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Title: Prevalence of sleep apnoea, sleepiness and behavioural/emotional disturbances in adults with Down's syndrome in Scotland

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Body: Introduction Adults with Down's syndrome (DS) are predisposed to sleep apnoea (SA). Prevalence is, as yet, unknown. Aims and objectives To assess prevalence of SA, sleepiness and behavioural and emotional disturbances in adults with DS in Scotland. Methods A sleep questionnaire, including the pictorial Epworth Sleepiness Scale (pESS) and subscales of the Developmental Behaviour Checklist for Adults (DBC-A), was sent to 650 adults (age ≥ 16 yrs) with DS. All respondents were offered sleep studies (Embletta® Gold, Embla Systems LLC). Standard statistical analysis was undertaken. Results Response rate was 42% (246 valid). 16 respondents had existing SA; 11 were treated. Mean age was 31 ± 11 years. BMI was 30 ± 7 kg/m², higher in females ($p=0.009$). Mean pESS score was 7 ± 5 , with males sleepier ($p=0.016$). 176 respondents reported snoring; 85 snored often or frequently. 60 reported apnoeas. To date, 23 patients (15 males) have had sleep studies, 20 being valid. Mean age was 26 ± 9 yrs. Mean BMI was 30 ± 7 kg/m²; females were heavier ($p=0.001$). Median AH (apnoeas+hypopnoeas per hour in bed) was 28.6 (IQR 14.8-48.2). Median ODI ($\geq 4\%$ O₂ desaturations per hour in bed) was 6.5 (IQR 2.1-30.9). Snorers scored higher on pESS ($r=0.459$, $p=0.042$) and DBC-A disruptive subscale ($r=0.463$, $p=0.040$). BMI correlated with the anxiety/antisocial subscale ($r=0.606$, $p=0.010$). Conclusion This is the first population survey of SA in DS adults. Females were less sleepy than males, despite being more obese. Snoring was associated with sleepiness and disruptive behaviour. Heavier patients were more anxious. The study is ongoing. Acknowledgements Chief Scientist Office, Scotland; Fondation Jérôme Lejeune, France.