Sports Performance Clinical Study

Dietary Antioxidant Supplementation Combined with Quercetin Improves Cycling Time Trial Performance

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Abstract

We investigated whether 6 wk of antioxidant supplementation (AS) would enhance 30 km time trial (TT) cycling performance. Eleven elite male cyclists completed a randomized, double-blind, cross-over study to test the effects of twice daily AS containing essential vitamins plus quercetin (FRS), and AS minus quercetin (FRS-Q) versus a baseline TT (B). MANOVA analysis showed that time to complete the 30 km TT was improved by 3.1% on FRS compared to B (P< .01), and by 2% over the last 5 km (P < 0.05). Absolute and relative (%HRmax) heart ratesand percent VO2max were not different between trials, but average and relative power (% peak power) was higher on FRS (P < or = 0.01). Rates of carbohydrate and fat oxidation were not different between trials. Thus, FRS supplementation significantly improved high-intensity cycling TT performance through enhancement of power output. Further study is needed to determine the potential mechanism(s) of the antioxidant efficacy.

Commentary on the study:
Lead Researcher Dr. Holden MacRae says of the results:
“Exercise performance changes of 1-4% are significant and usually mean the difference between winning and losing. Changes of this magnitude are typically achieved in athletes only by blood doping or living at high altitude. Daily use of FRS improved high intensity cycling time-trial performance by 3.1%, a very significant effect purely through consumption of a liquid dietary supplement.”

Dr. Marcus Elliott, MD, a Harvard-trained physician specializing in exercise physiology and a FRS Company advisor, believes that FRS has powerful applications for casual athletes as well as the non-athletic by preventing oxidative cell damage and increasing energy for daily activity. According to Dr. Elliott:
“For over a decade I’ve believed that our next breakthrough in athletic performance would involve a powerful antioxidant cocktail. From these impressive study results, I now think FRS may be that breakthrough.”