

Friction between Foot and Floor under Barefoot Conditions: a Pilot Study

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Abstract

An experiment was conducted in the laboratory to measure the force plate-based coefficient of friction (COF) between the foot and floor. A female human subject participated in the study. She was sitting with her thigh horizontal and her shank was in a vertical position. Her foot was on a tested floor which was mounted on a Bertec® 4060 force platform in front of her. There were four types of floors and three floor surface conditions. The subject slide her foot with either fast or slow sliding speed using either her left or right foot. The force plate-based COF between the foot and floor was calculated. The results found that the floor, surface condition, and sliding speed were all significant factors affecting the force plate-based COF. The surface condition was the most significant factor among all the factors considered in this study. The difference between the left and right foot was not significant.

Keyword : Slip & falls, friction, force plate-based COF