

Quercetin Reduced Activity-Induced Illness

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For more than 30 years, doctors, researchers and scientists have noticed that in the weeks following high-intensity long-duration competition, athletes seemed to acquire an increased susceptibility to illness.

This problem received a shot of publicity in 1990, when a paper was published that showed one out of every seven athletes who competed in the Los Angeles Marathon sustained an upper respiratory infection in the two weeks following the race. Control runners who did not compete fell ill at a rate of one out of 50.¹

Quercetin

Quercetin is a polyphenolic compound classified as a flavonoid and more specifically, a flavanol. Quercetin has anti-inflammatory, antihistaminic and antioxidant properties. In quercetin-containing foods, the highest levels are located in the skin, outer layers or leaves. This is because sunlight stimulates endogenous production.² An 8-ounce apple contains around 100 mg of quercetin. Other foods high in quercetin include: red grapes, onions (outer layers), berries, tea leaves, green leafy vegetables, capers, citruses, hot peppers and broccoli. The typical American adult diet provides 15 to 25 mg of quercetin a day.³ Quercetin is well-absorbed and has a long half-life (12 to 24 hours).⁴ Quercetin has been used for various conditions, including: prostatitis, pancreatitis, asthma, eczema, gout, cataract, ulcers and hives. Evidence from culture studies shows it possesses antiviral, antibacterial and anticarcinogenic properties.⁵

The Study⁶

A group of 40 male cyclists between 25 and 30 years of age were recruited to study the effects of quercetin. The subjects' workouts averaged 90 minutes a day and totaled between 150 and 170 miles per week. They were divided into two groups of 20. Each group mixed 8 ounces of water to a pre-measured amount of an orange-flavored beverage (Tang) and consumed two servings daily (before breakfast and after dinner). The intervention group's mixture contained 500 mg of quercetin in each serving. The subjects stopped using all nutritional supplements except for the drink for a three-week period while maintaining their normal diets and workouts. They then underwent three consecutive days of supervised three-hour test rides that doubled their normal amount of exercise. Following the test, the subjects continued to use the beverages twice daily for an additional two weeks and resumed their regular workout schedule.

Labratory

There were no differences between groups for blood lymphocytes, granulocytes, leukocytes, leukocyte

subsets and NK cell levels. Plasma cortisol, epinephrine, norepinephrine and myeloperoxidase were measured, all with no differences between placebo and quercetin. Salivary IgA also was measured. Again, there were no differences between groups.

Post-Study Questionnaire

The results for both the control and placebo groups were exactly the same. In each group, nine subjects thought they were taking quercetin, four subjects thought they were taking placebo and seven subjects were unsure.

Upper Respiratory Infection

There were no differences between groups in the three weeks leading up to the protocol. In the two weeks following the three-day test, one subject in the quercetin group contracted an upper respiratory infection while nine placebo subjects became ill.

Summary

Clearly, this study is limited by the small number of subjects. Nevertheless, the results were quite impressive. It will be interesting to see if they can be reproduced. And, if they are, it will be very interesting to see how quercetin assists immunity without affecting any of the biomarkers measured in this study.

References

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