Waist Circumference: Diagnostic Tool for Health Risk in Children

Using waist circumference (WC) as a screening measure for identifying children at health risk is rare in South African children; therefore this study identified children with a WC above the 90th percentile. The WC of 1136 school children (548 boys) aged 9-13 years in Central Pretoria, South Africa, were measured using standard procedures. The percentiles of WC based on those from the National Health and Nutrition Examination Survey (NHANES) III [1] was arbitrarily used to screen for those at risk factors of central obesity.

Waist circumference (WC) is a commonly used measure of central obesity [2] because it is a good predictor of abdominal fat and is more closely related to the development of cardiovascular diseases (CVD) and type 2 diabetes (T2D) mellitus [3].

However, it is observable that unlike body mass index (BMI), WC measurement is seldom taken in most South African schools, nor does its prognostic role have been widely used in screening for health risk factors in children, especially in developing countries. This might be largely attributed to the non-availability of commonly defined criteria of WC in children, compared to BMI. Screening for WC in children might provide useful information in terms of public health policy, in designing strategies to reverse adverse WC trends among children. The analysis in the present identifies 20.6% of the children with a WC above the 90th percentile judged to be centrally obese (*Table* I).

This data, though cross-sectional and descriptive, is a pointer to the likely presence of CVD risk factors among the sample children. This is alarming and calls for serious attention. Evidence for predictive validity of childhood WC as an indicator of risk for adult morbidity is provided by a recent study from the Fels Longitudinal Study [4].

The inclusion of WC in the screening protocol to estimate the prevalence of central adiposity in school-age children should be a prime priority. Such information would provide an indicator of the future health of the children, and would aid in instituting appropriate remedial strategies for those at risk factors of central obesity.

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TABLE I PROPORTION OF CHILDREN WITH A WAIST CIRCUMFERENCE ABOVE 90TH PERCENTILE*

	Boys (n = 548)	Girls (n = 588)	Total (n = 1136)
Waist circumference below the 90th centile	438 (38.6)	464 (40.8)	902 (79.4)
Waist circumference above the 90th centile	110 (9.7)	124 (10.9)	234 (20..6)

Excess WC defined using NHANES III criteria.