

Abstract

Title

Regime intervention to influence aerobic fitness level of middle age women

Objective

The aim of the work is to evaluate the effect of two-month physical intervention on the aerobic fitness level of middle-aged women and the influence of this intervention on the change of the body composition of individual study participants.

Methods

The tested group consisted of 5 middle-aged women with a sedentary occupation and no regular physical activity. The evaluation of their aerobic fitness and body composition was performed before the start of the intervention. These values were compared to the results of the same tests after the intervention. The values of $VO_2\text{max}$ measured before and after the intervention were used for the evaluation of aerobic fitness. The regression equation, based on the results of 2 km walking test (part of the UNIFITTEST 6-60), was used for the calculation of $VO_2\text{max}$. The methods of bioimpedance (using the portable device Body stat 1500) and anthropometric measurement (body high, weight, circuits) were used for determination of body composition – mainly % FFM and % BF. The physical intervention itself was focused on walking for two months period. The form was used for monitoring of intervention individual exercise units. The group of middle-aged women performed the prescribed physical activity for at least 40 min at least 3 times a week with moderate intensity – 60 % $VO_2\text{max}$ (75 % HRmax). The measurement of average HR during intervention physical units was carried out by the sporttester.

Results

The values of $VO_2\text{max}$ were increased for all 5 participants. The differences of 3 of them were considered as significant. The value of the $VO_2\text{max}$ was $30,4 \pm 8,03 \text{ ml.kg}^{-1}.\text{min}^{-1}$ before the intervention. After the intervention the values increased to $34,3 \pm 6,87 \text{ ml.kg}^{-1}.\text{min}^{-1}$. The whole group average value of $VO_2\text{max}$ was increased by almost $13 \pm 3,8 \%$. The difference of the values of body composition (% BF a % FFM) before and after intervention were not considered as significant. Mean BF percentage before PI was $39,8 \pm 3,1 \%$ after PI $41,1 \pm 3 \%$. The mean percentage of FFM was lower after intervention ($58.8 \pm 2.9\%$) than before PI ($60.1 \pm 3.1 \%$). The proposed walking intervention programme was sufficient to reach the positive impact on the aerobic fitness. However, the reached body composition changes were not considered as significant.

Key words

aerobic fitness, body composition, physical intervention, middle age, $VO_2\text{max}$, walking