

## **Analysis of sugar intake and resting energy expenditure in adult males during a 5-week period**

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High levels of sugar intake have been shown to stimulate energy conservation processes and may progressively enhance body fat storage. **PURPOSE:** To assess the influence of sugar intake on metabolic processes during a 5-week period. **METHODS:** Twenty-nine healthy adult males recorded dietary intake and pedometer (PED) data for two week days and one weekend day at baseline (weeks 1 and 2) and again after 5-weeks. The recorded days were randomly selected each week for each participant. The change (5 weeks – baseline) in sugar intake was recorded and the participants were then divided into two groups based on whether sugar intake was increased (IS; n=10; age: 35.6±3.9 years) or decreased (DS; n=19; age: 34.6±7.8 years) during the 5-week period. Body height, mass, percent body fat (BF%), and resting energy expenditure (REE) were measured at baseline and again at 5 weeks. **RESULTS:** No differences in sugar intake (IS: 59.0±16.4 g; DS: 70.4±29.5 g), PED (IS: 7055.1±2387.0 steps; DS: 7061.1±3881.3 steps), body mass index (BMI) (IS: 27.7±3.8 kg/m<sup>2</sup>; DS: 26.8±3.8 kg/m<sup>2</sup>), BF% (IS: 27.8±6.8%; DS: 24.8±9.3%), or REE (IS: 1628.5±272.4 kcal; DS: 1672.9±252.9 kcal) were found between groups at baseline (P>0.05). Sugar intake, however, was significantly different between IS and DS at 5 weeks (P<0.05). Further, sugar intake significantly increased in the IS group and decreased in the DS group (P<0.05). No other within group differences were detected (P>0.05). No differences between groups were detected for the change in PED (IS: 2644.3±1488.7 steps; DS: 584.3±1080.1 steps), BMI (IS: -0.1±0.5 kg/m<sup>2</sup>; DS: 0.0±0.4 kg/m<sup>2</sup>), BF% (IS: 1.1±2.8%; DS: -0.6±3.0%), or REE (IS: -160.5±310.1 kcal; DS: -37.1±197.4 kcal) (P>0.05). Conversely, the change in sugar intake was significantly different between IS (25.4±17.7 g) and DS (-16.3±12.8 g) (P<0.05). **CONCLUSION:** REE did not change based on sugar intake during the 5-week period. These data, however, present some interesting evidence that lead to further questions regarding sugar intake and metabolic processes. Future research should include more subjects observed over a longer period of time to expand on these data and to explore the potential progressive influence of sugar intake on health and body composition.

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