

## **The Coaches Training Tips**

### ***Climbing***

Love them or hate them, climbing hills is an integral part of riding a bike. Some cyclists are fortunate to have the right physiology to allow them to climb hills with grace and little apparent effort. For the rest of us who didn't choose the right parents to be a climber, there are still things we can do to stay with the bunch on hills and still have something left when we get to the top.

Climbing is fairly simple – have a high power to weight ratio, good aerobic endurance and a good technique and you will climb well.

### ***Power to Weight Ratio***

If you want to be a good climber you need to be light and strong, so if you are carrying a couple of extra kilos, losing them will help. If you need to lose some weight a combination of diet and exercise will help. Should you decide to go on a diet, remember that competitive cyclists need adequate quantities of carbohydrate, dietary fibre, water and between 1 and 1.6 grams of protein per kilogram of body weight. The actual amount of protein depends on whether you are an endurance athlete or a sprinter. Sprinters, particularly track sprinters require more protein. For the exercise component of weight loss, long rides at E1 (65% – 75% of your maximum heart rate) are ideal.

To increase your power output, my favourite is interval training. Big gear, low cadence hill intervals will make you stronger. After about four to six weeks of strength intervals follow up with power intervals on the same hill. These should be done at a higher cadence with smaller gears. Come and see me at one of the club races or contact me if you want more information on this type of training.

Increasing your aerobic endurance requires more intervals. Suitable intervals are E2 (75%-85% max heart rate) to improve aerobic endurance and E3 (85%-92% max heart rate) to elevate usable endurance capacity. Again, contact me for more information on these intervals.

### ***Technique***

The first question is often 'should I climb seated or standing?' The view of most coaches is that seated is most effective, especially on long climbs<sup>1,2</sup>. Climbing out of the saddle is useful for short climbs, to stretch your legs on a long climb or just because the hill is too steep.

The correct cadence is the subject of some debate. Coaches such as Burke<sup>3</sup> advocate a cadence of 60 – 90 RPM. Higher cadences have become more popular, particularly with Lance Armstrong's high cadence success in the mountains. Presently the trend is for cadences of 80 – 120 RPM. Scientific studies have that sustainable power output is maximal at cadences of 90 – 100 RPM while optimal efficiency occurs at a much lower 50 – 60 RPM<sup>4</sup>. The best cadence is probably a compromise between efficiency and power output. However, higher cadences, even though they may be less efficient, seem to get better results and are what I recommend.

Balance and position are particularly important. When climbing in the seated position your hands should be on the top of the bars. To enable a higher cadence, move slightly forward on the saddle. If your cadence drops, move further back. Climbing out of the saddle is best done with your hands on the hoods. Maintaining an optimum balance between front and back wheels is also important, particularly when out of the saddle. You should be careful not to move too far forward as you want to keep sufficient weight on the rear wheel to maintain traction.

### ***Tactics***

*Shift Early* – on a long climb, don't try to maintain an unsustainable pace. In order to maintain the optimum cadence, shift before you need to, both to avoid being caught in too high a gear and to avoid changing gears when there are huge loads on the drivetrain. If you start to run out of fuel partway up, shift to a smaller gear and continue up at the same cadence, but a slower speed.

*Shift up before the top* – just before you reach the top of a hill, shift up a gear and push over the top. Many riders will ease up as the crest of a hill giving you an opportunity to get a break.

*Know when to go for it* – a short hill is the perfect opportunity to make up some time; go for it on the way up. You will gain more advantage on the climb than expending the same effort on the descent on the other side of the hill.

*Climb at your own pace* – climb at a fixed effort or power output, not a fixed speed<sup>5</sup>. Use a heart rate monitor or power meter to stay below your lactate threshold.

*Start at the front* – if you struggle on climbs, try to start at the front of the bunch. This allows you to maintain your own pace. Stronger riders may pass you but your chances of being dropped before reaching the top are much reduced.

Finally, build your confidence by training and racing on hilly courses. Often the most difficult aspect of climbing is convincing yourself that you can do it and stay with the bunch.

If anyone has any suggestions for this column or wants to discuss their training just send me an email or give me a call on 0402 446 947.

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<sup>1</sup> E. R. Burke, *Serious Cycling*, 2<sup>nd</sup> ed., Human Kinetics, Campaign, 2002.

<sup>2</sup> L. Armstrong, C. Charmichael & P. Nye, *The Lance Armstrong Performance Program*, Rodale, 2000

<sup>3</sup> Burke, *Serious Cycling*

<sup>4</sup> J. de Koning & K van Soest, 'Biomechanics' in *High-Performance Cycling*, ed. A. Jeukendrup, Human Kinetics, Campaign, 2002.

<sup>5</sup> S. Bannister, 'Technique', in *Training*, ed. A. Simpkin, Coachwise, Armley, 2000.