

Poster presentation

Thermogenic effect of Meltdown RTD™ energy supplement in young healthy college women

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Background

The purpose of this study was to examine the acute effects of a high-energy supplement (Meltdown RTD®) on resting oxygen consumption (VO_2), respiratory quotient (RQ), caloric expenditure (kcal), heart rate (HR), blood pressure (BP), and mood in healthy and physically active women.

Methods

Ten female subjects (20.4 ± 0.70 y; 166.9 ± 7.2 cm; 67.0 ± 7.0 kg; $29.6 \pm 6.5\%$ body fat) underwent two testing sessions administered in a randomized and double-blind fashion. During each session, subjects reported to the Human Performance Laboratory after at least 3-h post-absorptive state and were provided either 140 ml of the high-energy supplement (S; commercially marketed as Meltdown RTD®) or placebo (P). Subjects consumed two 70 ml doses of S or P, separated by 30 min. Subjects then rested in a semi-recumbent position for three hours. VO_2 and HR were determined every 5 min during the first 30 min and every 10 min during the next 150 min. BP was determined every 15 min during the first 30 min and every 30 min thereafter. The profile of mood states and questionnaire focusing on alertness, focus and fatigue was determined every 30 minutes. Area under the curve (AUC) analysis was computed for VO_2 , whereas a 3 hour average and an average for each hour was calculated for RQ, kcal from carbohydrate, kcal from fat, total kcal, HR, BP, and mood states.

Results

AUC analysis revealed a significant 10.8% difference in VO_2 between S and P for the 3 hour study period. No significant differences in oxygen consumption were seen in the first hour following ingestion of the supplement. Oxygen consumption was significantly elevated within the second hour (13.9%) and third hour (11.9%) following ingestion. A significant difference in energy expenditure was also seen between S (1.09 ± 0.10 kcal·min⁻¹) and P (0.99 ± 0.09 kcal·min⁻¹) for the 3 hour study period. Although energy expenditure was not significantly different between S and P in the first hour, significant differences between the groups were seen in the second (1.10 ± 0.11 kcal·min⁻¹ and 0.99 ± 0.09 kcal·min⁻¹, respectively), and third hour (1.08 ± 0.11 kcal·min⁻¹ and 0.99 ± 0.09 kcal·min⁻¹, respectively). Significantly higher systolic BP ($p < 0.01$) was observed between S (110.0 ± 3.9 mmHg) and P (107.3 ± 4.4 mmHg) during the three hour study period. No significant differences were seen in HR or diastolic BP at any time point. No significant differences were seen between S and P in any of the mood states measured during the study.

Conclusion

Results indicated a significant increase in energy expenditure in young, healthy women following an acute ingestion of a high-energy supplement. In addition, ingestion of this supplement increases in systolic blood pressure for three hours following ingestion; however, blood pressure values were well within the normal range.

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