

Caffeine supplementation and intermittent exercise: effects on white blood cells #4

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Caffeine is a common substance in the diets of most athletes and it is appearing in energy drinks, sport gels, alcoholic beverages and diet aids. The effects of caffeine ingestion prior to endurance training have been extensively studied. However, less is known concerning the effects of caffeine ingestion prior to intermittent exercise. The purpose of this study was to evaluate the effect of caffeine ingestion prior to intermittent exercise on white blood cells in soccer players. 15 professional soccer players completed a double-blind, placebo-controlled experiment. Forty-five minutes before exercise all subjects received 5.5 mg.kg⁻¹ of caffeine (E+C, n=8) or placebo (cellulose; E+P, n=7). The exercise protocol was composed of 12 sets with ten sprints of 20 m each. The rest interval between sprints and between sets was ten seconds and 2 minutes, respectively. Between the 6th and 7th sets the rest interval was of 15 min. Blood samples were collected before and immediately after exercise protocol and the leukocytes were counted in Micros 60 (ABX Horiba) automated hematology analyzer. Anova two-way with Tukey post hoc tests were applied ($p < .05$). Training session resulted in significant percentage increases ($p < .05$) in the total leukocyte count (E+C = 31.1%; E+P = 30.5%), neutrophils (E+C = 44.4%; E+P = 38.3%), and lymphocytes (E+C = 21.9%; E+P = 23.0%), with no significant differences between groups for any variable. The main finding was that the ingestion of caffeine (5.5 mg.kg⁻¹) may not cause greater leukocytes levels above that which occurs through exercise alone.

Key words: soccer; supplementation; leukocytes; neutrophils; lymphocytes.