



The Effects of a Thermogenic Supplement on Resting Metabolic Rate in Healthy Males: Preliminary Results

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ABSTRACT

Males looking to improve their body composition may ingest caffeine-containing supplements for the purposes of elevating resting metabolic rate. The purpose of this study was to examine the effects of a commercially available dietary supplement (containing ingredients that promote thermogenesis) on resting metabolic rate (RMR) in a randomized, double-blind, placebo-controlled cross-over study. **METHODS:** 8 male participants (30.1 ± 10.0 years; 181.1 ± 9.0 cm; 84.8 ± 13.0 kg) participated in this investigation. Each participant underwent two different testing sessions separated by approximately 7 days. On their first visit, participants arrived to the laboratory after an overnight fast and underwent a baseline RMR. Following this, each participant ingested a caffeine-containing dietary supplement (Arnold Iron Cuts™) or a placebo and repeated the RMR assessments at 30, 60, 90, 120, and 180 minutes post-ingestion. The placebo was void of active ingredients known to elevate RMR. Approximately 1-week later, the alternative supplement was ingested and the assessments were repeated in the exact same manner. Data were analyzed via a 2-factor [2x4] within-subjects repeated measures analysis of variance (ANOVA) using SPSS version 22.0. Post-hoc tests were analyzed via paired samples t-tests. The criterion for significance was set at p = 0.05. **RESULTS:** The repeated measures ANOVA revealed a significant effect for time relative to the raw RMR data. Post-hoc analyses revealed that the dietary supplement treatment demonstrated significant elevations in RMR (kilocalories/day) at 30-minutes, 60-minutes, and 180-minutes post-ingestion (p = 0.05) and demonstrated statistical trends at 90 and 120-minutes post-ingestion (p = 0.10). Resting metabolic rate at baseline for the supplement treatment was 1,880 ± 202 kcal/day. At 30, 60, 90, 120, and 180-minutes post-ingestion, the RMR values were 2,004 ± 133; 2,033 ± 92; 2,048 ± 103; 2,013 ± 75; and 2,067 ± 116 kcal/day, respectively. There were no significant elevations (or statistical trends) at any time period in the placebo treatment. **CONCLUSIONS:** The caffeine-containing dietary supplement treatment exerted greater elevations in RMR values as compared to the placebo treatment. Taken on a daily basis, Arnold Iron Cuts™ may increase overall energy expenditure possibly leading to reductions in fat mass over time. Caloric expenditure either significantly increased or demonstrated statistical trends for improvement at each time point following ingestion of the thermogenic dietary supplement, whereas the placebo treatment experienced no change in energy expenditure.

BACKGROUND

Nutritional supplements containing thermogenic properties are commonly used amongst fitness minded individuals in an attempt to facilitate fat loss and increase resting metabolic rate.

The purpose of this study was to investigate the impact of a commercially available thermogenic supplement on resting metabolic rate in males via a randomized, double-blind, placebo-controlled cross-over study.

METHODS

8 male participants (30.1 ± 10.0 years; 181.1 ± 9.0 cm; 84.8 ± 13.0 kg) participated in this investigation.

Participants underwent two different experimental conditions, which was separated by approximately 7 days.

On their first visit, participants arrived to the laboratory after an overnight fast and underwent a baseline resting metabolic rate assessment.

Following the baseline assessment, each participant ingested either a dietary supplement (Arnold Iron Cuts™) or a placebo, and repeated the resting metabolic rate assessments at 30, 60, 90, 120, and 180 minutes post-ingestion.

On the second visit, approximately 1-week later, the alternative supplement was ingested and the assessments were repeated in the exact same manner.

RESULTS

Repeated measures ANOVA revealed a significant effect for time relative to raw RMR data.

Post-hoc analyses revealed that the dietary supplement treatment demonstrated significant elevations in RMR (kilocalories/day) at 30-minutes, 60-minutes, and 180-minutes post-ingestion (p = 0.05) and demonstrated statistical trends at 90 and 120-minutes post-ingestion (p = 0.10).

There were no significant elevations (or statistical trends) at any time point in the placebo treatment.

CONCLUSION

The caffeine-containing dietary supplement treatment (Arnold Iron Cuts™) exerted greater elevations in RMR values as compared to the placebo treatment.

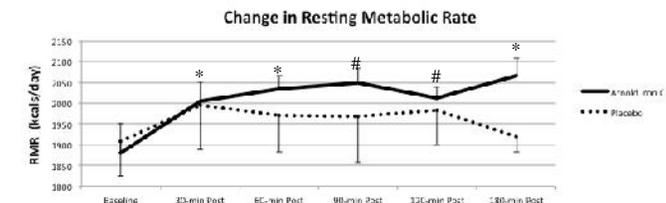
Taken on a daily basis, Arnold Iron Cuts™ supplementation increases overall energy expenditure, which may potentially lead to reductions in fat mass over time.

Caloric expenditure either significantly increased or demonstrated statistical trends for improvement at each time point following ingestion of the caffeine-containing thermogenic dietary supplement, whereas the placebo treatment experienced no change in energy expenditure.

Table 1: RMR (mean ± SD kcal/day) and (% increase in RMR as compared to baseline values) for each supplement treatment

	Baseline	30-minute	60-minute	90-minute	120-minute	180-minute
Arnold Iron Cuts™	1,880 ± 202	2,004 ± 133 (6.6%)*	2,033 ± 92 (8.1%)*	2,048 ± 103 (8.9%)*	2,013 ± 75 (7.1%)*	2,067 ± 116 (9.9%)*
Placebo	1,908 ± 236	1,995 ± 301 (4.6%)	1,971 ± 253 (3.3%)	1,969 ± 316 (3.2%)	1,984 ± 241 (4.0%)	1,919 ± 105 (0.5%)

* Post-hoc statistical trend compared to baseline values (p ≤ 0.10)
Post-hoc statistical difference compared to baseline values (p ≤ 0.05)



* Post-hoc statistical difference compared to baseline values (p = 0.05)

Post-hoc statistical trend compared to baseline values (p = 0.10)



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