

POSTER PRESENTATION

Open Access

Effects of twenty-eight days of resistance exercise while consuming the commercially available pre- and post-workout supplements, NO-Shotgun[®] and NO-Synthesize[®], on body composition, muscle mass and performance, and clinical safety markers in men

Mike Spillane*, Neil Schwarz, Sarah Leddy, Tracie Correa, Melodie Minter, Victoria Longoria, Darryn Willoughby, FISSN

From International Society of Sports Nutrition: 8th Annual ISSN Conference and Expo
Las Vegas, NV, USA. 24-25 June 2011

Background

This study determined the effects of 28 days of heavy-resistance exercise combined with the pre- and post-workout nutritional supplements, NO-Shotgun[®] and NO-Synthesize[®] on body composition, muscle strength and mass, markers of protein synthesis and satellite cell activation, and blood clinical safety markers.

Methods

Nineteen non-resistance-trained males were baseline tested and then randomly assigned to participate in a group that engaged in a resistance training program (3 X 8-10-RM) 4 times/wk for 28 days while also ingesting 54 g/day of placebo maltodextrose (PLC) or 27 g/day of NO-Shotgun[®] and 27 g/day of NO-Synthesize[®] (NOSS). For PLC, 27 g were ingested 30 min prior to exercise and 27 g within 30 min following exercise. NOSS ingested 27 g of NO-Shotgun[®] 30 min prior to exercise and 27 g/day NO-Synthesize[®] within 30 min following exercise. Immediately upon waking on non-training days, PLC ingested 27 g of the supplement, whereas NOSS ingested 27 g of NO-Synthesize[®]. On day 29, participants were subjected to follow-up testing. Data were analyzed with separate 2 x 2 ANOVA ($p < 0.05$).

Results

For dietary intake, there were no significant differences in total calories/day ($p = 0.129$) or in the daily amount of protein ($p = 0.216$), carbohydrate ($p = 0.106$), and fat ($p = 0.665$) between groups. For total body mass, both groups increased with training ($p = 0.01$), but there was no difference between groups ($p = 0.793$). However, NOSS underwent significant improvements in fat mass ($p = 0.226$) and fat-free mass ($p = 0.023$) compared to PLC. Both groups significantly increased muscle strength with training; however, for bench press ($p = 0.023$) and leg press ($p = 0.035$) NOSS was significantly greater than PLC. Serum IGF-1 ($p = 0.038$) and HGF ($p = 0.001$) were significantly increased with training, but were not different between groups. Myofibrillar protein increased in both groups with training ($p = 0.041$), with NOSS being significantly greater than PLC ($p = 0.050$). The levels of Type I, IIA, and IIX MHC were increased in both groups with training; however, Type I ($p = 0.013$) and IIA ($p = 0.05$) were significantly greater in NOSS. Muscle c-met was increased with training for both groups ($p = 0.030$), but not different between groups ($p = 0.496$). For total DNA, there was no difference between groups ($p = 0.322$) and neither group was affected by training ($p = 0.151$). All of the myogenic regulatory factors were increased with training; however, NOSS was significantly greater than PLC for Myo-D (p

Exercise and Biochemical Nutrition Lab, Department of Health, Human Performance, and Recreation. Baylor University, Waco, TX 76798, USA

= 0.038) and MRF-4 ($p = 0.001$). No significant differences were located for any of the whole blood and serum clinical chemistry markers ($p > 0.05$).

Conclusions

When combined with heavy resistance training for 28 days, NO-Shotgun[®] and NO-Synthesize[®] ingested before and after exercise, respectively, significantly improved body composition and increased muscle mass and performance. In addition, this supplementation regimen did not abnormally impact any of the clinical chemistry markers.

Funding

This study was supported by a research grant from VPX, awarded to Baylor University.

Published: 7 November 2011

doi:10.1186/1550-2783-8-S1-P24

Cite this article as: Spillane *et al.*: Effects of twenty-eight days of resistance exercise while consuming the commercially available pre- and post-workout supplements, NO-Shotgun[®] and NO-Synthesize[®], on body composition, muscle mass and performance, and clinical safety markers in men. *Journal of the International Society of Sports Nutrition* 2011 **8**(Suppl 1):P24.

**Submit your next manuscript to BioMed Central
and take full advantage of:**

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at
www.biomedcentral.com/submit

