The Effects of Deer Velvet Antler Supplementation on Body Composition, Strength, and Aerobic & Anaerobic Performance

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Abstract — In the present study, we investigated the physiological and potential performance enhancing effects of New Zealand Deer Antler Velvet (NZDAV) supplementation in men. Thirty-two males between the ages of 18 and 35 with at least 4 years of weight lifting experience were randomly assigned using a double-blinded procedure into either a placebo or NZDAV treatment group. Placebo group members received sugar pills and the NZDAV group received 1500 mg NZDAV once in the morning and immediately prior to bed-time. Random assignment was done in matched pairs (1 placebo; 1 NZDAV). Prior to and immediately following the 10-week supplementation use, each subject participated in a series of measurements. These procedures included the measurement of maximal aerobic capacity (Ý V O2max), maximal power output on a cycle ergometer, a determination of maximal strength (1-RM) for the bench-press and squat, a comprehensive blood chemistry profile, body composition analyses (DEXA), and a 3-day dietary recall. Of the original 32 subjects recruited for this study, 56% of the subjects completed all aspects of the study properly which was evenly divided between the two treatment groups leaving the placebo group n = 9 and NZDAV group n = 9 subjects. At the start of the study, there were no significant differences between the groups in their respective body composition profile variables.

In the NZDAV group, DEXA % body fat (p = 0.04), DEXA Fat Wt (p = 0.07), and Trunk-to-limb Fat Wt ratio (p = 0.02) either significantly declined or neared significance. According to the results for the placebo group, only the 1-RM values for this group's absolute bench (Pre: 123.2 ± 24.0 kg; Post: 128.3 ± 27.5 kg, 4.1% ; p = 0.04) and squat (Pre: 150.5 ± 28.2 kg; Post: 156.6 ± 30.4 kg, 4.1% ; p = 0.04) 1-RM improved after the intervention period. When normalized for kilogram of total body weight, the placebo group did not show any significant differences for the 1-RM measurement in both the bench and squat. In contrast, the NZDAV showed a significant improvement in the 1-RM values in absolute terms and relative to total body weight. In absolute terms, the 1-RM for the bench press increased 4.2% (Pre: 120.0 ± 23.6 kg; Post: 125.0 ± 25.7 kg; p = 0.02) while the squat 1-RM improved 9.9% (Pre: 159.3 ± 42.7 kg; Post: 175.0 ± 43.5kg; p = 0.002) in NZDAV group. In contrast to the placebo group, when 1-RM values were expressed relative to total body weight, the bench press and squat also significantly improved 4.0% and 10.1%, respectively (p = 0.02) in the NZDAV. One of the most interesting findings of this study was the fact that there was also a significant improvement in aerobic capacity in the NZDAV treatment group. In liters • min-1, Ý V O2max increased significantly by 9.8% from the pre- to posttreatment period (4.30 ± 0.45 to 4.72 ± 0.60 liter • min-1; p = 0.002). When expressed relative to total body weight in kilograms, Ý V O2max remained significantly elevated 9.4% (46.5 ± 8.1 to 50.0 ± 8.9 ml • kg-1 • min-1) following the training-supplement intervention. This study's results suggest that NZDAV may have positive effects on body composition and strength/power in resistance training men.