S-Ⅳ-2 **A cross-sectional study of sarcopenia in Japanese men and women: association with cardiovascular risk factors and development of prediction models**

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Purpose: We determine reference values for sarcopenia and test the hypothesis that sarcopenia is associated with risk factors for cardiovascular disease. Moreover we develop prediction models of sarcopenia in Japanese men and women.

Methods: A total of 1,488 Japanese men and women aged 18 – 85 years participated in this study. Appendicular muscle mass (AMM) was measured by dual-energy X-ray absorptiometry. Reference values for classes 1 and 2 sarcopenia (skeletal muscle index; AMM/height2, kg•m-2) in each sex were defined as values one and two standard deviations below the sex-specific means of reference values obtained in this study from young adults aged 18-40 years.

Results: The reference values for class 1 and class 2 sarcopenia were 7.77 kg•m-2 and 6.87 kg•m-2 in men and 6.12 kg•m-2 and 5.46 kg•m-2 in women. In subjects both with class 1 and class 2 sarcopenia, body mass index and % body fat were significantly lower than in normal subjects. Despite whole-blood glycohaemoglobin A1c in men with class 1 sarcopenia was significantly higher than in normal subjects, and brachial-ankle pulse wave velocity in women both with class 1 and class 2 sarcopenia were significantly higher than in normal subjects. Stepwise regression analysis indicated that the body mass index (BMI), waist circumference and age were independently associated with SMI in men; and BMI, handgrip strength and waist circumference were independently associated with SMI in women. The SMI prediction equations were applied to the validation group, and strong correlations were also observed between the DXA-measured and predicted SMI in men and women.

Conclusion: Sarcopenia is associated with more glycation of serum proteins in men and with greater arterial stiffness in women. The prediction models of SMI using anthropometric measurement are valid for alternative DXA-measured SMI in Japanese adults.

Key Words; Sarcopenia, CVD risk factors, Prediction models

S-Ⅳ-3 **Exercise program for improving and/or keeping arterial function in middle- aged to older people**

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The decline in arterial function with aging is considered to be part of a physiological process reflected in elevated blood pressure reflectively decreased arterial function. However, the extent and rate of this decline can be manipulated. Various types of exercise programs are recommended for improving and/or keeping arterial function. To establish an exercise prescription/guideline, it is necessary to determine the exercise mode, intensity, frequency, or duration. The purpose of this review is to introduce the meanings of exercise for improving arterial function, and to review the exercise program for reducing the risk of cardiovascular diseases. Regular endurance exercise has beneficial effects in arterial function. Previous research reported an increase in arterial compliance in middle-aged and older men who performed 12weeks endurance training. In contrast to endurance training, high intensity resistance training for 12 weeks decreases arterial compliance. In case of low-intensity circuit training for 8 weeks, arterial stiffness is improved in elderly women. To establish an exercise prescription, it is also necessary to determine the training frequency. Resent study indicated that 2days-per-week group training resulted in a decreased in pulse wave velocity. These current evidences indicate that, in order to improve and/or keep arterial function, endurance exercise or low-intensity circuit training at least two day per week for several weeks should be recommended for middle-aged to older people.

Key words: exercise mode, exercise intensity, exercise frequency, arterial function, elderly