World Academy of Science, Engineering and Technology
International Journal of Nutrition and Food Engineering
Vol:11, No:10, 2017

Nutritional Status in Ramadan Influences Body Compositions Differently in Men and Women

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Abstract : During Ramadan Muslims refrain from eating and drinking from dawn to sunset. Transformation of the eating habits cause profound changes in body composition. This study was performed during Ramadan of June-July 2015 with the regular fasting healthy adults (15 women and 15 men). The participants who were not fasting the whole month, have chronic diseases, pregnant and lactated were excluded. All attendances were informed about study. Written informed consent was taken from the voluntary participants. The work was approved by the Ethics and Research Committee of Istanbul Medipol University, Turkey. A questionnaire was conducted to determine the nutritional status, demographic and anthropometric data at the beginning, in the middle and at the end of Ramadan. Statistical Package for Social Sciences version 18.0 (SPSS, Chicago, IL, USA) was used for analyses. The mean ages of women and men were 34.4±9.45 and 28.9±10.55 years respectively. The BMI values (kg/m2) were slightly increased in men (26.5±3.9 to 26.2±3.7) and decreased in women (22.5±3.5 to 23.3±4.5). However the differences in BMI values between genders were not significant. Waist circumferences (WC) (cm) decreased in both women (80.2±14.6 to 79.4±17.7) and men (98.9±8.4 to 95.2±11.0) through the Ramadan. Fat percentages of women (27.0±71) increased in the middle of Ramadan (28.4±7.8) and decreased at the end of Ramadan (27.8±8.3). The fat percentages of men (21.5±6.3) were not affected in the middle of Ramadan (21.5±6.4) however decreased at the end of Ramadan (20.8±6.2). The total change in fat mass from beginning to end of Ramadan was higher in women than in men. The daily energy intake was higher in men than in women during Ramadan. In the middle of Ramadan energy intake (kcal) was reached to the highest level (2057.8±693.1) and at the end of Ramadan it decreased to the beginning level (1656.7±553.2) for men. However, daily energy intake of women slightly decreased from the beginning (1410.0±359.7) to the end (1409.2±366.7) of Ramadan. The comparison of energy intake between men and women was significant in the middle of Ramadan ($p < 0.05$). Water consumptions for both groups were increased in Ramadan fasting period. In comparison with the beginning of Ramadan, daily carbohydrate and fat consumptions increased and the consumption of protein decreased for men and for women at the end of Ramadan. The gender comparison resulted in a significant increase for protein and carbohydrate consumption of men in the middle of Ramadan ($p < 0.05$). In the first two weeks, the daily energy intake, the consumption of carbohydrates and fats seemed to increase for both men and women. However the later days of Ramadan daily fat consumption decreased to the level of beginning consumption levels which may indicate the nutritional adaptation period. In spite of the consumption of protein sources such as meat, poultry and egg increased, the decrease in the total amount of protein consumed in Ramadan may be due to a decrease in the consumption of milk and dairy products. In conclusion, the nutritional habits and preferred foods changed during Ramadan as a result affected the body composition.

Keywords : body composition, fasting, nutritional status, Ramadan
Conference Title : ICNFS 2017 : International Conference on Nutrition and Food Science
Conference Location : Istanbul, Türkiye
Conference Dates : October 26-27, 2017