

WHAT'S UP DOC PETE?

In our last column we discussed the build up of inflammation, or oxidative stress, caused by high endurance activities such as long distance running, bicycling or swimming. For the ease of understanding, the cause of oxidative stress is the by-product of exercise called reactive oxidative species or free radicals (both abbreviated as ROS). This momentary build up of ROS can have a myriad of effects from arterial vascular disease to chronic fatigue syndrome. In this column I will discuss ways to decrease the momentary oxidative stress and possibly increase performance with better recovery time.



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The body reduces the oxidative stress of exercise through two main methods. One method utilizes enzymes, which rapidly breaks down or neutralizes the inflammation caused by ROS. The other method utilizes a non-enzymatic combination of the ROS or free radical, with an antioxidant. There are many types of antioxidants, from those stored in the fatty portions of tissue (vitamin E, CO-Q10 and carotene), to those stored in the watery portions of tissue (vitamin C and glutathione). These enzymes and antioxidants are stored in the body and are release at times of oxidative stress. The body builds up the storage of both the enzymes and antioxidants with gradual increased training, proper diet and antioxidant nutritional supplements.

A good method to assess oxidative damage resulting from strenuous exercise is the blood measurement of F2-isoprostanes. These isoprostanes are formed when ROS attack the cells of the body. The isoprostanes can also be used to measure the effectiveness of a supplemental antioxidant. Although the body will increase the availability and utilization of vitamin C and E during times of strenuous exercise, studies have shown mixed results of effectiveness in actual supplementation of these vitamins prior to the exercise. It does seem promising, though, that the natural flavonoids, as found in berries, can reduce oxidative stress during exercise and increase the recovery rate.

If you are interested in a supplement regimen to take while training to increase your enzyme and antioxidant stores, and a list of the recommended flavonoids, please stop by our office Monday through Thursday, during business hours.

Please keep up the regular exercise. At least 30 minutes 4-5 times per week is required to maintain a proper antioxidant defense mechanism, in addition to providing many other health benefits.



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