1-B-1 Fitness-related factors associated with survival in older women
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Purpose: This study evaluated the relation between physical fitness and survival. Methods: This prospective cohort study included 74–88-year-old women who were living at home and who reported no disability in activities of daily living. Subjects completed physical fitness tests assessing walking ability, muscular strength, flexibility, agility, and balance. They were administered a follow-up interview 14 years later. Results and Discussion: Of 63 older women, 58 died during that 14-year period. The independent relation between survival 14 years later and the five representative physical fitness measurements (10 m maximum walking time, knee extension muscle strength, hip extension ROM, nerve reaction time, and single-leg balance with eyes open) at baseline was analyzed using multivariate analysis with the Cox proportional hazards model. Maximum walking time (s) was an indicative main physical fitness marker for predicting the survival of elderly women (Age-adjusted hazard ratio; 1.939, 95% CI, 1.611–2.333; p<0.001). When 10 m maximal walking speed is 8.5 s or more, the median survival time of elderly women is 6.75 years, but it is 11.58 years if the time is less than 8.5 s (p<0.001). Among muscular strength, flexibility, agility, and balance, the most influential physical fitness element to survival was agility. Therefore, the functional decline of the nervous system is expected to affect survival strongly. The ability to move rapidly is identified as the main physical fitness factor associated with survival.

Key Words: walking speed, agility, nervous system

1-B-3 Effects of materials and functions of sports clothes on physiological response during unsteady workload exercise
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Purpose: The purpose of this study was to determine HR, BP and oxygen uptake responses in wearing sports clothes with compression and gradation during unsteady workload exercise. Methods: Volunteering to participate in this study were 18 healthy Japanese males, who gave their informed consent prior to participation. Each subject performed cycling exercise for 32 min. They performed the exercise in two portions, a calibration test portion and gradual increase and decrease of workload exercise test portions. The experimental conditions were C-condition and CG-condition. HR, BP and oxygen uptake were measured in both experiments. Results and Discussion: HR at 60% and top of workload in the CG-condition was significantly lower than in the C-condition. At 20%, 40% and bottom workload, however, HR showed no significant difference in either condition. The phase lags to the top the workload in the CG-condition was significantly shorter than on the C-condition. However, phase lags to the bottom of the workload showed no significant difference in either condition. These data suggest that the sports clothes in compression and gradation acts as an advantage of the relative exercise intensity decrease in moderate bicycle exercise.

Key words: sports clothes with compression and gradation, unsteady exercise, physiological response