

**Obesity and diabetes in children and adults with Down Syndrome:
data from a large diabetes centre in the UAE**

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Background

Down syndrome (DS) is the most common chromosomal abnormality. Obesity and type 1 diabetes mellitus (T1DM) are known to be more prevalent in individuals with DS than the general population. Limited data is available on the prevalence of type 2 DM (T2DM) in DS.

Objectives

This study aims to investigate the prevalence of obesity and DM in children and adults with DS seen at Imperial College London Diabetes Centre, UAE.

Methods

Individuals diagnosed with DS on the centre's database were included in this study. Information including weight, height, body mass index (BMI), diabetes status, and pancreatic autoantibody status were reviewed. Data were analysed separately for paediatric (age 0-19 years; BMI percentile computed and category-matched based on Centre for Disease Control standards) and adult (age >19 years) groups, and are presented as median (range).

Results

A total of 77 subjects {[n, paediatric=42 (18 males), age 12.0 (3-19) years, weight 36.3 (11.3-119) kg, height 1.3 (0.8-1.7) m, BMI 22.6 (13.6-49.0) kg/m²]; [n, adult=35 (17 males), age 25.0 (20-43) years, weight 73.6 (49.8-128.0) kg, height 1.5 (1.3-1.6) m, BMI 34.2 (26.7-48.1) kg/m²]} were identified. In the paediatric group, 22 (52.4%) were overweight (23.8%) or obese (28.6%); six (14.3%) had T1DM with positive GAD antibodies; and one (2.4%) had T2DM. Amongst adults, all 35 (100.0%) patients were overweight (25.7%) or obese (74.3%); one (2.9%) had T1DM with positive GAD and normal IA-2 antibodies; and eight (22.9%) had T2DM.

Discussion

This study demonstrates higher prevalence of overweight and obesity in both children and adults compared to the overall UAE population. Furthermore, rate of T1DM is significantly higher in the paediatric group. Although data may not be representative of the DS population in the UAE in general, our results suggest the need for aggressive weight management and regular medical examination among individuals with DS.