Abstract


Vitamin C status and perception of effort during exercise in obese adults adhering to a calorie-reduced diet.

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OBJECTIVE: Moderate energy restriction and exercise are recommended for effective weight loss. Obese individuals oxidize less fat and report a higher perceived exertion during exercise, characteristics that may negatively influence exercise behavior. Because vitamin C status has been linked to fatigability, we compared the effects of vitamin C supplementation on self-reported fatigue and on the respiratory exchange ratio and the Ratings of Perceived Exertion scale during moderate exercise in healthy obese adults adhering to a hypocaloric diet.

METHODS: Twenty adults (4 men and 16 women) were stratified and randomly assigned to receive 500 mg of vitamin C (VC) or placebo (CON) daily for 4 wk while adhering to a vitamin C-controlled, calorie-restricted diet. Feelings of general fatigue as assessed by the Profile of Mood States questionnaire were recorded on a separate day from the exercise session at weeks 0 and 4. Participants walked on a treadmill at an intensity of 50% predicted maximal oxygen consumption for 60 min at weeks 0 and 4, and heart rate, respiratory exchange ratio, and Ratings of Perceived Exertion were recorded.

RESULTS: After 4 wk, the two groups lost similar amounts of weight (~4 kg), and the respiratory exchange ratio was not altered by group. Heart rate and the Ratings of Perceived Exertion during exercise were significantly decreased in the VC versus the CON group (-11 versus -3 beats/min, P = 0.022, and -1.3 versus +0.1 U, P = 0.001, respectively), and the general fatigue score was decreased 5.9 U for the VC group versus a 1.9U increase for the CON group (P = 0.001).

CONCLUSION: These data provide preliminary evidence that vitamin C status may influence fatigue, heart rate, and perceptions of exertion during moderate exercise in obese individuals.

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