

Effects of Floor Material, Surface Condition, and Foot Moving Speed on the  
Coefficient of Friction on the Floor

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Abstract

A laboratory study was conducted to measure the coefficient of friction between the foot and the floor under three surface and two foot sliding speed conditions. A force platform was adopted to measure the ground reaction force (GRF) of the foot on the floor. The coefficient of friction was calculated as the ratio of vertical and horizontal GRF. Five male subjects were recruited. They were requested to slide their right foot on the tested floor which was mounted on the force platform. The results indicated that floor material, surface condition, and foot sliding speed were all significant factor affecting the COF. Ceramic tile had lower COF under all surface and sliding speed conditions as compared to steel, wood, and vinyl tiles.

Keyword : Slip prevention, coefficient of friction, barefoot, force platform