

Measuring the Effects of Pre-workout Supplementation on Resting Metabolic Rate.

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Purpose: Supplementation prior to exercise is claimed to increase strength, energy, and focus. This pilot study was conducted to look for and measure a change in resting metabolic rate [RMR] upon taking a common pre-workout supplement. **Methods:** RMR was measured using a Cosmed Quark PFT Ergo. Subjects were tested in the morning following an 8 hour fast. The subjects were then given supplementation and re-tested 20 minutes after ingestion. **Results:** Test subject 1 displayed a very consistent increase in RMR following supplementation averaging +10.50% from baseline. Other subject's results ranged from negligible increases to +7.32% RMR from baseline.

	Sex/Age	Test1RMR	Test2RMR	Change	%Change	Test1 HR	Test2 HR
Subject 1	Male/22						
13-Jun		2764	2994	230	8.32	70	109
19-Jun		1919	2149	230	11.99	61	61
3-Jul		2289	2545	256	11.18	63	70

(Chart 1: initial and post supplementation results on each day for subject 1.)

Conclusions: Ingestion of a pre-workout stimulant can increase RMR. The effectiveness of the stimulant can vary day to day and person to person. Average overall increase in RMR following supplementation was +6% from baseline. Increases in RMR can be partly attributed to caffeine's affect on increasing blood plasma epinephrine which promotes glycogenolysis and lipolysis. Increases in these processes result in an increase in ATP production and utilization, as measured by CO₂ production.

Funding for this project was provided by NIH NCRR INBRE, grant to Delaware 2P20RR016472.