Abstract

Title: The effect of caffeine on performance during resistance training – A systematic overview

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Background: Products with high content of caffeine has in recent years become popular for optimizing physical performance. Caffeine affects mechanisms in our body which can be beneficial to perform better during exercise, but the theories have not yet been systematically reviewed.

Objective: The purpose of this review article, is to examine the acute effect of caffeine intake before strength training on athletic performance with the outcome muscle endurance.


Selection criteria: Healthy subjects, 16-50 years old, with experience in strength training. Studies with a caffeine intake > 5 mg/kg body weight, which participants performed dynamic strength exercises on a weight > 60% of their 1 RM. Participants would consume the same diet, abstain from caffeine and other supplements within the limited time before the intervention.

Data collection and analysis: Collection of articles is based on inclusion and exclusion criterias and an implement of quality control according to the SBU’s review template for RCT-studies. The final combined weighting and evidence grading was assessed with SBU’s GRADE-system.

Main results: four RCT-studies was included, one with high and three with medium quality. Only one of the studies, who measured muscular endurance for benchpress, showed significantly improved performance. One of the two studies, who measured endurance for legpress, showed a significantly improved performance. One study measured endurance for lat row and shoulderpress, but was not able to demonstrate significantly improved performance.

Conclusions:

- There does not seem to be an effect of caffeine >5 mg/kg body weight on repetitions to failure at bench press, rowing or shoulder press in young people (low evidence ++).
- There is no reliable data on the effect of caffeine >5 mg/kg body weight on repetitions to failure at leg press in young people (very low evidence +).