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# Effects of age related sensory degradation on perception of floor slipperiness and associated slip parameters

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## Abstract

A laboratory study was conducted to determine how sensory changes in elderly people affect subjective assessments of floor slipperiness, and associated friction demand characteristics and slip distance. To relate these parameters to actual slip and fall incidents, 30 subjects from two age groups (young and elderly) walked around a circular track on the slippery and non-slippery floor surfaces, while wearing a safety harness to prevent injury in case of a slip or fall. Prior to the walking experiment, the Sensory Organization Test was performed. During the experiment, subjective assessments of surface slipperiness of the floor were obtained prior to walking and after walking on the floor. Slip distance, required coefficient of friction (RCOF) and adjusted friction utilization (AFU) were assessed utilizing motion analysis and force platform systems. The results indicated that sensory changes in the elderly increased the likelihood of slips and falls more than their younger counterparts. This was due to incorrect perceptions of floor slipperiness, and uncompensated slip parameters such as slip distance and adjusted friction utilization. © 2002 Elsevier Science Ltd. All rights reserved.

*Keywords:* Slips and falls; RCOF; Friction utilization; Perceived slipperiness; Sensory degradation; Gait; Aging

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