

Training Log 02: Basics of Bike Fitting

Arguably more so than any other piece of sporting equipment, nothing is in a state of closer symbiosis with the athlete than the bicycle. This makes a proper bike fit absolutely essential. That's because cycling is a repetitive and constrained sport. Repetitive because it's the same motion over and over again with your legs. Riding at 90 revolutions per minute (rpm), a one hour ride means 5,400 pedal strokes! And this motion is constrained, because the pedals force your body to move in a particular path. This makes it unlike running or swimming, two other repetitive sports but where there is some give and take that your body can adapt to. So while cycling is a terrific sport for athletes rehabing from running problems, an improper fit can also be a setup for disaster.

Our cycling website, www.pezcyclingnews.com, has covered bike fit in great detail, so check those articles out for more information. But here are some of the absolutely critical points in bike fitting philosophy:

- While there is a lot of science behind it, bike fit remains an art. More importantly, bike fit is **INDIVIDUAL!** The basic rules of thumb must adapt to your peculiar body. For example, two individuals of the same height will likely have different leg lengths, upper body and arm lengths. Even foot length will have a major impact on how high your saddle should be set. Also, each will have different levels of flexibility, determining how far forward and low the handlebars should be set.
- Bike fit is a dynamic process that will change over time. As you become more flexible, you may benefit from changing your handlebar position to get lower. I've also seen many beginning riders, with a bit of a gut to work off, start off with a fairly upright position with a relatively low saddle and short reach to the bars. This was because their gut was literally in the way of their pedaling, forcing their knees outwards. As they became leaner, their knees were in better alignment and they could stretch their legs and handlebars out.
- What works for the professionals will most likely **NOT** work for you. The pros are young, have been racing for over a decade, and are very flexible and skinny. That allows most of them to have extremely low and forward handlebars.
- What you should strive for is a balance between aerodynamics and **COMFORT**. Being comfortable on the bike will eventually allow you to ride longer with less fatigue.

With the above in mind, here are some very broad rules of thumb to take into consideration, along with some major factors that may modify them significantly:

- The first thing to set up are your shoes and cleats, as this is the bedrock from which the rest of your bike fit is determined. Bike shoes are **NOT** runners or normal shoes, and you do not need your typical finger-width of toe room at the front. Bike shoes should be as snug as possible without actually cramping your toes, and may actually be a half size or so less than your normal shoe size. For example, my pair of fitted running shoes are size 41, but my bike shoes are 40.5.

- One common rule of thumb is that your cleats should be adjusted so that the pedal axle is directly under the ball of your feet. This is a good starting point, but may be modified based on shoe size and pedaling style. For example, I tend to pedal very neutral, with my feet fairly horizontal as I push down. In contrast, my wife Debbie tends to pedal with a »toes down« style, so her cleats are adjusted a bit more forward.
- There are lots of formulae for how high your saddle should be set. But as we just saw, pointing your toes down while riding can add a couple of centimetres to your saddle height, and this isn't in any formula. In general, you want a saddle height that gives your knee about 25-30 degrees of bend when at the bottom of the pedal stroke.
- The next thing to set is how far back your saddle lies. This is very dependent on your leg length and preferred riding, so there really is no rule here. The one thing to keep in mind is that moving your saddle backwards effectively raises your saddle height, so you need to treat the two adjustments as dynamic and interacting with each other.
- While on the topic of saddles, you do NOT want a Lazyboy fat cushy saddle! They feel great to sit on but are absolute torture racks on the bike itself. You straddle the saddle while riding, so you want a saddle that are the width of your sit bones, and is relatively narrow to allow you to pedal your legs on the bike.
- Saddles are highly individual. The best thing is to find a shop that will let you try out a number of different saddles on your own bike.
- Last thing about saddles – they should be set level! Tilting the nose down means you'll always be sliding forward, putting a lot more weight on your arms to hold you up and to push your butt back.
- How far forwards and low your handlebars are set is a highly fluid measurement, based on things like your upper body and arm length, flexibility, etc. This will also influence the handling characteristics of the bike. As I wrote above, it is a dynamic combination of comfort and aerodynamics. One of the biggest changes I've made to my bike position over the past few years is to actually move the handlebars closer by a lot (4 cm) and up a bit. I've actually been able to breathe better and produce more power with my back as a result, so lower and forward is not always better.
- The width of your handlebars should be about the width of your shoulder. Wider is not always better, because it puts more strain on your back.

The order of the points above is also the order in which you should be setting up your bike. For example, you do not set your handlebars and then try to adapt your seat position to that!

All the above seems a pretty complex process, and it can be. My overwhelming advice is to find a good bike fitter who will take the time to set you up properly. Then take things out onto the road and try things out. If you've already been riding for a while and want to try changing your position, the other absolutely important thing is to make only small changes at a time, then let your body adapt before making more changes.

Keep riding!

Stephen

<http://www.pezcyclingnews.com/default.asp?pg=fullstory&id=3617> (this is a detailed story on me getting properly fitted on a bike).