck, upper back, and arm problems caused by our abnormal posture while cycling. Proper bike fitting is essential since we don't want to make what is already a problematic position even worse by being too 'stretched out', necessitating exaggerated neck extension.

We also need to be diligent in keeping our muscles as loose as possible by stretching them out.

You'll also benefit by doing a few simple exercises which cause the muscles of the upper back to contract, relax, and contract.

These activities will go a long way toward keeping the musculature in the upper back and lower neck from getting too tight, causing problems in the muscles, or in the sensitive tissues of the area.

It all translates into more efficient and comfortable riding.

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