

EFFECT OF RESISTANCE TRAINING DOSE ON METABOLIC RESPONSES AND BEHAVIOR HABITS

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Purpose: To compare the acute dose responses of total body resistance training (RT, 1 set vs. 3 sets) on resting energy expenditure (REE), respiratory quotient (RQ), fasting blood free fatty acid (FFA), glucose (G), insulin (I), energy intake (EI), muscle soreness (MS), and free living physical activity (FLPA) at baseline and 24, 48, and 72 hrs after exercise. **Methods:** Nine healthy, previously untrained males participated in this study. All participants performed both a 1 set and 3 set RT protocol (10 exercises, 10RM), with the previously stated measurements taken at each time point. **Results:** Measured REE, FFA, G, and I levels were not significantly different at any time point ($P > 0.05$). Measured RQ was significantly lower (0.81) 24 hours after exercise compared to baseline (0.85) within the 3 sets protocol. There was a trend for increased EI after 3 sets compared to 1 set. Muscle soreness was significantly ($P < 0.05$) greater at the 24 and 48 hour time points after 3 sets. The FLPA was significantly ($P > 0.05$) higher during the 3 sets protocol the day of exercise and during the 24 to 48 hr post exercise period compared to 1 set. **Conclusion:** Three sets resulted in more fat kilocalories burned at rest after exercise compared to 1 set. These participants did not compensate after a higher dose of RT by performing less activity throughout the day, but they increased their caloric consumption.



