

## 〈 Review Article 〉

# Plantar Static Pressure Distribution in Healthy Individuals

## Percentiles for the Evaluation of Forefoot Loading

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**Abstract:** *In literature, one finds little scientific statements regarding plantar static pressure distribution in healthy individuals. Miscellaneous studies, however, characterize pathologies of feet and associate those with abnormal static or dynamic plantar load sharing. Our study reveals that healthy individuals show significant age-dependent differences in forefoot and rear foot load measured in standing position. The forefoot and rear foot load of 238 female and 193 male individuals aged between 2 and 69 years were measured. Using a pressure distribution measurement platform, the measurements were taken barefooted in standing position. Those measurements are presented as percentage of the overall load. The measurements within the age groups A1 (2-6 years), A2 (7-10 years), and A3 (11-69 years) showed significantly different forefoot loading means of the left foot (A1, 19.9%; A2, 28.2%; A3,*

*39.7%) and the right foot (A1, 22.6%; A2, 29.7%; A3, 39.6%). The forefoot loadings are graphically displayed as a function of the percentiles 5, 10, 25, 50, 75, 90, and 95. Forefoot loadings are referred to as "prominent" if the measured values lie off the interquartile range; if either below the percentile 10 or above 90 the loadings are referred to as "very prominent." Our study contains significant data regarding the extent of the static load sharing of the forefoot and rear foot of healthy individuals; the data are suited for being standard values to evaluate plantar load sharing.*

The aim of this study is to create a reference of normal static distribution of the foot."