



## **Sleep-disordered breathing in overweight and obese children and adolescents: prevalence, characteristics and the role of fat distribution.**

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**AIMS:** To determine the prevalence of sleep-disordered breathing (SDB) in a clinical sample of overweight and obese children and adolescents, and to examine the contribution of fat distribution. **METHODS:** Consecutive subjects without chronic lung disease, neuromuscular disease, laryngomalacia, or any genetic or craniofacial syndrome were recruited. All underwent measurements of neck and waist circumference, waist-to-hip ratio, % fat mass and polysomnography. Obstructive apnoea index  $>$  or  $=1$  or obstructive apnoea-hypopnoea index (OAH)  $>$  or  $=2$ , further classified as mild ( $2 <$  or  $=$  OAH  $< 5$ ) or moderate-to-severe (OAH  $>$  or  $= 5$ ), were used as diagnostic criteria for obstructive sleep apnoea (OSA). Central sleep apnoea was diagnosed when central apnoeas/hypopnoeas  $>$  or  $= 10$  s were present accompanied by  $> 1$  age-specific bradycardia and/or  $> 1$  desaturation  $< 89\%$ . Subjects with desaturation  $<$  or  $= 85\%$  after central events of any duration were also diagnosed with central sleep apnoea. Primary snoring was diagnosed when: snoring was detected by microphone and normal obstructive indices and saturation. **RESULTS:** 27 overweight and 64 obese subjects were included (40 boys; mean (standard deviation (SD)) age 11.2 (2.6) years). Among the obese children, 53% were normal, 11% had primary snoring, 11% had mild OSA, 8% had moderate-to-severe OSA and 17% had central sleep apnoea. Half of the patients with central sleep apnoea had desaturation  $< 85\%$ . Only enlarged tonsils were predictive of moderate-to-severe OSA. On the other hand, higher levels of abdominal obesity and fat mass were associated with central sleep apnoea. **CONCLUSION:** SDB is very common in this clinical sample of overweight children. OSA is not associated with abdominal obesity. On the contrary, higher levels of abdominal obesity and fat mass are associated with central sleep apnoea.

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