

Anthropometric measurements in children

- It is almost impossible to provide a blanket rule or set of guidelines for the use of anthropometric measurements in children, as the particular measurement or technique to be used will depend on what needs are to be assessed. However, no matter which measurement is made, probably the most important aspect is the accuracy and reproducibility of the measurement. Considerable attention needs to be placed on ensuring the adequate training of the persons carrying out the measurements and the accuracy of the instruments being used.
- Further, adequate norms or reference values need to be available. There is still considerable debate about the use of NCHS growth charts when comparing heights and weights of South African children. Nevertheless, comparisons should be made using well established reference values. Weights and heights/lengths are the commonest assessments of nutritional status in children; however, they are often poorly done with inadequate attention being taken to ensure accuracy.
- In the neonatal period, the common measurements are those of weight, length (difficult to measure) and skull circumference. Weight gain is often used as a proxy for linear growth, but this is not reliable.
- In the field, quick assessments of wasting in young children may be made using mid-upper arm circumference, but a large number of undernourished children will not be detected by this measurement.
- Assessment of body fat can be made using skin-fold thickness measurements at different sites. Further, the determination of body mass index has gained in popularity. Other techniques include dual energy X-ray measurements of body composition and electrical impedance measurements.
- It must be remembered that pubertal development plays an important role in the growth and development of children, thus if children in the adolescent years are to be assessed, a pubertal developmental assessment or an assessment of bone age may be appropriate.
- Skull circumference measurements are most frequently made in the young child as the sutures are open and the size of the skull may reflect changes in the intracranial contents.

Prof John M Pettifor

Dept of Paediatrics and Child Health, University of the Witwatersrand
and Director: MRC/WITS Mineral Metabolism Research Unit