

## ENURESIS- A NEW COMORBIDITY OF CHILDHOOD OBESITY?

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**Introduction:** Obese children are at increased risk to develop severe comorbidities, including: Type 2 Diabetes Mellitus, Obstructive Sleep Apnea (OSA), Attention Deficit/Hyperactivity Disorder (ADHD) and variable psychopathology.

Enuresis prevalence is increased in these specific medical conditions.

This study aims to assess the association between obesity and enuresis in children and adolescents.

**Methods:** A prospective study was performed among 344 subjects, aged 7-18 years. A questionnaire evaluated nocturnal enuresis, comorbidities and sociodemographic data. 281 subjects completed the questionnaires, 158 were normal weight, 37 overweight ( $85 \leq \text{BMI} \leq 95$  percentiles, Body mass index (BMI), for age and gender) and 86 obese ( $\text{BMI} \geq 95$ th percentile).

Outcome measures: height, weight, BMI and BMI-Z-score (BMIZ), prevalence of enuresis, association between enuresis and gender, family history, voiding dysfunction, ADHD, OSA and sociodemographic variables.

**Results:** Enuresis was present in 14 (8.8%) of normal weight subjects, 6 (16%) of overweight and 26 (30%) of obese youth. A significant independent risk for enuresis was present in obese children ( $\text{OR} = 6.5$ , 95% CI (2.67-15.78)) compared to normal weight [ $P < 0.0001$ ]. One unit increase in BMIZ, increases the risk for enuresis by OR of 2.14,  $P = 0.00008$ , 95% CI (1.46-3.12).

Male gender [ $\text{OR} = 2.84$ ,  $P = 0.028$ , 95% CI (1.10-5.58)], first degree relative with current/past enuresis [ $\text{OR} = 4.24$ ,  $P = 0.003$ , 95% CI (1.62-11.08)], voiding dysfunction symptoms [ $\text{OR} = 3.067$ ,  $P = 0.041$ , 95% CI (1.05-9.00)] and ADHD [ $\text{OR} = 2.31$ ,  $P = 0.051$ , 95% CI (0.99-5.34)] increase the subjects risk to suffer from enuresis.

**Conclusions:** Enuresis is more prevalent among obese children. The joint risk factors support the hypothesis of a relation between the two entities. Due to this association, enuresis should be clarified during the primary workup of every obese child and adolescent.