

Characteristics of Foot Dimensions of Children with Cerebral Palsy and Standardizing Orthosis Size - Through an Anthropometric Pilot Study

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ABSTRACT Children with Cerebral Palsy have foot debilitation resulting in change in foot dimension and impaired gait. To overcome this problem customised orthoses are often prescribed. This increases the lead time of manufacturing of the orthosis as well as the cost. The objective is to study the characteristics of foot dimensions and parameterize the orthoses design to enable CP patients to obtain off the shelf orthoses. Foot dimensions of 86 CP children were captured using a 3D Foot Scanner and cluster analysis statistics and Multivariate regression analysis using SPSS software was performed. CP children foot growth has a pattern as of normal children but varies in magnitude and the boys and girls foot growth rate are similar. Based on the statistical analysis the off the self orthosis can be manufactured in 5 different sizes to fit the targeted population, and furthermore this study may be validate with increased sample size.