

Physical activity and functional fitness performance of sarcopenia in women over 60 years of age

Summary

The aim of the study was to recognize the scale of sarcopenia among women over 60 living in the Upper Silesia region and to assess its relationship with somatic structure, physical activity and functional fitness.

175 women aged 60-79 participated in the study, from which three groups were selected: without sarcopenia, presarcopenia and sarcopenia. The age of individual groups was similar; the average age was 67.6, 68 and 68.2 years. Half of the respondents were single (50.9%) and the other married (49.1%). In terms of census, women with secondary (52.6%) and higher (30.9%) education dominated, and the least were senior women with primary and vocational education (30.9%).

In the study were measured body height, waist circumference and hip circumference with an anthropometer and metric tape. Body mass and composition were assessed by bioelectrical impedance (BIA) with a four-limb Tanita BC-418 body composition analyzer. The measurements concerned the following somatic features: body weight (BM), lean body mass (FFM), body fat content (FR) and body-triggered resistance (IMP). On the basis of measurements made, the following indicators were calculated: body weight (BMI), waist-hip (WHR).

Monitoring of weekly physical activity was performed with a three-axis ActiGraph GT3X + accelerometer, which records the acceleration of the whole body in the sagittal, frontal and transverse plane. The device was worn by the examined person during 7 consecutive days at hip height and removed only at night and for activities related to contact with water.

Functional performance was assessed by the Senior Fitness Test (SFT) for people aged 60-94. SFT allows to assess the following components of functional fitness: muscle strength of the upper limb, muscle strength of the lower limbs,

flexibility of the upper and lower body, agility and dynamic balance, and aerobic exercise capacity.

Studies show that the height of the body did not significantly differentiate the studied women due to the severity of sarcopenic changes. Body weight and, as a consequence, the BMI index turned out to be more differentiating. Senior women without sarcopenia were more stout. Waist and hip circumferences were dominated by women without sarcopenia, seniors with presarcopenia were smaller, and the smallest with sarcopenia. The severity of sarcopenic changes was associated with greater slimness of women, which is also confirmed by measurements of body fat content. Women without sarcopenia also had the lowest resistance (tissue resistance).

In physical fitness, women with sarcopenia achieved significantly worse results in individual motor tests than other seniors. This is especially evident in agility and dynamic balance, strength of the upper and lower limbs muscles and aerobic exercise capacity. It can therefore be concluded that the severity of sarcopenic changes clearly limits the physical fitness of seniors.

Physical activity does not show significant correlations with sarcopenic changes, except for energy expenditure. However, women without sarcopenia turned out to be more physically active.

Studies have confirmed that fitness and physical activity are important factors in the prevention and counteraction of sarcopenic changes in women of advanced age. It follows the reflection on the need to promote systematic physical activity in the population of women who are older.