

Curcumin and Boswellia Serrata Supplementation result in reduced Inflammation following Eccentric Leg Press Exercise

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ABSTRACT

Repetitive exercise on consecutive days is a key component of many long-term training plans. This type of exercise results in muscle inflammation and soreness that limits the capacity to sustain exercise at a high effort. Several dietary polyphenols have the capacity to manage inflammation and thus supplementation may be an effective component of a long-term training plan. **PURPOSE:** The purpose of this study was to investigate the effect of combined oral supplementation with curcumin and boswellia serrata prior to and following three consecutive days of intense interval exercise. **METHODS:** All protocols were approved by the University IRB committee and participants gave written informed consent. Subjects were supplemented with either active (curcumin=400 mg/d & boswellia serrata=100 mg/d; N=10) or placebo (rice flour; N=7) for 7-d prior to three days of exercise. Each exercise day consisted of 45-min of interval exercise (ladder climbing, cycling, and downhill running). Subjective muscle soreness and muscle strength were evaluated using a visual analog scale and isokinetic dynamometer respectively. Venous blood samples were collected for serum prior to and 1-h after each of three exercise days. Samples were analyzed in duplicate using separate bead-based assays to measure cytokines and myokines (Milliplex®; Millipore-Sigma). Sample preps were analyzed using a multiplex analyzer (Luminex LX200). **RESULTS:** Active resulted in trends toward reduced muscle soreness and improved muscle strength compared to placebo. Active was also associated with transient reductions in serum creatine kinase, MIP-1 α , and IL-6. **CONCLUSION:** These data support the notion that the combined supplementation with curcumin and boswellia serrata may represent an effective means to manage system inflammation during consecutive days of training. More research is needed to understand how curcumin and boswellia serrate may be able to manage inflammation in other exercise models.

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