

## Immune System Maintenance

Quercetin reduces illness but not immune perturbations after intensive exercise. Nieman DC, Henson DA, et al. *Med Sci Sports Exerc.* 2007 Sep; 39(9):1561-9.

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**PURPOSE:** To investigate the effects of quercetin supplementation on incidence of upper respiratory tract infections (URTI) and exercise-induced changes in immune function.

**METHODS:** Trained male cyclists (N=40) were randomized to quercetin (N=20) or placebo (N=20) groups and, under double-blind procedures, received 3 wk quercetin (1000 mg.d(-1)) or placebo before, during, and for 2 wk after a 3-d period in which subjects cycled for 3 h.d(-1) at approximately 57% Wmax. Blood and saliva samples were collected before and after each of the three exercise sessions and assayed for natural killer cell activity (NKCA), PHA-stimulated lymphocyte proliferation (PHA-LP), polymorphonuclear oxidative-burst activity (POBA), and salivary IgA output (sIgA).

**RESULTS:** Pre- to postexercise changes in NKCA, PHA-LP, POBA, and sIgA did not differ significantly between quercetin and placebo groups. URTI incidence during the 2-wk postexercise period differed significantly between groups (quercetin=1/20 vs placebo=9/20, Kaplan-Meier analysis statistic=8.31, P=0.004).

**CONCLUSION:** Quercetin versus placebo ingestion did not alter exercise-induced changes in several measures of immune function, but it significantly reduced URTI incidence in cyclists during the 2-wk period after intensified exercise.