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Reduced lower extremity ranges of motion are risk factors for falls in older women

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Lower extremity range of motion (ROM) reductions with aging are related to limited balance and functional ability. Therefore the aim of this study was to determine whether reduced lower extremity ROMs are risk factors for falls in older women. 81 community dwelling older women (mean age \pm SD, 70.4 \pm 4.6 years) were recruited in this study. Nine lower extremity ROMs, hip flexion, hip extension, hip abduction, hip adduction, hip internal and external rotation, knee flexion, ankle dorsiflexion and ankle plantar flexion, were measured by an examiner. The falls data from the past 12 months were collected via face-to-face interviews with the participants. 29 (35.8%) participants reported falling during the past 12 months. Compared with those who did not fall, fallers displayed reduced hip flexion, hip external rotation and ankle dorsiflexion ROMs. Discriminant function analysis revealed that reduced hip flexion, hip external rotation and ankle dorsiflexion ROMs were significantly and independently associated with falls and that the discriminant function coefficients for these ROMs were hip external rotation>ankle dorsiflexion>hip flexion. This study provides evidence that reduced hip flexion, hip external rotation and ankle dorsiflexion ROMs are important risk factors for falls in older women. The findings of this study may prove useful in a clinical setting to maximize the potential benefit of interventions aimed at reducing and preventing falls.

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