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The role of calorie restriction diet on the fatty acid profile and eicosanoids concentration**Joanna Holowko, Maja Czerwińska Rogowska, Dominika Maciejewska, Karina Ryterska, Karolina Jakubczyk, Daniel Styburski, Joanna Palma and Ewa Stachowska**

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The aim of the study was to investigate the efficacy of 6 week, 2 types of diets: -500 kcal/day Caloric Restriction Diet (CR I) with an -800 kcal/day Caloric Restriction Diet (CR II) on the fatty acid profile and eicosanoids (hydroxyoctadecadienoic acids and hydroxyicosatetraenoic acids) concentration. The study enrolled 94 Caucasian former athletes aged 20-42 who had not been active for at least five years. There were three intervention groups: CR I group (n=32), CR II group (n=34), control group (n=28). In order to evaluate the effect of diet intervention, the following variables were measured: Anthropometrics, basic biochemical variables, fatty acids and their blood derivatives profiles. The CR II group showed significantly lower levels of BMI, total cholesterol LDL, TG, total lipids, insulin and HOMA-IR ($p<0.05$). Subjects consuming the CR I diet significantly decreased their BMI and the level of total lipids ($p<0.05$). The CR II group had a significantly decreased EPA level ($p<0.05$). The CR I group showed a significantly increased level of the DHA ($p<0.05$) and improvement in the omega-3 index ($p<0.05$). These subjects also showed significantly lower concentrations of 15-hydroxyicosatetraenoic acid (15-HETE). Within short time, calorie restriction (-800 kcal) helps to improve lipid variables and insulin resistance. The CR I diet seems to be more advantageous in the decrease of inflammation but does not improve basic biochemical variables. We can conclude that calorie restriction can be a good choice for former athletes, although EPA and DHA supplementation is needed.

Biography

Joanna Holowko is a PhD student of Pomeranian Medical University in Szczecin, Poland. She is currently working as a Dietician in Rehabilitation Hospital of Saint Charles Borromeo in Szczecin. She has published seven papers in reputed journals.

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