

## **Derivation of anthropometric cut-off levels for defining cardiovascular disease risk in Sri Lankan adults**

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### **Abstract :**

**Objectives:** Anthropometric cut-offs derived for Caucasians may not be applicable to other populations .such as South Asians with higher CVD risk. To define population specific anthropometric cut-off values to define CVD risk in Sri Lankan adults.

**Methods:** A nationally representative sample of 4532 noninstitutionalized adults aged >/18 years was analyzed. Body mass index (BMI), waist circumference (WC), waist-to-hip ratio (WHR), blood pressure was measured by standard methods. Overnight fasting venous blood samples were collected for glucose, high density lipoprotein cholesterol (HDLC) and triacylglycerol measurements. Oral glucose tolerance test (OGTT) was also preformed. Cut-offs values were derived to provide combined maximum sensitivity and specificity used Receiver Operation Characteristic Curve (ROC) analysis.

**Results:** The age-adjusted BMI, WC, WHR were significantly associated with all cardiovascular risk factors ( $p < 0.001$ ). Cut-off values for BMI, WC and WHR for males were 20.7kg/m<sup>2</sup>, 76.5cm and 0.89 respectively. The respective values for females were 22.0 kg/m<sup>2</sup> , 76.3cm and 0.85. The common cut-off value for BMI for males and females was 21.5 kg/m<sup>2</sup> . Similarly, WC and WHR cutoff values for both males and females were 76.3cm and 0.87 respectively. The proposed Asian and Caucasian anthropometric cut-off levels showed lower sensitivity and higher false classification as compared to newly derived cut-offs.

**Conclusions:** All three anthropometric indices BMI, WC and WHR indicate CVD risk. We propose the following anthropometric cut-offs points to identify high CVD risk level and for public health intervention among Sri Lankan Adults: BMI >/21.5Kg/m<sup>2</sup>, WC >/76 cm and, WHR >/85(women) and 0.90 (men)