DOES LEISURE TIME PHYSICAL ACTIVITY MAINTAIN MUSCULOSKELETAL FUNCTION?
Kääriä Sanna 1, Mälkiä Esko, Leino-Arjas Päivi 1
(Finnish Institute of Occupational Health 1, Finland)

Aim: There is little information on the intensity and frequency of leisure-time physical activity (LTPA) needed to maintain musculoskeletal function in an ageing normal working population. The aim of this study was to examine the relationship between LTPA and change in musculoskeletal function over a ten year period in a cohort of industrial employees aged 17-65 years.

Material and methods: The study sample was drawn from among employees of the Valmet factories in Jyväskylä, Finland. In strata by gender, age, and occupational class, the respondents were arranged in an ascending order according to their predetermined LTPA score to ascertain large enough variation in LTPA, and a systematic, non-proportional stratified sample of 902 subjects was drawn. A total of 646 participants (234 women and 412 men) were included in the prospective analyses. In 1973 and in 1983 the clinical status of the musculoskeletal system was measured by a physiotherapist in a standardised manner. A musculoskeletal function score was calculated by summing all clinical findings. The change in musculoskeletal function over the 10-year period was calculated as the difference in the scores between 1983 and 1973 and classified as -10 – 7 = 0 (little change, 67 %) or >7 =1 (decrease, 33 %). LTPA was measured by questionnaire and interview. A threshold value for LTPA was specified as an activity in which the subjects had been engaged regularly for over 3 months during the past year, and in which the energy expenditure was > 500 kcal/h. The frequency of such heavy LTPA was classified into three groups: none, < 3 times per week and 8805;3 times per week. Logistic regression was used in the statistical analysis.

Results: Over the 10-year period, there were differences in risk for poorer musculoskeletal function between the frequency groups. Among those with heavy LTPA of 8805;3 times per week at baseline, the risk of decreased musculoskeletal function during the 10-year follow-up period was OR 0.4 (95 % CI 0.2-0.7) compared with those with no heavy LTPA, after adjustment for age, gender, and occupational class. The respective figure for those with heavy LTPA < 3 times per week was 0.8 (0.5-1.2). Further adjustment for body mass index, smoking and the musculoskeletal function score at baseline had little effect on the estimates.

Conclusion: Heavy leisure time physical activity with a frequency of 3 or more times per week maintained musculoskeletal function among adults. However, more information is needed to evaluate the minimum intensity level that is required to keep up a good musculoskeletal function among different age groups because ageing has an effect on the body function.

Keywords: Ageing, Physical Activity, Musculoskeletal System