



THORACIC FOCUS

Brad Hiskins explains the role of your thoracic spine and demonstrates how to mobilise it to boost your comfort and performance on the bike.

Comfort and aerodynamics on a bike are two key factors to cycling efficiency, longevity and performance. Let's explore these factors and educate ourselves on simple ways to increase our body's capacity to absorb load and increase effectiveness in our cycling pursuits.

Cyclists, of all levels, would have spent time fiddling and adjusting their bikes to obtain the most effective set-up to enable comfort on those long Sunday morning rides. Even with this constant bike tinkering you will inevitably experience some discomfort through your back and/or neck. So

what can we do to adjust our backs rather than our bikes to achieve comfort? Get that thoracic spine mobile!

Comfort

Your thoracic spine is the section of your spine that has the ribs attached, twelve in all (as there are twelve pairs of ribs). Having ribs attached to these vertebrae automatically make this section of your spine less mobile than your cervical (neck) and lumbar (lower back) spine. Therefore maintaining the little mobility of your thoracic spine is very

important. Why, you ask? Let's have a look at the typical cycling posture. When seated on your bike you are in a forward bending position (trunk flexion). If you were to simulate this position on land you would look like Figure 1. Take note of the position of your head in this position; it is facing the ground. However when on a bike, you obviously need to look forward so your head has quite a dramatic change in position—it has to extend through the cervical spine (Figure 2). Your cervical spine is quite capable of doing this by itself. However this position is much more achievable and efficient if the thoracic spine also extends to take some of the load. It is

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this extension of the thoracic spine and its ability to bear some of the load that increases comfort levels through your neck and upper back. See Figure 2 (hyperkyphotic) and Figure 3 (extended) for examples of movement coming predominantly from the cervical spine as opposed to the movement gained from the cervical and thoracic spine. Those who can achieve this thoracic spine extension will certainly experience less neck and upper back pain and hence increase their longevity in the sport.

Performance

Comfort will obviously improve performance. Reducing pain and muscular spasm from your neck and upper back will give you a physical and emotional advantage. Beyond this, an increase in range of movement in your thoracic spine will allow you to achieve a more aerodynamic position. A mobile thoracic spine allows you to lengthen your back into a streamline position, reducing air resistance and allowing you to travel at greater speeds with less effort and less deceleration. For those looking to improve their time trial ability, a mobile thoracic spine is a must. There are hundreds of thousands of dollars spent on devising changes to bikes to achieve tiny aerodynamic advantages, and similarly huge amounts are spent on helmet and clothing technology. It is highly advisable then to complement this by having the most mobile, aerodynamic spine.



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Breathing Capacity

Your ability to breathe fully is substantially impaired with a stiff thoracic spine. Try the following to see what I mean. While seated, put yourself into a 'hyperkyphotic' (excessive curve) thoracic posture (see Figure 4). While in this position (and try to keep yourself in this position throughout the exercise), try taking a deep breath. Now, to experience the difference with a less stiff thoracic spine and a 'better' postural position, sit up straight, taking away the hyperkyphotic thoracic spine (Figure 5). Now take a deep breath. Note the difference. Hence a stiff, hyperkyphotic thoracic spine substantially decreases your ability to breathe freely and deeply. Needless to say, air capacity is vital for the amateur and the professional cyclist to enjoy a Sunday ride or to compete at the highest levels. 🚴

Brad Hiskins has a Bachelor of Science (maj. Exercise Physiology), a Diploma in Soft Tissue Therapy, and has worked as Head of Service for the Athens Olympic Games, Soft Tissue Therapy service provider to the Australian Team at the Atlanta and Sydney Olympic Games, Head of Service for Manchester and Melbourne Commonwealth Games and Soft Tissue Therapist at the Australian Institute of Sport from 1994 to 2005. He has long been a provider of soft tissue therapy to numerous national sporting teams and AIS athletes.



Figure 4



Figure 5

USING THE PTR

Featuring Oenone Wood, 2004 and 2005 World Cup Winner

The Portable Thoracic Rack, or PTR, is designed to reverse the poor posture we find ourselves in during our daily activities or sporting ventures. It simply acts to mobilise your thoracic spine by you laying on it. Whereas a swiss ball will conform to your stiff spine, the PTR will not. Hence, your spine will have to conform to the shape of the PTR which has been angled to achieve optimal thoracic extension while reducing excessive lumbar extension. The diagrams in figures 6, 7 and 8 show you how this is done in a simple sequence. Furthermore, the PTR has a moveable head piece that adjusts to the length of your spine allowing people of all heights to use it comfortably.



Figure 6: Begin with hands on torso



Figure 7: Outstretch hands



Figure 8: Extend hands out to sides



Figure 9



Figure 10



The rack can also be used by a therapist during treatment sessions. If you have regular maintenance massages, take it along with you. Your therapist can help you stretch, as depicted in Figure 9 or even treat you while you are on the rack as in Figure 10.

The PTR is designed for the travelling cyclist as well as the homebody. There are two versions of the Portable Thoracic Rack. The first is a robust model fashioned from aluminium that is more specifically for home and regular use at gymnasiums. The second is an extremely strong and lightweight (700 grams) robust plastic model that fits neatly into sports bags making it an easy tool to carry with you.

For further information about the Portable Thoracic Rack, see www.portacoverly.com

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