BASAL METABOLIC RATE IN HEALTHY PEOPLE AFTER WEIGHT LOSS: A RANDOMIZED CLINICAL TRIAL

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Key Words: Basal metabolic rate, Body mass index, Weight loss.

Introduction: The body spends more own life energy per unit time when it has a high basal metabolic rate (BMR). Aim of the study was to evaluate the impact of body mass index (BMI) on BMR in adult healthy people.

Methods: An open prospective clinical randomized controlled trial including 140 adult healthy people (aged 35-65 years) was performed. The healthy people were divided in two groups: Main group (n=80) had BMI 31.8±0.6 kg/m2; Control (n=60) had BMI 25.3±0.5 kg/m2. Then Main group followed a fast weight loss method during 4-week. Primary endpoints were weight loss over a 4-week period, BMR (kcal/day) was measured using a Tanita-SC330S Body Composition Analyzer (Tanita Corp., Tokyo, Japan).

Results: In Main group BMR was equal to 1879.6 ± 48.4, in Control group 1494.4 ± 52.2 ($P<0.0001$). At 4 weeks, people in Main group weight lost 8-15 kg (15% from baseline) was due to reduction of fat mass only, BMI decreased to 24.6±0.4 kg/m2 ($P<0.0001$) and BMR decreased to 1350.5±48.4 or on 30% from baseline ($P<0.0001$). Regression analysis showed that every 1 kg fatty overweight deprives 45 kcal/day of total daily energy expenditure of the body.

Conclusions: People with a larger body mass burn more calories, since the metabolic rate is directly related to the total body mass. A decrease in body fat mass reduces BMR that could increase lifespan in people. Further investigations are required.