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### Identification of the Anthropometric Index that Best Correlates with Fasting Blood Glucose and BMI in Post-Pubescent Female Nigerians

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#### Abstract

The association between anthropometric indices and the incidence of metabolic disturbances varies between age groups and races. In this study, we report the relationship between fasting blood glucose (FBG) and some anthropometric markers of body mass and central obesity in a population of postpubescent female Nigerians (16-23 years). After obtaining written consent from each of the 178 subjects; and the completion of a questionnaire on individual demographics, we collected the following anthropometric data: waist circumference (WC), hip circumference (HC), height (H), and weight (W). We also estimated the body mass index (BMI), waist to hip ratio (WHR), and waist to height ratio (WHtR). Fasting blood glucose (FBG) was estimated using a glucometer. The mean FBG was 83.65 mg/dl and this was best positively and significantly correlated with BMI ( $r=0.15$ ;  $P<0.05$ ) in this population. Besides, among other obesity markers, WHtR was most strongly and significantly correlated with BMI ( $r=0.70$ ;  $P<0.05$ ). Our data shows that in young (post-pubescent) female Nigerians, the best anthropometric indicator of FBG (and thus of metabolic status), is the BMI, and this is most strongly correlated with WHtR in this particular population.

**Key words:** Fasting blood glucose; Anthropometric index; Post-pubescent Nigerians; BMI; WHR; WHtR

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