

Abstract

Title: Effect of caffeine on maximal strength of the complex exercises

Objectives: The main aim of this theses is to investigate caffeine's effect on the maximum strength of the deadlift exercise. The sub-objectives of the thesis are to test whether the magnitude of the effect of caffeine differs between the upper half of the body compared to the lower half, and also whether caffeine has an effect on the production of maximal strength after insufficient rest.

Methods: The randomized double-blind study consisted of 1 baseline and 2 experimental sessions . At the start of the experimental sessions, participants were given either caffeine (3 mg/kg) or placebo 60 min before testing. In a randomized order, maximal isometric strength with sufficient rest between reps was measured for the deadlift (IMT) and benchpress (IBP) exercises. Subsequently, maximal isometric strength was measured for the isometric mid-thigh (IMTP) exercise after insufficient rest. A total of 36 healthy resistance-trained men habituated to caffeine consumption participated in this study

Results: RM ANOVA showed that caffeine increased performance at IMT, compared to placebo ($d = 0.229$ [0.61, 0.397]), but not compared to baseline. For the IBP exercise, caffeine has no effect compared to placebo, but baseline session was statistically significantly different from both caffeine ($d = 0.127$ [0.020, 0.235]) and placebo ($d = 0.151$ [0.041, 0.261]). Furthermore, we did not find a statistically significant difference between the effect of caffeine on upper versus lower body maximal strength. Finally, we did not observe a significant difference between caffeine and placebo in the decline in maximal strength performance in IMTP.

Keywords: stimulant, deadlift, benchpress, dose, isometric strength