

Poster presentation

The effect of caffeine ingestion on perception of muscle pain during a sustained submaximal isometric contraction of the quadriceps

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Background

The purpose of this study was to determine the effects of an acute dose of 5 mg/kg of caffeine on perceived pain of the quadriceps during a sustained submaximal isometric contraction.

Methods

A total of 15 low caffeine consuming college aged women (20.5 ± 1.4 y, 66.0 ± 9.0 kg; mean \pm SD) participated in this study. 2–7 d after a familiarization trial subjects ingested, in a double blind random crossover manner, either 5 mg/kg caffeine (Caf) or a placebo (P), 1 h prior to performing a 2 min isometric leg extension at 45% of peak torque using visual cues to maintain force production. Every 15 s subjects rated their level of pain using the Borg CR10 pain scale. Subjects returned to the lab 2–7 d later to repeat the testing with the other condition. Data were analyzed using a repeated measures ANOVA with a Tukey's HSD post hoc.

Results

Caffeine ingestion resulted in a lower pain score at all time points during the 2 min isometric contraction. This difference approached significance at 90 s (Caf = 3.2 ± 1.4 , P = 4.1 ± 1.4 ; $p < 0.10$), and became significantly different at 105 s (Caf = 3.8 ± 1.2 , P = 4.9 ± 1.5 ; $p < 0.05$) and at 120 s (Caf = 4.4 ± 1.5 , P = 5.4 ± 1.5 ; $p < 0.05$).

Conclusion

Acute caffeine ingestion attenuates perception of muscle pain in the quadriceps during a sustained submaximal isometric contraction. This effect becomes more pronounced the longer the contraction is held.