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## **Waist circumference predicts the occurrence of sleep-disordered breathing in obese children and adolescents: a questionnaire-based study.**

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**BACKGROUND AND PURPOSE:** To assess the presence of sleep-disordered breathing (SDB) in a population of obese children and adolescents and to investigate the role of fat distribution in predicting SDB. **PATIENTS AND METHODS:** One hundred and thirty-two obese children and adolescents, aged 5.0-14.2 years, were consecutively referred to the Department of Pediatrics of the Second University of Naples for screening of obesity. The control group consisted of 453, sex- and age-matched lean subjects selected from local schools in Campania region. The sleep disturbances scale for children (SDSC) questionnaire was used to evaluate SDB prevalence. In all subjects, waist circumference, triceps and sub-scapular skin folds were measured, and Z-scores were calculated. **RESULTS:** Obese subjects showed significantly higher SDB and sleep hyperhydrosis (SHY) scores than controls. The Z-score of waist circumference correlated with SDB ( $r=0.32$ ;  $P=0.006$ ) and SHY factor scores ( $r=0.37$ ;  $P=0.005$ ), while the Z-score of body mass index (BMI), triceps and sub-scapular skin folds were not correlated with any SDSC factor scores. Subjects in the higher tertile for Z-score of waist circumference had a significantly higher risk for developing SDB (OR 1.9; 95% IC 1.8-3.2) and SHY (OR 2.1; 95% IC 2.0-4.5). **CONCLUSIONS:** Waist circumference is a more reliable index than total adiposity and subcutaneous fat in predicting the risk of obese children to develop SDB.

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