研究業績　英文表記

和文	
表題	高齢者における筋硬度と関節可動域の関係性の検討
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英文	
Title	Association between the Range of Motion and Passive Property of the Gastrocnemius Muscle-Tendon Unit in Older Population.
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Abstract	Range of motion has been widely known to decrease with age; however, factors associated with its decrease in the elderly population and especially its gender difference have been unclear. Therefore, this study aimed to investigate the factors associated with ankle dorsiflexion range of motion in the older population. Both male (n = 17, mean ± SD; 70.5 ± 4.2 years; 165.4 ± 5.3 cm; 63.8 ± 7.7 kg) and female (n = 25, 74.0 ± 4.0 years; 151.2 ± 4.9 cm; 50.1 ± 5.6 kg) community-dwelling older adults participated in this study. The ankle dorsiflexion and passive torque of both legs were measured using a dynamometer, and shear elastic modulus of the medial gastrocnemius muscle at 0° ankle angle was measured using ultrasonic shear wave elastography. In this study, we defined the passive torque at dorsiflexion range of motion (DF ROM) as the index of stretch tolerance, and shear elastic modulus as the index of passive muscle stiffness. The partial correlation coefficient adjusted by age, height, weight, and side (dominant or nondominant side) was used to analyze the relationship between DF ROM and passive torque at DF ROM or shear elastic modulus of MG in each male and female participant, respectively. Our results revealed that dorsiflexion range of motion was significantly associated with passive torque at dorsiflexion range of motion in both male ($r = 0.455$, $p = 0.012$) and female ($r = 0.486$, $p < 0.01$), but not with shear elastic modulus in both male ($r = -0.123$, $p = 0.519$) and female ($r = 0.019$, $p = 0.898$). Our results suggested that the ankle dorsiflexion range of motion could be related to the stretch tolerance, but not to passive muscle stiffness in community-dwelling elderly population regardless of gender.
keyword	plantar flexor; rate of force development; shear elastic modulus; ultrasound.

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