

Verification of Conversion Formulae for MUAC on Skin and Clothing

Syed Arif Kamal*, Shahnaz Feroz Rashid, Ubaid-ur-Rehman, Nida Mumtaz, Zeenat Aziz and Nida Fatima Naqvi
SF-Growth-and-Imaging Laboratory, Department of Mathematics, University of Karachi, Karachi, Pakistan
*sakamal@uok.edu.pk

Background: This paper investigated the feasibility of measurements of mid-upper-arm circumferences (MUAC) on loose-fitting clothing, whereas the standard protocols require the measurements to be performed on bare skin. For cultural reasons it is, sometimes, not feasible to take measurements on bare skin for peripubertal/adolescent girls as part of field studies conducted in semi-private settings.

Methods: MUAC measurements were taken on 88 children (47 boys, 41 girls), age range 6-10 years. 2 measurements were taken on each child, one with left arm covered with loose-fitting clothing covering the arm and the other on bare skin using tailor's tape maintaining the same environmental conditions in the morning hours (9 am to 12 noon).

Results: This study has provided MUAC-measurement standard for children 6-10-year old. The relationship between bare-skin and loose-fitting MUAC has a goodness of fit of 99.7%.

Conclusion: Results of this study indicated that MUAC of children measured lie in the category of nourished. The formula is applicable only if one layer of clothing of uniform thickness is worn.

Keywords: Anthropometry, calibration, children, mid-upper-arm circumference, nutritional status

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