

Anthropometrics of the foot in a cohort of people with diabetes compared to a general population - a descriptive study.

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Introduction: Persons with diabetes often suffer from foot-problems due to angipopathy, neuropathy and foot-deformities. An increase in plantar pressures and altered biomechanics has been reported and are considered as risk-factors for developing ulcers. This study aims to further investigate if any systematic differences in foot-anthropometrics can be found in a group of Swedish people with diabetes in comparison to a Swedish general population. **Methods:** Measurements of foot-length, foot-width and maximum toe-height were gathered in a cohort of 69 patients with diabetes type 1 (n=19) and type 2 (n=50) during 2010-2012. Data from an anthropometric study for the clothing and shoe-industry in 2006 included 629 persons and was used to compare foot-length and foot-width. Foot measures were made using callipers. Data on foot-anthropometrics in persons with diabetes was also compared to foot-length, foot-width and maximum toe-height, measured with a special foot-measurement device, in a study conducted by the Swedish Shoe Industry's Research Institute 1972-1977 (SFI), 200 Swedish men and 200 Swedish women were randomly selected. Furthermore, a group of 79 retired persons (53 women and 35 men) were added to the SFI-groups. Data was also compared to other available antecedent anthropometric foot-research on Swedish general populations.

Results: Foot-length for men with diabetes was 265.9 ± 15.1 mm and 266.2 ± 13.2 for non-diabetes, $p = 0.87$. Foot-width for men with diabetes was: 102.6 ± 5.3 mm and $101.5.2 \pm 5.8$ for non-diabetes, $p = 0.282$. Foot-length for women with diabetes was 246.2 ± 12.6 mm and 242.6 ± 11.7 for non-diabetes $p = 0.09$. Foot-width for women with diabetes was: 96.8 ± 6.1 mm and 93.1 ± 5.9 for non-diabetes, $p = 0.12$. **Discussion:** Analysis of foot-length and foot-width comparing men, with and without diabetes, showed no significant differences. At this early stage only primary results can be made. Further analyses need to be performed to reveal if there are any systematic risk factors in the anthropometric changes of the foot in diabetic persons. However, to predict correspondence with reliable regression, the cohorts must be substantially larger than presented in this study.

Conclusions: Foot-anthropometrics in a group of diabetic persons does not seem to differ from those in a general population.