

# Predictive ability of waist circumference and waist-to-height ratio for cardiometabolic risk screening among Spanish children

Arellano-ruiz P.

García-hermoso A.

García-prieto J.C.

Sánchez-lópez M.

Vizcaíno V.M.

Solera-martínez M.

An excess of fat mass has been associated with adverse cardiometabolic risk factors. Different anthropometric measures have been proposed as alternative non-invasive measures for obesity-related cardiometabolic risk. To evaluate the magnitude of association between waist circumference (WC) and waist-to-height ratio (WtHR) with cardiometabolic risk factors and metabolic syndrome and to determine the WtHR cutoff associated with a more favorable cardiometabolic risk profile in Spanish children, data were taken from a cross-sectional survey conducted in 2010 among 848 schoolchildren aged 8–11 years from 20 public schools in the province of Cuenca (Spain). Anthropometric variables, glucose, insulin, triglycerides (TG), high-density lipoprotein cholesterol (HDL-C), systolic (SBP) and diastolic blood pressure (DBP) and metabolic syndrome (MetS) were also analyzed. WtHR and WC had a good accuracy for TG, insulin, and MetS. The diagnostic odds ratio ranged from 2.95 to 9.07 for WtHR and from 5.30 to 27.40 for WC. The main result of the present study suggests that both WtHR and WC could be used as a screening tool to identify children with cardiometabolic abnormalities. © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

Anthropometric indicators

Metabolic risk factors

Obesity

glucose

high density lipoprotein cholesterol

insulin

triacylglycerol

anthropometric parameters

Article

blood pressure

cardiometabolic risk

child

controlled study

cross-sectional study

diagnostic test accuracy study

diastolic blood pressure

female

human

major clinical study

male

metabolic syndrome X

predictive value

receiver operating characteristic

risk factor

screening

sensitivity and specificity

Spaniard

systolic blood pressure

waist circumference

waist to height ratio