

## Derivation of BMI and waist circumference cut-off values for Sri Lankan adults

Katulanda, P; Jayawardena, MANAAD; Lamabadusuriya, D; Sheriff, MHR; Matthews, DR

### Abstract :

**Introduction:** Anthropometric cut-off values derived for Caucasians would be less sensitive to define obesity in Non-Caucasians. We aimed to derive BMI and WC cut-offs for Sri Lankan adults.

**Methods:** Data were from a nationally representative sample of 4276 subjects without known diabetes. Presence of  $\geq 2$  of dysglycaemia (fasting glucose  $\geq 5.6$ mmol/l; 2-hr post OGTT glucose  $\geq 7.8$ mmol/l), elevated blood pressure ( $\geq 130/85$ mmHg/antihypertensive therapy), low HDLC (males 1.7mmol/l) was considered as having high cardiovascular disease (CVD) risk. Receiver operating characteristic (ROC) curve analysis was performed using SPSS to identify BMI and WC cut-offs with optimal sensitivity and specificity to predict high CVD risk.

**Results:** The mean age, BMI and WC were 45.2 years, 21.8kg/m<sup>2</sup> and 77.7cm. The area under the curve (AUC) for BMI for both males (M) and females (F) were 0.71 (P<0.0001) . AUC for WC were M: 0.71, F: 0.72 (p<0.0001) The BMI cut-off for all adults was 21.5kg/m<sup>2</sup> and that for males and females were 20.7 kg/m<sup>2</sup> and 22.0 kg/m<sup>2</sup> respectively. The WC cutoff for men and women were 76.5cm and 76.3cm respectively. The sensitivity for the new BMI cut-off in predicting high CVD risk was 66% compared to 34% for the cut-off for overweight (25kg/m<sup>2</sup> ) for Caucasians. The sensitivities for WC cut-offs recommended by the International Diabetes Federation for Asians (M: 90cm, F: 80cm) were M: 27% and F: 57%.

**Conclusions:** Population specific anthropometric cut-offs are more sensitive in identifying those with higher CVD risk in Sri Lankans compared to those derived for Caucasians.