

# DON'T HOLD BACK

**Dr David Stapleton and Dr Billy Chow** explain why straightening your back will help turn the power back on.

**T**ake a really good look at these x-rays (Figure 1 and 2). Is this you? And anyway if it was, how would you know that your frame actually looked like that?

In our last article we discussed the importance of skeletal balance and the potential restriction of normal 'nerve flow' due to misalignment of the spinal bones and how this mechanism can not only severely reduce your power output but also continue to manufacture more injuries.

If you take a careful look at the example x-ray of the low back and pelvis in Figure 1, a considerable height difference from one hip to the other is evident. You can clearly see where the horizontal lines are drawn. The green line shows where a 'normal' hip height should be and the red dotted line shows the rider's 'actual' hip height. As is often the case, this rider has adapted to his instability over a period of time and up until now has been none the wiser.

In the early days of its existence he experienced no unusual pain at all and like all enthusiastic road racers, happily endured the long hours



Photo • John Fraser



Figure 1



Figure 2

on the bike, took every traffic light as an excuse to sprint and attacked every hill as if it was his last.

But then, like so many other riders, things started to fall apart. We've seen it a thousand times before. A little bit of back pain here, a small amount of neck pain there, recovery times become a struggle and overall performance begins to fade.

Frustration set in as he continued to feel increasingly 'uncomfortable' on the bike, which as usual, became more and more the target of blame for the lack of performance and the generalised daggy feeling that went with it. In fact the irony was that on race day he would head out feeling ready to blow the bunch apart only to be struggling to hang on to the back by halfway.

As is quite common, the rider in question had a mild history of minor back pain, had 'pulled' the odd muscle or two, and like most of us, had the occasional crash, coming off second best in the subsequent fight with gravity. Nevertheless, he got over it in a normal time frame needed for healing and bounced back with the resilience we could expect for someone of that age and fitness.

## Problems Brewing

However, because these types of skeletal instabilities, especially in their infancy, are very often asymptomatic, or without pain, these problems had obviously been brewing for some time...he simply didn't know it.

Imagine this: you could have tooth decay now and feel no pain yet or worse still, a dodgy heart and have no signs or symptoms yet. Ask yourself the question, do people with, for example, cancer or heart disease, experience pain at the beginning, middle or end of their condition? Answer? Usually in the middle or towards the end.

All of these things have at least one characteristic in common and that is for a large part of their existence they are asymptomatic. So, once again, how would you know?

The truth is that, slowly but surely, the rider in question had been continuing to degenerate to the point of now experiencing the onset of pain. In other words, symptoms were now starting to show. He now complains of continuous hamstring tightness, back pain, premature fatigue and in recent months, debilitating knee pain. All of which are impacting heavily on his activities of daily living let alone his quality of riding. Needless to say that his confidence is trashed and the enthusiasm for the sport he once loved passionately is now questionable.

## Power Source

We all know that cycling is the ultimate partnership between man and machine and unlike, for example, motorsport, we don't just sit and steer. Although bike and body realistically remain two separate issues, ultimately they must work together in total harmony. Proper bike set-up is absolutely imperative for everyone, not just the serious cyclist, but for now let's just put the bike to one side and focus on the power source...you.

Take a look at the photograph of the rider seated on the bike in figure 3. Look at the difference between the green line (normal) and the red dotted line. It clearly shows how posture and skeletal imbalance can have a huge impact on the rest of the system. The wear and tear factor can be enormous and what may start off as a minor misalignment of the bones of the spine or a postural instability of the pelvis ultimately involves joints, muscles and ligaments and can end up as a major concern after enduring the repetitious motion that cycling requires.

Also note the hip height on the right side. Just as an example, if we were to take the same height difference from one side hip to the other (let's just say for example that it was 2cm), let's now imagine we replaced the rider with someone with a 'normal' and balanced frame as in Figure 4. However, this time we reduce the length of one crankshaft by the same 2cm. Basically it's the same thing and obviously we could expect trouble...big trouble. Just try pedalling without one shoe and feel the compensations you would have to make just to complete the rotation. In fact just try standing or walking with only one shoe and feel the postural compensation needed.

And of course it doesn't end there. If you have instability in one area of your body, elementary physics will tell you that you will compensate somewhere else. Very often typical neck and shoulder pain, 'pins and needles' in your arms and other aggravations, can all be traced back to an origin in the lower lumbar spine and pelvis.

Even those who have experienced fixed cleats can relate to wear and tear injuries just by restricting the lateral movement of the knee, foot and ankle. Stuart O'Grady had to totally recalculate his set-up when he

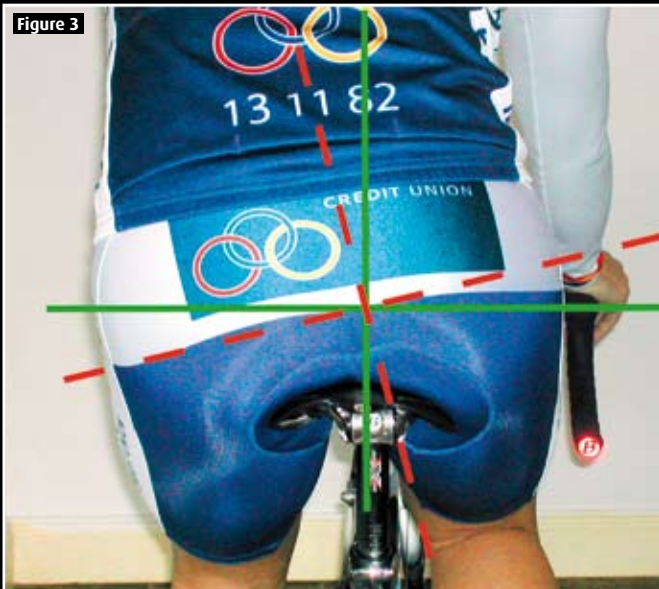


Figure 3

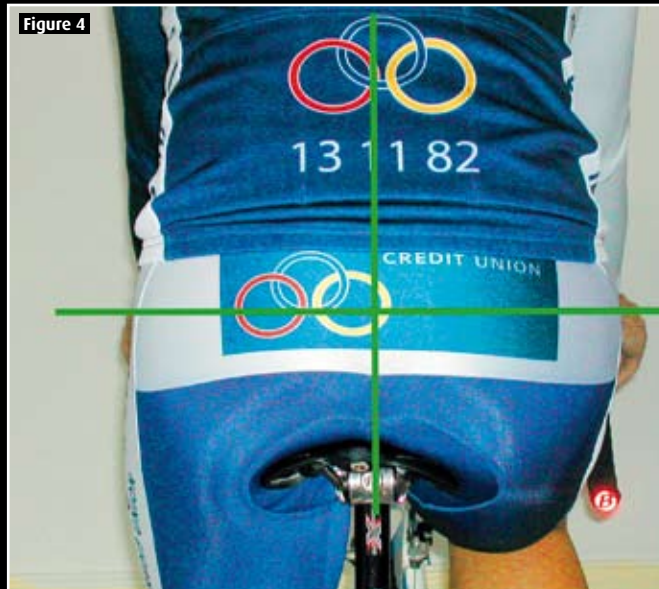


Figure 4

changed bike and shoes with CSC. Australian Gold medallist, Graeme Brown once said, 'It's about the one percent that can make all the difference'. He's right on the mark in more ways than one. Just as wrongly positioned cleats, a seat that's too low or bars too far forward can have a huge impact on your riding ability, power and premature fatigue, so too can a relatively mild, non painful postural instability generate injuries all of their own accord. Worse still, just the alteration bio-mechanically can reduce your power, as we know, quite markedly.

### Magnificent Machine

The generation of either new injuries or the exacerbation of old problems comes about by the constant wearing of bony surfaces under load and driven by constant repetition. Just as an example, take for instance the 'hip joint', a type of 'ball and socket' joint located at the very top of where your leg joins the wing of your pelvis. This magnificent piece of machinery plays a huge role as a 'multi-directional pin' in everything you do and is paramount to your pedalling action. Under normal bio-mechanically correct conditions this joint will rotate perfectly with proper muscular and ligamentous support allowing it to perform exactly the way it should with every bit of strength and power available. However, when the body is out of alignment and the hips move in to an unstable position as demonstrated in Figure 4, multiple pressures are placed not only on the actual joint but also on the surrounding supportive musculature and soft tissue. This becomes even more of a problem as the entire structure attempts to adjust to gravity and moves towards 'the line of least resistance' which now creates a 'wear pattern' all of its own. Deterioration of the joint surface and a reduction in nerve power results in the loss of tone and elasticity of muscle and connective tissue and now begins its own degenerative process. And of course, remember this entire dysfunction may not yet create pain.

Think of it as the wheel on your car being out of alignment. In the early stages you may be none the wiser but as it progresses an abnormal wear pattern on the tyre surface will appear. In most cases it's highly unlikely to raise attention and even when it progresses to the next phase of creating minor steering problems and vibration, realistically speaking, most people would more than likely choose to ignore it in the grand hope that it may resolve itself. Beware the five most dangerous words— 'maybe it will go away'. Sadly, while it's being ignored or in fact trivialised (as we do), the problem continues to creep into a myriad of other areas, ultimately affecting other tyres, your steering mechanism and so on. Sound familiar?

Your body is no different and those experiencing underlying biomechanical instabilities in the lower lumbar spine such as in our example, can quite easily anticipate incurring referred problems in other areas such

as the neck mid back and shoulders purely as compensation.

### Chiro Influence

While effectively Chiropractic has been around for the past 111 years, it's in recent times that it has become an instrumental part of elite sports both in the areas of injury rehabilitation, body maintenance and performance. It's common knowledge that Lance Armstrong and an ever increasing number of other riders have regular spinal adjustments, all for the very reasons already discussed. But it's not just limited to cycling either. So many other professional sports ranging in diversity from football, basketball, tennis, to Formula One racing, have also turned to the assistance of chiropractic in maximising performance. Tiger Woods knows that while his competitors are changing their grip and altering their swing, he's fine-tuning his bio-mechanics by having his spine adjusted. And while other players are dreaming of hitting just one home-run, Barry Bonds, one of baseball's greatest hitters of all time, continues to work closely with his chiropractor.

### What does it all mean for you?

Firstly, you are involved in the greatest sport in the world and in doing so you have also chosen one of the most demanding and ergonomically difficult. No matter whether you're the occasional fair-weather rider, an enthusiastic weekend warrior, a serious racer or a handsomely paid pro, the hard fact is that your bike is only as good as the power that drives it. It's such an irony sometimes that we seek the latest and greatest carbon addition to the bike in the hope that we will reduce the weight by a gram or two to gain that added advantage and yet totally overlook our own body and its performance potential. Next time you're out on the bike, think about your posture and just how much better you could be riding by maximising your health and performance with proper care and maintenance of the spine and nervous system.

Mark your diary when next your bike is due for a service; book yourself in for a chiropractic check-up at the same time and watch what happens. 🚲

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*All proceeds from their initial consultations are donated to the Amy Gillett Foundation.*