ENERGY INTAKES AND MACRONUTRIENT DISTRIBUTION IN CHILD FEMALE AESTHETIC SPORTS ATHLETES
Soric Maroje, Misigoj-Durakovic Marjeta, Pedisic Zeljko
(Faculty of Kinesiology at the University of Zagreb, Croatia)

Because of the need to be lean, athletes competing in aesthetic sports often adhere to diets that can result in low energy and nutrient intakes. Most of the dietary assessments of aesthetic sports athletes have revealed a lower than recommended energy intake (1,2). However, a majority of the studies focus on pubescent girls and not on pre-pubescent athletes. Therefore, as a part of a bigger nutritional survey, the purpose of this study was to assess energy intake of prepubescent girls competing in different aesthetic sports. Forty female aesthetic sports athletes (10 artistic gymnasts – AG, 13 rhythmic gymnasts – RG and 17 ballet dancers – BD) were recruited for the purpose of the study (median age: 10.5 years, range 8-13). Dietary intake was assessed by the food frequency questionnaire and each subject’s height, weight and triceps and calf skinfold thicknesses were measured. Differences between groups were tested using ANOVA, followed by Newman-Keuls post-hoc test.

Artistic gymnasts had lower body fat percentage than either rhythmic gymnasts or ballet dancers (12.3 ± 1.7 vs. 16.1 ± 3.3 and 17.6 ± 4.6 %, respectively, p=0.005). There was no statistically significant difference regarding energy intake between groups (61.4 ± 33.1, 57.5 ± 21.5 and 45.1 ± 18.4 kcal/kg/day for AG, BD and RG respectively, p=0.22). However, athletes’ nutrition did differ in macronutrient contribution to total energy intake. Artistic gymnasts had higher carbohydrate and lower fat contribution to total energy (59 ± 6 % and 27 ± 4 %, respectively) than either ballet dancers (53 ± 4 % and 32 ± 3 %) or rhythmic gymnasts (51 ± 5 % and 33 ± 4 %) (p=0.002 and p<0.001 for carbohydrate and fat, respectively).

Relative energy intakes in this study were higher than those reported in studies investigating adolescent female athletes (29-40 kcal/kg/day)(1,2). Data from other studies dealing with prepubescent gymnasts are in accordance with energy intakes in this study (56-67 kcal/kg/day)(3,4).

In conclusion, energy intake and macronutrient distribution appear to be adequate in all three groups of children. Higher energy intakes in this study, compared to those previously reported, could possibly be attributed to the younger age of subjects.


Keywords: Gymnastics, Nutrition, Exercise