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Diet, physical activity and sedentary behaviour in 11–13 year old UK adolescents: The Gateshead Millennium Study

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Obesity remains a global public health challenge. Recent survey data suggest that 33.9% of English 10–11 year old children are overweight or obese⁽¹⁾, and do not meet recommendations for physical activity⁽²⁾ (60 minutes moderate-to-vigorous intensity physical activity (MVPA) daily⁽³⁾ or aspects of dietary intake⁽⁴⁾ (5 portions of fruit and vegetables daily). The purpose of the current study was to measure prevalence of overweight and obesity in adolescents, and describe their dietary intake, physical activity (PA) and sedentary behaviour (SB) in relation to UK health recommendations.

Cross-sectional analysis of the Gateshead Millennium Study (GMS), a longitudinal birth cohort recruited in 1999/2000 in northeast England⁽⁵⁾. Height and weight were measured and body mass index (BMI) and BMI z score derived⁽⁶⁾. Dietary intake was measured on two occasions using an age-appropriate, computerised, self-completion 24-hr recall (SCRAN24)⁽⁷⁾. Nutritional output is generated automatically from the associated database. PA and SB were objectively measured over seven days using Actigraph GT1M accelerometers to provide overall PA (mean accelerometer counts per minute (cpm)), time spent in MVPA and time spent in sedentary behaviours (SB). All data were collected in 2012.

Of 530 children taking part, complete data were available for 374 (48% male). Mean age of the participants was 12.5 years. BMI (19.8) and BMI z score (0.60) were similar in males and females, 66 (17.6%) were overweight, and 74 (19.8%) were obese. Mean time spent in MVPA was 22 min·d⁻¹, with just 14 adolescents (3.7%) averaging 60 min·d⁻¹ (12 male 2 females). Males were significantly more active than females for all variables, and females spent more time in sedentary behaviours than males (87.5% v. 85.3% $P < 0.001$). Females consumed significantly less energy than males ($P < 0.001$) and less energy from fat ($P = 0.001$), but % energy from fat was similar at approx. 31% energy. Mean intake of fruit and vegetables was 1.3 portions, with only 23 (6.1%) of the sample achieving 5 a day, 68 (18.2%) consumed no fruits or vegetables over the 2 days recorded.

In this sample of secondary school adolescents, public health guidelines for physical activity and diet were not met, and levels of overweight and obesity were high. The challenge to increase adherence to public health guidelines to improve adolescent health remains.

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