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The Effects of Caffeine on Cycling Performance in College-Aged Males

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Caffeine is a naturally occurring substance found in foods and drinks and is the most commonly consumed drug in the world (Graham, 2001). Caffeine is also an ergogenic aide, which may enhance an athlete's aerobic endurance, strength, and reaction time (Graham, 2001). **PURPOSE:** The objective of this study was to determine the effects caffeine has on performance. **METHODS:** Four recreationally active male college-aged (20 ± 1.41 yrs) students participated in this single blinded, cross-over study. Each subject was required to attend three exercise sessions. During the first session, the subjects were explained the procedures of the testing and performed a cycle to exhaustion test. During the second and third sessions, the subjects were required to drink two cups of black caffeinated or decaffeinated coffee during the hour prior to the cycle exhaustion test. The subjects' overall RPE, local RPE, and heart rate were taken in five minute increments during each testing session. Two-way repeated measures ANOVA was used to determine differences across conditions and between groups using Microsoft Excel (Microsoft, Redmond, WA). Significance was set at $p < 0.05$. **RESULTS:** There was a statistically significant difference in time to exhaustion between trials for all subjects (CON: 31.20 ± 7.50 min, DECAF: 30.00 ± 0.00 min, CAF: 40.00 ± 10.88 min; $p = 0.006$). There was no significant difference in overall RPE (CON: 14.78 ± 1.21 , DECAF: 15.67 ± 1.72 , CAF: 15.45 ± 2.62 ; $p = 0.89$), local RPE (CON: 16.85 ± 0.36 , DECAF: 17.06 ± 1.47 , CAF: 16.90 ± 1.81 ; $p = 0.99$), or heart rate (CON: 155.55 ± 6.42 bpm, DECAF: 150.84 ± 12.41 , CAF: 149.68 ± 15.32 ; $p = 0.86$) between the three conditions. **CONCLUSIONS:** The results of this study suggest that caffeine in the form of coffee does not have a significant impact on sub-maximal cycling performance.