High HOMA-IR, adjusted for puberty, relates to the metabolic syndrome in overweight and obese Chilean youths

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Objective: To determine how the homeostasis model assessment of insulin resistance (HOMA-IR) is related to metabolic risk in a sample of overweight and obese Chilean youths accounting for Tanner stage. Methods: A cross-sectional study assessing 486 overweight and obese youths (aged 5-15 years) recruited from the University of Chile, Pediatric Obesity Clinic. We measured anthropometry, Tanner stage, HOMA-IR, and laboratory tests related to metabolic risk. HOMA-IR was categorized by quartile for children (Tanner stages I and II) and adolescents (Tanner stage III and above) from a normative Chilean sample. Results: Children and adolescents with HOMA-IR in the highest quartile were likely to have higher body mass index (BMI) Z-scores, elevated waist circumference, systolic and diastolic blood pressure, and triglycerides and low high-density lipoprotein. HOMA-IR had good negative predictive value for characteristics of the metabolic syndrome (MetS; 0.82). In a multivariate regression model,