

SHORT COMMUNICATION

Increasing levels of excess weight among children in England

TJ Lobstein^{1*}, WPT James¹ and TJ Cole²

¹International Obesity TaskForce, London, UK; and ²Centre for Paediatric Epidemiology and Biostatistics, Institute of Child Health, London, UK

Excess weight in children is thought to be widely prevalent and to be increasing. An analysis of the data for children collected in the Health Survey for England in 1998 shows that, using international definitions of overweight and obesity, one child in 25 is obese and one child in five is overweight (including those that are obese). Between 1994 and 1998, the prevalence of overweight children grew from about 13 to 20%. The prevalence of excess bodyweight among children in England appears to be rising at an accelerating rate.

International Journal of Obesity (2003) 27, 1136–1138. doi:10.1038/sj.ijo.0802324

Keywords: childhood; overweight; prevalence; England

Excess bodyweight in children is widely prevalent in economically developed countries^{1,2} and appears to be increasing in virtually all countries for which data are available.³ The most recent published report on the prevalence of overweight and obesity among British children using the definitions recommended by the International Obesity TaskForce (IOTF) is that of Chinn and Rona⁴ which gave figures for 1974–1994. However, the most recent representative survey involving more than a thousand children of each sex is the Health Survey for England 1998,⁵ and this provides an opportunity to update the earlier figures and examine the data for trends.

We have analysed the data for body mass index (BMI) for children in the 1998 survey and report the results here. Definitions of overweight and obesity in children are based on those of Cole *et al.*,⁶ in which BMIs are defined for children aged 2–18 y which are equivalent to BMIs of 25 and 30 for adults (aged over 18 y). We interpolated additional BMI cutoff points between the published figures and compared these with the actual BMIs reported for children, at the time they were measured (an additional tenth of a year was added to the child's age at interview to allow for a delay of up to 5 weeks before the child was measured at a follow-up

nurse's visit). Data were filtered to remove duplicate reporting errors and BMI extreme outliers (BMIs under 8 or over 40). From the results we calculated the percentage of children who were overweight or obese for each sex and for each year of age from 5 to 17 y inclusive.

The results are shown in Table 1 and Figure 1. Figure 1 shows how the prevalence of excess weight (overweight and obesity combined) tends to increase from around 10% to around 15% in boys, and from around 15% to around 20% in girls, during the prepubertal period and then to stabilise or decline in the postpubertal period for both genders.

Chinn and Rona⁴ reported data on children in England and Scotland for the period 1974–1994 using the same methodology and definitions of overweight and obesity. Comparisons may be made for children in England aged 7–11 y in their studies and in the present one. Figure 2 shows the results. In the 1998 survey, prevalence of overweight (including obesity) among boys aged 7–11 y was 17.0% (95% CI 14.1–19.9%) and among girls of this age range it was 23.6% (95% CI 20.1–27.1%). For both genders this is a highly significant statistical increase on the earlier surveys, with prevalence rates rising some 60% since 1994 and by 150% since 1984.

It is possible to speculate over the cause of this accelerating trend, and to suggest various environmental and social changes that may be leading to a reduction of energy expenditure and/or an increase in energy intake. The BMI measures seen in 1998 indicate that the risk of accumulating excess bodyweight was greater for those children growing up

*Correspondence: Dr TJ Lobstein, International Obesity Taskforce, 231 North Gower Street, London NW1 2NS, UK.

E-mail: childhood@iotf.org

Received 22 January 2003; revised 11 March 2003;

accepted 14 March 2003

Table 1 Numbers of children and mean (s.d.) of BMI in each age group

Age group (y)	Boys		Girls	
	N (total 1484)	BMI: mean (s.d.)	N (total 1398)	BMI: mean (s.d.)
5-5.9	113	16.3 (1.13)	107	16.3 (1.74)
6-6.9	119	16.2 (1.67)	126	16.3 (2.17)
7-7.9	144	16.6 (2.09)	115	16.6 (2.23)
8-8.9	129	17.0 (2.79)	113	17.2 (2.32)
9-9.9	123	17.2 (2.30)	112	18.0 (3.20)
10-10.9	118	17.9 (3.06)	109	18.4 (2.96)
11-11.9	115	18.5 (2.73)	120	19.5 (3.35)
12-12.9	112	19.6 (3.48)	93	20.7 (4.34)
13-13.9	102	20.1 (3.41)	89	21.1 (3.46)
14-14.9	86	20.4 (3.16)	123	21.6 (4.08)
15-15.9	112	20.7 (2.94)	102	22.2 (4.28)
16-16.9	111	22.2 (3.53)	98	22.4 (4.00)
17-17.9	100	22.4 (3.82)	91	22.8 (3.38)

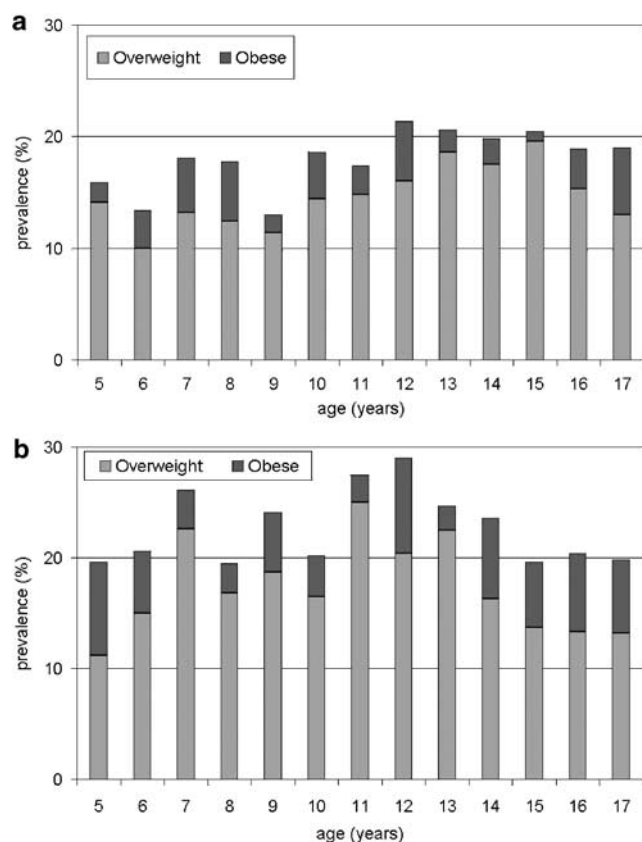


Figure 1 Prevalence of overweight and obesity among boys (a) and girls (b) in England, 1998.

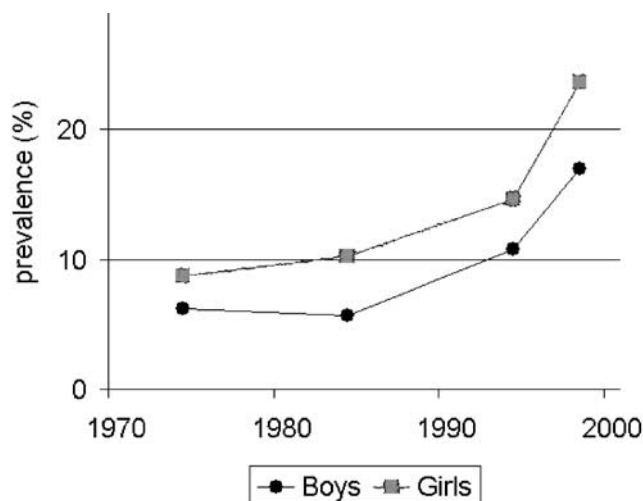


Figure 2 Rising trends in overweight (including obesity) among children aged 7-11 y, in 1998 compared with surveys in 1974, 1984 and 1994.

in the 1990s than it was for children growing up in earlier decades.

The costs of overweight and obesity during childhood to the health services and to society at large have not been calculated. A report by the UK National Audit Office⁷

predicted that social and health sector costs of adult obesity in England would rise to £3.6bn annually by 2010. However, this prediction did not take account of the accelerating trends in children who will be adults before 2010, and the consequent reduction in average age for the development of obesity-linked diseases such as type II diabetes. The trends reported in the present paper predict a sharp increase in the costs of treating overweight and obesity-related diseases before 2010. There is a clear and urgent need for policies to be introduced to ensure that the present trends are halted and reversed.

Acknowledgements

The work reported here was supported by the International Obesity TaskForce and the Medical Research Council.

References

- 1 Ogden CL, Flegal KM, Carroll MD, Johnson CL. Prevalence and trends in overweight among US children and adolescents, 1999–2000. *J Am Med Assoc* 2002; **288**: 1728–1732.
- 2 Guillaume M, Lissau I. Epidemiology. In: Burniat W, Cole T, Lissau I, Poskitt E (eds) *Child and adolescent obesity: causes and consequences, prevention and management*. Cambridge University Press: Cambridge; 2002. pp 28–49.
- 3 Ebbeling CB, Pawlak DB, Ludwig DS. Childhood obesity: public health crisis, common sense cure. *Lancet* 2002; **360**: 473–482.
- 4 Chinn S, Rona RJ. Prevalence and trends in overweight and obesity in three cross sectional studies in British children, 1974–94. *BMJ* 2001; **322**: 24–26 [<http://bmj.com/cgi/reprint/322/7277/24>].
- 5 Department of Health. *Health survey for England 1998*. The Stationery Office: London; 2000 [<http://www.archive.official-documents.co.uk/document/doh/survey98/hse98.htm>].
- 6 Cole TJ, Bellizzi MC, Flegal KM, Dietz WH. Body mass index in children worldwide: cut-off points for overweight and obesity. *BMJ* 2000; **320**: 1240–1243.
- 7 National Audit Office. *Tackling obesity in England*. Report by the Comptroller and Auditor General. The Stationery Office: London; 2001. p 17 [http://www.nao.gov.uk/publications/nao_reports/00-01/0001220.pdf].