

Waist-to-tallness ratio (WTR) is the best anthropometric indicator of cardiovascular risk - Findings from the DETECT study

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Obesity is associated with various cardiovascular risk factors and effective treatment of obesity has been shown to reduce cardiovascular risk. For many years the body mass index (BMI) has been established as the standard to measure obesity. More recently however, waist circumference (WC) as a more sensitive measure for visceral obesity, has been proposed as a more appropriate indicator for cardiovascular risk. To test the predictive value of BMI, WC, hip circumference, waist-to-hip ratio and waist-to-tallness ratio (WTR) for cardiovascular risk factors we examined 48,353 primary care patients as part of the DETECT study. DETECT (www.detect-studie.de) is a cross-sectional clinical-epidemiological study with a prospective-longitudinal component in a nationally representative sample of N=3,795 primary care settings (response rate (RR): 60.2%) and N=55,518 patients (RR: 95.5%). All patients completed a standardized clinical and lab assessment by their physicians, including questionnaires for patients and diagnostic screening measures. A subsample of patients (N=7,519) also completed a standardized laboratory screening program and was followed-up over 12 months. Receiver-operating characteristics (ROC) analysis for calculating AUC and cut-offs for all anthropometric parameter and 18 single or combined cardiovascular risk factors and diseases. The WTR was found to be most strongly associated with most risk factors in males and females. A cut-off for the WTR of 0.53 for women and of 0.55 for men revealed both, highest specificity and sensitivity for overall-cardiovascular risk. As a consequence the measurement of the WTR as a simple and the most reliable predictor of cardiovascular risk in primary care is suggested.