

STUDIES IN PHYSICAL CULTURE AND TOURISM
Vol. 13, Supplement, 2006

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CHANGES IN PHYSICAL ACTIVITY OF ELITE TRACK AND FIELD ATHLETES IN SELECTED AGE CATEGORIES

INTRODUCTION

It is generally known that regular physical activity has many physiological, psychological and social benefits, both in short- and long-term. There is ample evidence which proves that physical activity may be a factor directly affecting health and, hence, physical fitness and efficiency of individuals and entire populations [2]. An elderly person should be active, as activity is related to higher self-assessment, and feeling of value and meaning of life, without which there is no satisfaction with life.

Physically active people seem to be in better health and have better body functions as compared with inactive people. People who lead physically active lives at an older age enjoy better health and are less likely to experience an age-related decrease in their capability for performing everyday activities than inactive people [5].

Elderly people are a particularly neglected group in terms of research in the area of physical culture sciences. It is then important to obtain more exhaustive information on the life style and factors affecting health and physical fitness of people doing sports at various ages. The aim of the study was to assess the physical fitness of elite track and field athletes in selected age categories.

METHODS

The data included answers to questionnaire questions related to physical fitness collected from men and women aged 40-59 years. In total, 378 subjects were examined, of which 172 were women and 206 were men. All subjects took part in track and field masters tournaments (World Championships in Puerto Rico –

2003, European Championships in Potsdam – 2002). The subjects were divided into four age categories within each sex group: 40-44, 45-49, 50-54, 55-59. In the groups there were 47, 41, 42 and 42 women; and 52, 52, 51, 55 men, respectively.

The subjects were chosen at random. In order to assess their physical activity questions from the Baecke's questionnaire were used [6]. The questionnaire consisted of questions related to physical activity undertaken at work, physical activity related to doing sports and physical activity undertaken in leisure time.

In the statistical analysis the Mann-Whitney's test for non-related groups was used. The calculations were made in the Calculation Centre of the University School of Physical Education in Poznań using the Statistica 5.1 software package.

RESULTS

The mean values of work physical activity, sports activity and activity undertaken in leisure time by the studied athletes in individual age categories are presented in Figure 1.

The highest index of sports activity for women was noted between the ages of 40 and 44, and in men between 45 and 49 years of age. The highest mean value of work activity index was noted in women aged 55-59 years and amounted to 3.82. And the highest mean value of this index was noted for men between 45 and 49 and amounted to 3.57. The highest index of leisure time activity was noted in both groups between the age of 40 and 44.

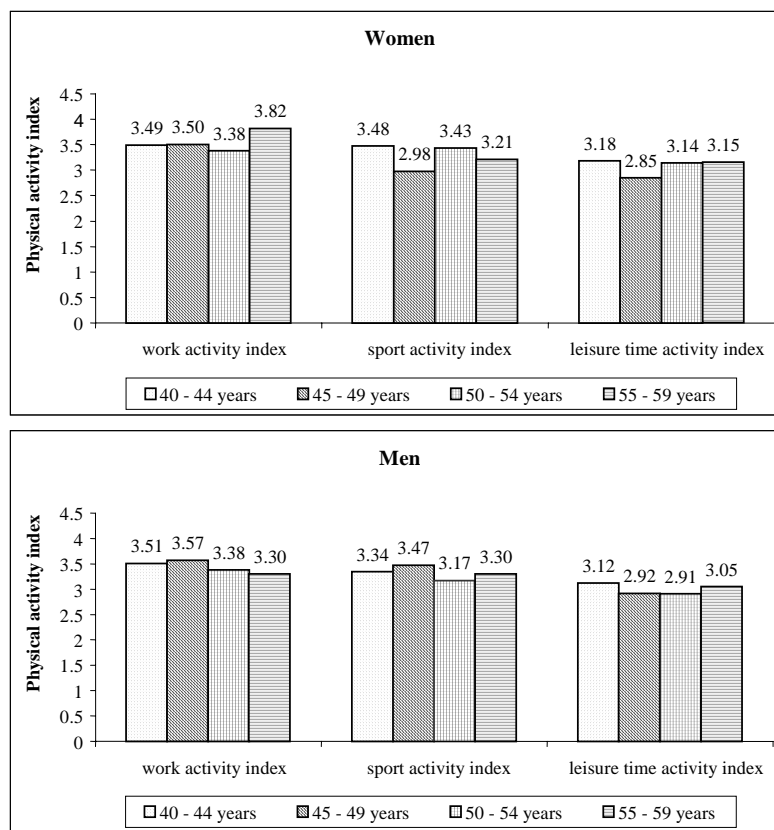


Figure 1. Mean values of work activity index, sport activity index and leisure time activity index in individual age categories in the studied elite athletes

Table 1 presents a comparison of physical activity indices between the studied age categories in men and women. In the analysis of the work activity in studied men significant differences were found between the following categories: 40-44 years/55-59 years ($p < 0.01$), 45-49 years/50-54 years ($p < 0.01$) and 45-49 years/55-59 years ($p < 0.05$). Similar differences were found in the work activity of men between categories: 45-49 years/50-54 years ($p < 0.05$) and 45-49 years/50-54 years ($p < 0.01$). No differences were noted in leisure time activity in the studied men. In regard to the women's work activity, like in men, significant differences were noted between categories of 40-44 years/55-59 years ($p < 0.05$) and 45-49 years/55-59 years ($p < 0.05$) as well as between categories 50-54 years/55-59 years ($p < 0.05$). The women's sports activity was completely different as a significant difference was noted already between 40-44 years/45-49 years ($p < 0.05$) and 45-49 years/50-54 years ($p < 0.05$). Differences in leisure time activity in women were similar to differences in sports activity.

Table 1. Comparison of physical activity indices between the studied age categories of men and women

	Work activity	Sport activity	Leisure time activity
Men			
40-44 years/45-49 years	0.587	0.145	0.286
40-44 years/50-54 years	0.101	0.095	0.114
40-44 years/55-59 years	0.040*	0.627	0.493
45-49 years/50-54 years	0.020*	0.004**	0.752
45-49 years/55-59 years	0.004**	0.045*	0.605
50-54 years/55-59 years	0.454	0.193	0.280
Women			
40-44 years/45-49 years	0.530	0.000**	0.002**
40-44 years/50-54 years	0.873	0.495	0.112
40-44 years/55-59 years	0.000**	0.052	0.012*
45-49 years/50-54 years	0.483	0.005**	0.012*
45-49 years/55-59 years	0.009**	0.219	0.110
50-54 years/55-59 years	0.004**	0.181	0.648

Mann-Whitney's test results and level of significance: ** $p < 0.01$, * $p < 0.05$.

DISCUSSION

The studied experienced athletes were characterised by higher indices of studied activities than their contemporaries, as the studies of other authors indicate [1, 3]. They also achieved higher values than younger individuals aged below 40, in whom the indices of studied activities were noted on an average level of 2.3-2.6. It can be noticed that the work activity indices calculated for the veterans are usually slightly higher than sport activity indices. This may result from the prevalence of professions which require an increased physical activity in veterans or a spontaneous performance of professional activities in a more active way than in people who are not involved in sport. The leisure time activity index is the least emphasised, which probably results from devoting more time to strictly sport activity.

Stephens and Caspersen [8] noted that the level of physical activity decreased with age. In the studies of Singleton et al. [7] no statistically significant differences were found in the level of physical activity according to age categories and education level; however, physical activity lowered slightly with age. After the division into age categories physical activity was very diverse and did not change with age. This is supported by the studies of physical activity of men and women in Canada, in which people aged over 65 years were as active as younger people (or even more active than them) and the level of physical activity did not decrease within during seven-year research [4].

The relations between physical activity and age are not completely clear. The reason may be in the functional status of the elderly. With deteriorating health and loss of fitness, physical activity decreases and the death rate increases in people experiencing functional limitations. On the other hand, people who enjoy good health are more fit and active, live longer and are constitute a higher percentage among the older age categories.

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