

## Effects of Pre-workout Supplementation on Trained College Weight Lifter's Muscular Performance and Psychological Factors

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Pre-workout supplementation prior to exercise is prevailing within the sports performance environment. However, the effect of pre-workout supplementation on muscle performance or the mechanism responsible for performance improvement is not clear. **PURPOSE:** To examine changes in muscle performance and psychological factors associated with pre-workout placebo supplementation. **METHODS:** Twenty one (age 18-25 years) trained weight lifters volunteered to participate in the study. Prior to the study, all subjects' one repetition maximum (RM) for bench press (BP) and leg press (LP) exercises were obtained using National Strength and Conditioning Association 1-RM protocol. Subjects then performed BP and LP exercises at 70% of their 1-RM until failure under two separate conditions, with and without pre-workout placebo supplementation. On "Pre-workout" supplementation day, placebo supplementation was administered 30 minutes prior to the start of the exercise. Number of repetition performed was used as a measure of muscle performance. Heart rate (HR) and rate of perceived exertion (RPE) were measured immediately after exercise. Prior to exercise, subjects were asked on their self-arousal and confidence level on their upcoming performance using questionnaires. Each condition was separated by a minimum of one week. One-way ANOVA with repeated measures was used to compare the difference between conditions. **RESULTS:** The results demonstrate that the pre-workout placebo supplementation produced modest increase in repetitions performed as well as self-arousal and confidence level.

	LEG PRESS		BENCH PRESS	
	CONTROL	PLACEBO	CONTROL	PLACEBO
Repetition	20.91 ± 8.63	25.95 ± 11.65	17.38 ± 2.85	18.00 ± 2.24
HR (bpm)	147.38 ± 34.067	149.38 ± 23.22	136.52 ± 24.74	127.52 ± 33.03
RPE	16.38 ± 2.60	16.52 ± 2.02	15.67 ± 2.92	15.71 ± 2.28
Self-Arousal	3.26 ± 0.92	3.43 ± 0.68	3.24 ± 1.00	3.71 ± 1.10*
Confidence	20.48 ± 24.00	40.00 ± 36.06*	31.19 ± 27.56	45.00 ± 27.93

\*Significantly different from control condition ( $p < 0.05$ ).

**CONCLUSION:** The notion of taking a "pre-workout" supplement may provide psychological benefits that produce positive outcomes in muscle performance.