

Sleep-disordered breathing and the metabolic syndrome in overweight and obese children and adolescents.

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OBJECTIVE: To assess whether sleep-disordered breathing (SDB) is a risk factor of the metabolic syndrome (MS) in children and adolescents who are overweight and to examine whether the severity of SDB was independently associated with glucose intolerance, insulin resistance, and/or dyslipidemia. **STUDY DESIGN:** Consecutive subjects who were overweight or obese underwent polysomnography, fasting blood sample, and oral glucose tolerance test (for calculation of area under the curve [AUC]). SDB was defined as a respiratory disturbance index ≥ 2 . MS was present when ≥ 3 of these factors were present: waist circumference ≥ 90 th percentile; fasting glucose level ≥ 110 mg/dL; triglyceride level ≥ 110 mg/dL; high-density lipoprotein cholesterol level ≤ 40 mg/dL; blood pressure ≥ 90 th percentile. **RESULTS:** A total of 104 subjects were included in the study (44% boys; 58% prepubertal; mean age, 11.1 \pm 2.6 years; 69% obese). Mean SaO₂ (odds ratio, 0.54) and SaO₂nadir (odds ratio, 0.89) were independent, significant predictors of the presence of MS. Multiple regression showed significant associations between SaO₂nadir and high-density lipoprotein cholesterol level, mean SaO₂ and both AUC glucose and triglyceride levels, and between the percentage of total sleep time with SaO₂ $\geq 95\%$ and cholesterol level, while controlling for adiposity and sex, puberty, or both. **CONCLUSION:** This study supports the hypothesis of an interaction between SDB and metabolic abnormalities, independent of estimates of body fat distribution, in children and adolescents who are overweight and obese.

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