

Effect of body position on girths in older adults

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Standards for anthropometrical assessment determine that anthropometric measurements must be taken on the subject assuming a standing position or, sometimes, a sitting position, although not always possible. The effect of body position on anthropometric measurements has not been studied. This is clinically relevant because it may lead to biased results of undernutrition screening tools. The main purpose of this study was to evaluate the effect of body position and symmetry on girth assessment.

A cross-sectional study was conducted on 102 older adults. Measurements were conducted while the subject was standing, lying down and also on both the right and left side of the body. Mini Nutritional Assessment Short-Form[®] screening tool was used to search for eventual score differences according to calf circumference and was assessed with the subject again standing and lying down.

Significant differences were found in regards to body position, though an exception was found for waist and mid-thigh ($p < 0.001$). A high correlation ($r > 0.90$) and high agreement ($k > 0.79$) between the two body positions was found and no differences were found between right and left side of the body for all the body girths.

In conclusion, differences found between body positions do not have impact on nutritional screening for clinical purposes. Furthermore, these data confirm body symmetry for arm girth, calf circumference and mid-thigh girths.