CONSUMPTION OF A TESTOSTERONE-BOOSTING SUPPLEMENT IS SAFE ANDlowers estrogen and cortisol levels
Paul H. Falcone, Jordan M. Joy, Roxanne M. Vogel, Matt M. Mosman, Chad M. Hughes, J. Daniel Griffin, Kacey J. Paulin, Michael P. Kim, Jordan R. Moon
Presented By: Paul Falcone - paul@musclepharm.com - MusclePharm Sports Science Institute

INTRODUCTION
Testosterone’s ability to increase strength and fat-free mass is well documented. Exogenous testosterone administration has been utilized effectively by both hypogonadal [1] men and by eugonadal [2] men. Since young, healthy athletes have been able to increase their muscle mass and strength with testosterone, its use has been banned in most sports. However, sales of testosterone-boosting supplements continue to increase, since exogenous consumption of certain botanicals and naturally-occurring endogenous substances has demonstrated increases in testosterone. For example, fenugreek is an herb that has been used for medicinal and culinary applications for centuries. It is also believed to be an aromatase inhibitor which can lower estrogen levels. Fenugreek supplementation did increase testosterone levels with resistance training over placebo with training, but no changes in muscle mass or strength were observed [2]. Since resistance training can cause an increase in testosterone [4], it is important to investigate a testosterone-boosting supplement in conjunction with resistance exercise, since most athletes would be using it in this way.

METHODS
Participants
Eighteen trained men (age: 25.8 ± 4.3 years; height: 176.7 ± 4.97 cm; weight: 80.35 ± 11.99 kg) completed a double-blind, placebo-controlled study. First, blood was sampled for safety panels, estrogen, and cortisol. For 8 weeks, the TB group (n = 10) consumed a TB twice daily, and the placebo (PLA) group (n = 8) consumed a visually identical placebo in the same manner. After the 8 weeks, subjects returned to the testing facility to provide another blood sample. RESULTS: Regarding safety, no statistically significant changes were measured in hematology other than cholesterol (TB: PRE, 102 ± 2.12 mmol/L; PLA: PRE, 105 ± 1.13 mmol/L; POST: 102 ± 1.89 mmol/L, p = 0.035) and the change in cholesterol was not clinically significant (Clinical range: 97-108 mmol/L). Liver enzymes aspartate aminotransferase (TB: PRE, 24.1 ± 7.94 IU/L; PLA: PRE, 26.0 ± 13.9 IU/L; POST: 28.5 ± 14.7 IU/L) and alanine aminotransferase (TB: PRE, 28.9 ± 7.18 IU/L; PLA: PRE, 22.8 ± 11.8 IU/L; POST: 23.8 ± 12.4 IU/L) demonstrated no statistical differences. Estron (TB: PRE, 228.4 ± 35.9 pg/ml; PLA: POST, 124.0 ± 35.3 pg/ml; p = 0.0166) and cortisol (PRE: 20.5 ± 3.96 μg/dL; POST: 16.6 ± 3.95 μg/dL) decreased significantly in TB, while no changes were observed in PLA. CONCLUSION: A TB supplement is safe and effective at decreasing estrogen and cortisol levels in the blood.

RESULTS
Blood draws were taken via venipuncture by a trained phlebotomist at the blood testing facility. Samples were taken before and after the 10 week supplementation period at the same time in the morning to avoid diurnal variations. Variables analyzed included: testosterone, estrogen, cortisol, white blood cell count (WBC), red blood cell count (RBC), hemoglobin, hematocrit, mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), mean corpuscular hemoglobin concentration (MCHC), red blood cell distribution width (RDW), platelets (per cent and absolute), neutrophils (per cent and absolute), lymphocytes (per cent and absolute), monocytes (per cent and absolute), eosinophils (per cent and absolute), basophils (per cent and absolute), serum glucose, blood urea nitrogen (BUN), creatinine, eGFR, BUN-creatinine, sodium, potassium, chloride, carbon dioxide, calcium, protein, albumin, globulin, albumin-globulin ratio (A/G ratio), bilirubin, alkaline phosphatase, aspartate aminotransferase (AST), alanine aminotransferase (ALT), total cholesterol, triglycerides, high density lipoprotein (HDL), and low density lipoprotein (LDL).

CONCLUSIONS
No blood markers changed to reach clinically significant levels after 10 weeks of consumption of a testosterone-boosting supplement. Also, estrogen and cortisol levels decreased significantly compared to placebo. Due to the hormonal changes induced by the supplement, chronic consumption may result in a hormonal milieu favorable to improved body composition and performance in trained individuals.

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REFERENCES