

To lift or not to lift, that is the question!

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As a personal coach to countless elite cyclists over almost thirty years I have seen many training strategies and techniques. I believe it is fair to say that truly successful strategies (that lead to consistent performance gains) are quickly seized upon and adopted by the cycling fraternity, while unsuccessful strategies, to steal a cycling phrase, get dropped. As a coach predominately in endurance based events, a question I am frequently asked by athletes regarding one specific training strategy is, should I be including non-specific resistance training (i.e. traditional weight training) into their training programme, and will it improve my cycling performance. My standard answer to the above questions is a typically non-committal “well it depends on what you want to achieve and I’m really not sure it will help long term”.

The idea of strength training for endurance cyclists is a relatively novel practice. Cyclists frequenting gyms and lifting weights was certainly not a common occurrence thirty years ago, in fact most coaches would have laughed at the idea. However, times change and now days it is relatively common to see cyclists pumping iron alongside their body building cousins. Indeed many competitive endurance cyclists participate in some form of resistance training, at least during their off season in the belief it will provide benefit come the next racing season. However in my experience few of these riders continue to perform weight training once the racing season is underway, and to me this begs the question is it worth weight training in the first place?

Many early strength studies in the 1980-90s showed gains in endurance performance when strength training was added to the training programmes of untrained or recreationally trained individuals. Clearly in this case almost any form of additional training is of benefit if your fitness status is relatively low. However in a comprehensive review of the effects of various high intensity training strategies I co-authored several years ago, we found little benefit from adding traditional weight lifting activities to concurrent endurance programmes with well-trained endurance athletes (Paton and Hopkins 2004). From a mechanistic standpoint at least this finding makes sense. The fact that strength training fails to enhance endurance performance in well-trained individuals is perhaps unsurprising given the contrasting mechanisms involved in signalling endurance training versus strength training adaptations (for a review of the molecular responses to training see Coffey and Hawley 2009). Therefore at first glance it seems that traditional strength training falls at the first hurdle as a reasonable

means for enhancing performance in well-trained athletes.

However several recent studies have shown more promising results for the practice of including strength training into an endurance cycling programme. Some of the most interesting strength training studies have come out of Norway via Bent Ronnestad and colleagues. These researchers have shown, over a series of several studies, the potential benefits of adding traditional strength training to an ongoing endurance training programme (Ronnestad et al 2010a) and also the advantages of maintaining strength training into the competitive racing season (Ronnestad et al 2010b). Indeed further support for continuing with strength training year round for cyclists comes in this very issue of JCS via the study by Ruiz et al (2016) which offers some promising findings for cyclists willing to maintain strength training as a regular part of their training into the racing season.

However while these recent studies offer promising results there is still a need for better designed strength training studies, which should include comparisons of strength training with other best practice training strategies (such as high intensity interval training) which are frequently adopted during the racing season. So until more research is available to conclusively answer the strength training question I will continue to air on the side of caution and give my standard answer to athletes. Or I will wait to see if Team SKY turns up at this years “tour de France” with a mobile gym in search of those elusive small gains; I can just imagine Chris Froome dropping in after a stage victory to do a few sets of deep squats.

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