

# Relationship between Floor-type Gait Adaptations and Required Coefficient of Friction

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## Abstract

A gait experiment was conducted. Female subjects were requested to walk, with or without shoes, on a walkway at 2.5 km/hr. Four floors and three surface conditions were tested. The ground reaction forces were collected using a force platform. The required coefficient of friction (RCOF) was calculated. The peak RCOF was analyzed. The results indicated that the floor, surface, and shod conditions were all significant factors affecting the RCOF. The interaction effects of the shod  $\times$  floor were also significant. The RCOF for the barefoot conditions was significantly lower than that of the shod conditions. The multiple comparison test results indicated that ceramic and steel floors had both significantly higher RCOF than those of the vinyl and wood floors. For surface conditions, dry surface had significantly the highest RCOF among all surfaces. The RCOF on the wet surfaces were significantly higher than that on the glycerol contaminated surfaces.

Keyword : Slips & fall, gait, required coefficient of friction