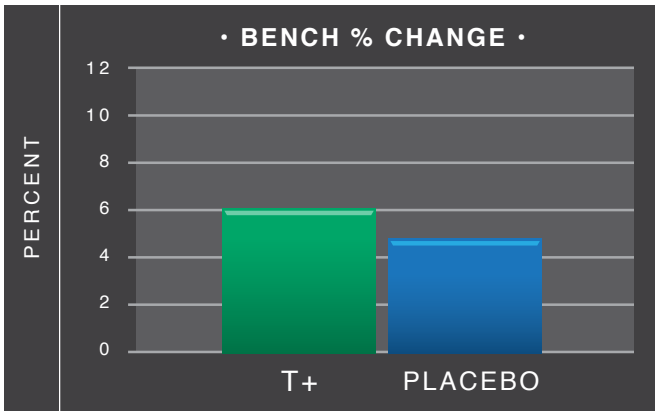

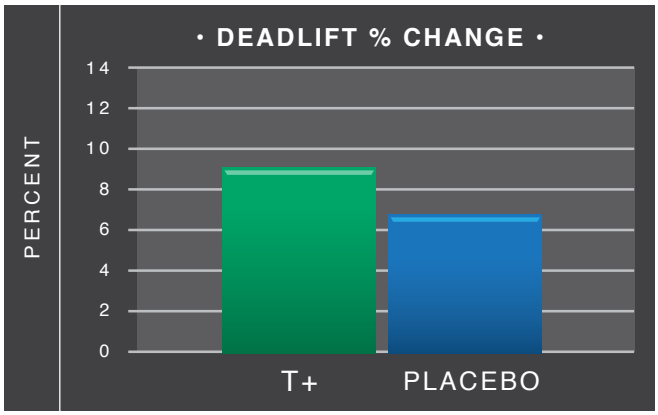

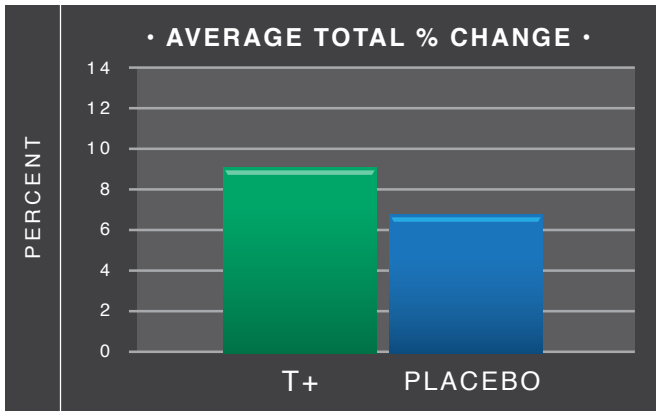

THE IMPACT OF FOUR WEEKS OF T+TM SUPPLEMENTATION ON STRENGTH AND ENDOCRINE MARKERS IN POWER ATHLETES

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Testosterone treatments have been linked to improved performance and body composition; however, potential adverse effects have been reported. Therefore, there has been an increased use of herbal supplementation as a means to naturally boost testosterone. Both the efficacy and safety of these herbal testosterone supplements require further examination. **PURPOSE:** The objective of this study was to determine the impact of T+™ (Onnit Labs, Austin, TX) supplementation on strength and endocrine markers in power athletes. **METHODS:** Resistance-trained, male power athletes (n=28) volunteered to participate in this study. Participants were stratified by total weight lifted for squat, chest press, and deadlift and randomly assigned to either the experimental group (T+; n=14; age, 21.4±3.3yrs; ht, 179.1±5.6 cm; body fat, 18.3±4.7%) who ingested T+ (54 Kcal/14g, 66.3% CHO, 30.1% Protein,0.08 % FAT) or a control group (PL; n=13; age, 21±3yrs; ht, 177.6±4.8cm; body fat, 21.5±6.2) who consumed a placebo (53.2Kcals/14g, 95.1% CHO, 0% Protein, 0% FAT).

One subject was removed from the study due to non-compliance. Supplements were consumed 20 min before each training session and a second dose was consumed two hrs after training. The supplement dosage was based on participant body mass (those<75kg received 14g pre; 75-93.2kg received 14g pre and 7g post; >93.2kg received 14g pre and 14g post). On non-training days, T+ and PL were consumed once with breakfast and once with lunch. Maximal strength (pre/post) and fasting blood samples (pre/mid/post) were collected over the course of the study at the same time of day. **STATICS:** Descriptive data were generated for all variable are expressed as means ± standard deviance. An analysis of variance with repeated measures was used to analyze all data. **RESULTS:** The T+ group showed greater strength increases over time than the PL group (Table 1). Body composition improved over time ($p<0.05$) with no differences between groups. There were no pre to post time or group x time interactions for cortisol, estradiol, testosterone or free testosterone. Two participants reported acne and two reported increased libido in the T+ with no side effects reported in PL. **CONCLUSION:** In young male, power athletes, four weeks of RT and T+ supplementation resulted in significantly greater improvements in total strength and chest press performance than those who supplemented with PL. There were no differences between groups in cortisol, estradiol, total testosterone or free testosterone levels. **PRACTICAL APPLICATIONS:** Trained power athletes may benefit in strength performance after supplementation with T+: however, the mechanism of action does not appear to be due to alterations in serum cortisol, estradiol total testosterone or free testosterone concentrations. **ACKNOWLEDGEMENTS:** The authors would like to thank the FSU Powerlifting team, FSU Rugby Club, Guilana De Almeida, Katie Gorman, Will Hyder, Johnny Silvers, Andrew Simmerling, and Beth Miller. This study was supported by a grant from Onnit Labs to MJO and VCK.

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Table 1. Strength Changes

	T+ (n=14)		Placebo (n=13)		P Value	
Exercise	Pre	Post	Pre	Post	Time Effect	Group x Time
Squat (kg)	119.48±24.84	132.47±26.72	120.45±29.82	129.37±28.98	.0001	.38
Chest Press (kg)	102.27±15.75	108.44±16.30[a]	96.33±22.01	100.87±21.69	.0001	.0001
Deadlift (kg)	157.79±23.05	171.59±22.42	159.09±25.71	169.93±30.07	.0001	.300
Total (kg)	379±58.61	412.5±60.17[a]	375.87±70.07	400.17±75.03	.0017	.0001

[a], $p<0.05$, between groups at the same time-point.