

## Centripetal fat patterning in Nigerian children

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(Received: 7 September 2008 Revision Accepted: 15 August 2009)

### Abstract

The purpose of this study was to examine age and gender differences in waist-stature ratio (WSR) as a measure of centripetal fat patterning in Nigerian children. A cross-sectional study of 2015 children, aged 9-12 years of age who were attending primary schools in Makurdi, Nigeria was undertaken. Anthropometric measurements included body mass, stature and waist circumference. WSR decreased with age in boys ( $p \leq 0.05$ ) with the mean WSR being significantly higher at age nine ( $p \leq 0.05$ ) compared to girls. The girls had significant lower WSR ( $p \leq 0.001$ ) at age 11 compared to boys. No significant differences in WSR were found at ages 10 and 12 in both boys and girls. The proportion of children whose WSR exceeded the 0.500 boundary value was for boys, 9.85% and girls 17.75%. Compared to the boys, girls had higher proportional WSR (5.28% and 6.56%) exceeding 0.500 cut-off values at ages 10 and 11, respectively. Inconsistent gender differences in  $WSR \leq 0.500$  were observed in both categories of children at all ages. The prevalence of  $WSR \leq 0.500$  was evident in this sample at all ages, suggesting the existence of central body fatness in the children. The findings demonstrate that WSR can be used as an alternative measure to body mass index to screen children for risk of metabolic disorders.

**Key words:** *Waist circumference, waist-to-stature ratio, central fatness, children.*

### Introduction

The increasing prevalence of overweight and obesity in childhood and adolescence is a global health issue because of the associated health problems in childhood and the conjecture that these conditions may be antecedents of adult diseases (Mundt *et al.*, 2006) such as hypertension, heart disease, diabetes, respiratory disorders and psychological and social complications which have now become prevalent in childhood (Styne, 2001). There is also evidence that the pattern of body fat distribution at an early age, particularly accumulation of intra-abdominal fat, may be important in increasing the risk for a variety of metabolic disturbances later in life (Caprio *et al.*, 1996; Goran & Gower, 1999).