Impact of improved fat-meat products consumption on anthropometric markers and nutrient intakes of male volunteers at increased cardiovascular risk

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Abstract

Introduction: meat products have been recognized to be adequate matrix for incorporating functional ingredients. The impact of meat products formulated by replacing animal fat with a combination of olive, linseed and fish oils on energy and nutrient intakes and anthropometric measurements were tested in a non-randomized-controlled-sequential study.

Methods: eighteen male volunteers at high-CVD risk consumed weekly 200 g frankfurters and 250 g pâtés during three 4-wk periods (reduced fat (RF); n3-enriched-RF (n-3RF), and normal fat (NF)), separated by 4-wk washout. Energy and nutrient intakes, healthy eating index (HEI), and anthropometric changes were evaluated.

Results: body fat mass rate-of-change and the waist/hip ratio significantly differs ($p = 0.018$ and $p = 0.031$, respectively) between periods, decreasing body fat mass, waist circumference and waist/hip ratio in RF period and increasing body fat mass in NF one (all $p = 0.05$). Significant inverse correlations were observed between rate-of-change of BMI and ideal body weight with dietary carbohydrate/SFA ratio in n-3RF period ($p = 0.003$ and $p = 0.006$, respectively). Initial diets presented low HEIs (means < 60). Carbohydrate, fat and protein energy contribution was 40%, 41%, and 16%, respectively. More than 33% of volunteers did not initially cover 70% of several minerals and vitamins RDAs. Product consumption improved dietary Zn, Ca, retinol equivalent, folate and vitamin B12 contents in all periods, and ameliorated n-3 PUFA contents and n-6/n-3 PUFA ratio over the n-3RF period.