



Obesity and the facts

***An analysis of data from the
Health Survey for England 2003***

Conducted by the Social Issues Research Centre

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Social Issues Research Centre
28 St Clements Street
Oxford OX4 1AB UK
+44 1865 262255
group@sirc.org

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1. Introduction

The recent government White Paper “Choosing Health”¹ stresses the need to respond to the “rapid increase in child and adult obesity over the past decade.” The House of Commons Select Committee on Health report on Obesity² similarly noted the Royal College of Physicians’ warning that “... if the rapid acceleration in childhood obesity in the last decade is taken into account, the predicted prevalence in children will be in excess of 50%.” Professor Philip James, chair of the International Obesity Task Force (IOTF), told an EU conference on Obesity Strategy on January 25th 2005 that “it (obesity) took off in the 1980s and looks as if it was accelerating in the last five to 10 years. It’s beginning to look as if we have an exponential rise.”

There seems little doubt that there are more overweight and obese children and adults today than there were in the 1970s and the 1980s. However, the extent of the problem and the long-term health impacts are often subject to hype and exaggeration. The official Center for Disease Control and Prevention in the United States, for example, was recently forced into an embarrassing 10% reduction in its estimate for obesity-related deaths, blaming a ‘computational error’.

2. The Health Survey for England 2003 – the data

Recent data from the annual Health Survey for England 2003³, published by the Department of Health on December 14th 2004, suggest that it is time for a similar re-think in this country. While it is routinely claimed that there has been a ‘rapid acceleration’ of obesity in children since the 1990s, official survey data do not bear this out.

The survey contains population data by age group for BMI and other variables (1993 – 2003 for age 16+ and 1995 – 2003 for age <16) and the emerging picture is very different from that painted by the Government, the Select Committee on Health and the International Obesity Task Force. The facts for children are these:

- The average weight of boys aged 3-15 years in 1995 was 32.0kg. In 2003 it was 31.9kg. For girls the figures were 32.0kg and 32.4 kg respectively.
- The average 15 year old boy weighed 60.7kg in 2003, compared with 58.8kg in 1995. For 15 year old girls the figures were 58.9kg and 58.5kg respectively.

¹ Choosing Health: making healthier choices easier, UK Department of Health, November 2004

² Published 27th May 2004

³ Summary data from the study are available at <http://www.dh.gov.uk/assetRoot/04/09/89/15/04098915.xls>

We can conclude from these figures that there have been no significant changes in the average weights of children over nearly a decade. This can be taken as evidence that there has been no 'epidemic' of weight gain, since an epidemic would certainly have affected average weights.

The BMI trends are similarly flat, as shown in Figures 1 and 2 below. For boys there were some very modest increases in average BMI, most noticeably among those aged 14. Here, however, the average gain over the nine year period from 1995 to 2003 for this group was 1.7 BMI. A very similar and quite stable pattern is evident for girls.

Figure 1. Average BMI for boys aged 5 to 15.

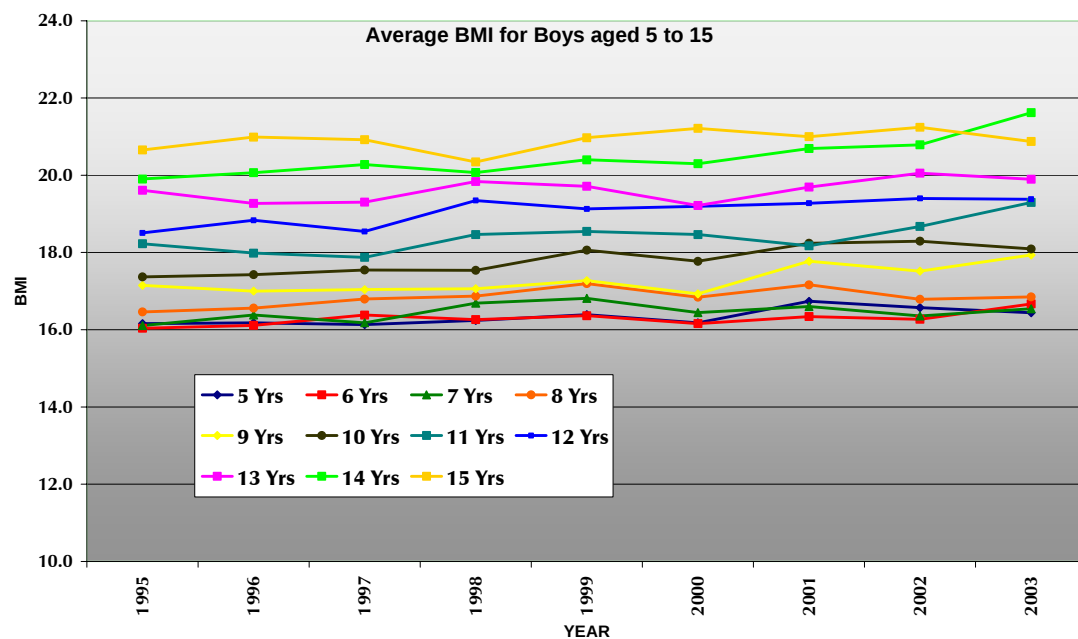
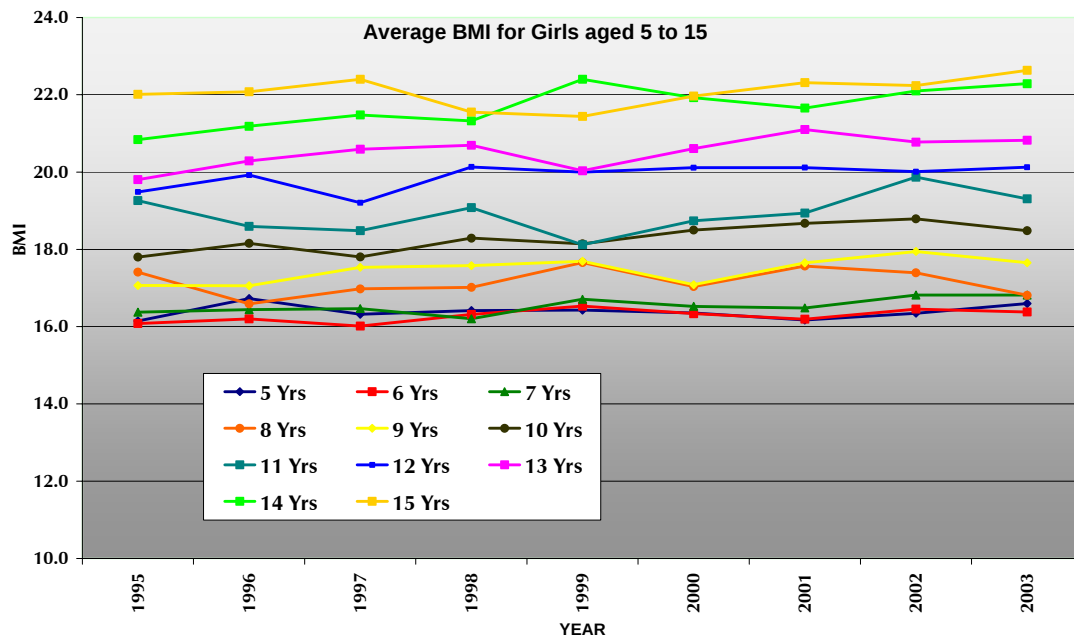
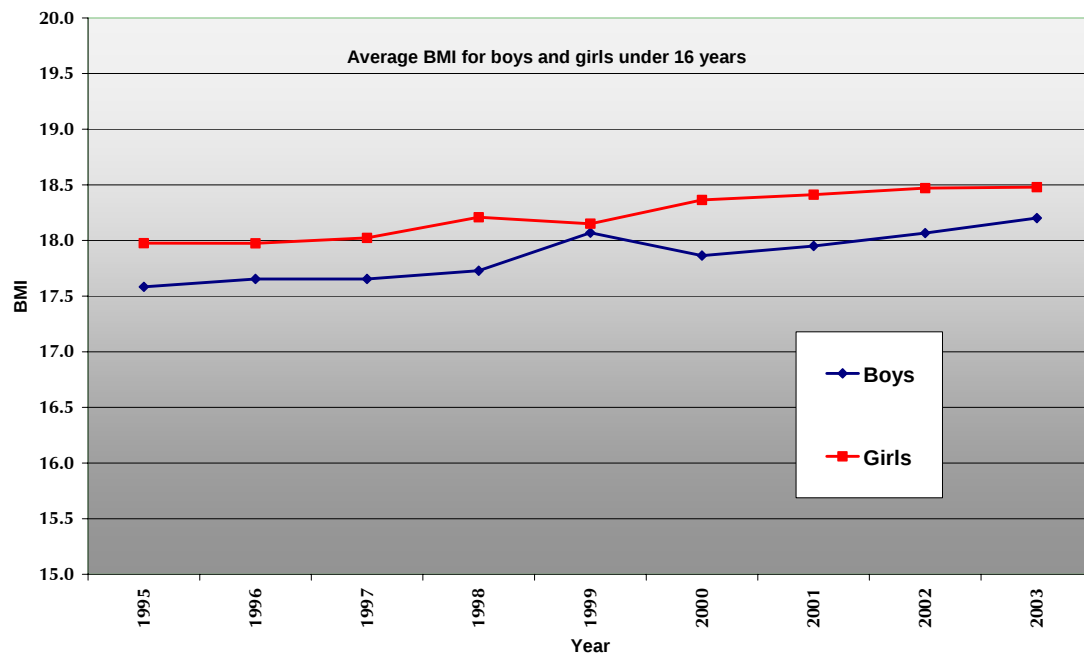


Figure 2. Average BMI for girls aged 5 to 15.



The average BMIs for all girls and boys aged under 16 years from 1995 to 2003 are shown in Figure 3 below. We can see that there has been an increase of around 0.5 in BMI over the nine year period for boys and 0.6 for girls. This rate of increase can hardly justify the claim of 'rapid acceleration'.

Figure 3. Average BMI for boys and girls under 16 years



3. Definitions of obesity for children – options

The Health Survey for England 2003 does not provide an indication of the ratios of ‘normal’, ‘overweight’, ‘obese’ categories for children. While it is possible to estimate such proportions from the means and standard deviations for each age group, the method is subject to error. The data from the 2002 survey, however, do provide such breakdowns and also highlight the fact that definitions of obesity in childhood are not as fixed as we might imagine and can result in false or misleading conclusions being drawn from the data.

There are two principal ways of defining childhood obesity. The first is the National standard based on UK reference curves from 1990. Children are classified obese if they fall above the 95th percentile relative to the curve for their age. The other method is the International classification system based on data relating to height/weight distributions in 6 countries, including the UK. This method is supported by leading agencies, as well as the International Obesity Task Force, because the cut off points are “less arbitrary and ... should help to provide internationally comparable rates of overweight and obesity in children.”⁴

The choice of classification method makes a big difference. Obesity lobbyists tend to use figures that exaggerate the prevalence – typically including the proportion of people who are overweight with those who are obese. With children the problem is compounded because height has been increasing at the same time as weight and the UK standards for weight were based on children of shorter stature. Using the UK National standard results in the more pessimistic picture of higher obesity rates and the Government’s Public Health White Paper employs this classification: “The prevalence of obesity in children aged 2 to 10 years has increased from 9.6% in 1995 to 15.5% in 2002.” If, on the other hand, one uses the less arbitrary International Standard favoured by the IOTF, then the figures indicate an increase over this nine year period from 2.9% to 5.7% for boys and from 4.9% to 7.8% for girls, suggesting the average prevalence of obesity for children rising from 3.9% in 1995 to 6.75% in 2003.⁵

The proportionate increases using either method are similar, but interpretations of the scale of childhood obesity are very different. Using the UK National standard, around 1 in 6 children are deemed to be obese, while using the International standard the figure falls to one in 15 children. The difference between these two rates of childhood obesity is having a significant impact on the scale of measures considered appropriate. Measures appropriate to an obesity rate of one child in six are likely to be considerably more draconian than those fit for a rate of one child in fifteen.

⁴ Cole, T.J. et al (2000) Establishing a standard definition for child overweight and obesity worldwide: international survey. *BMJ*, 320 (7244), 1240.

⁵ These figures are higher than those reported for 2000/2001 in the National Diet and Nutrition Survey conducted on behalf of the Food Standards Agency and the Department for Health. These data indicate the prevalence of obesity for boys as 3.6% and 4.6% for girls.

While these data clearly show increases in obesity, they do not sustain Professor Philip James' claim of an exponential rise in obesity among children. For a rise to be exponential it must have an accelerating rate of increase – a feature strikingly absent from the Health Survey data. What we see instead is a very modest and almost linear pattern of increase, whichever classification system we employ.

4. Obesity in the adult population

The measurement of adult overweight and obesity is not subject to these classification difficulties⁶. The data show that overall levels of adult obesity have, indeed, risen quite substantially over the past 10 years. In 1993 13.2% of men were obese, rising to 22.9% in 2003. For women the figures were 16.4% and 23.4% respectively. The rise in obesity is not in doubt. But the increase in obesity is not even across all age groups.

Figures 4 and 5 show the incidence of obesity broken down by age and sex. The data show quite plainly that obesity is strongly related to age – as we get older we are more likely to put on weight, and there are well-understood metabolic changes occurring around middle age that can account for a significant proportion of this increase. The 16-24 year age group – both males and females – is, however, substantially less at risk of becoming obese than older age groups, and the prevalence of obesity for males in this age range has *declined* very slightly in recent years. Those aged between 25 and 34 have the second lowest rates of obesity. Middle aged people and those of retirement age are the most 'at-risk' groups. There is again, however, no evidence of 'exponential' rises in obesity in any adult age group. Rather, fluctuating but otherwise quite linear trends can be observed.

⁶ Standard WHO cut off points are used: 'Underweight' – BMI <20; 'Normal' or 'Desirable' – BMI 20-25; 'Overweight' – BMI 26-30; 'Obese' – BMI >30. In 2003, the 'Normal' category was expanded to include BMIs of 18.5-25. For the purposes of comparability, however, the Health Survey retains the higher 'Normal' cut-off of BMI 20.

Figure 4. Percentage of obese men by age group

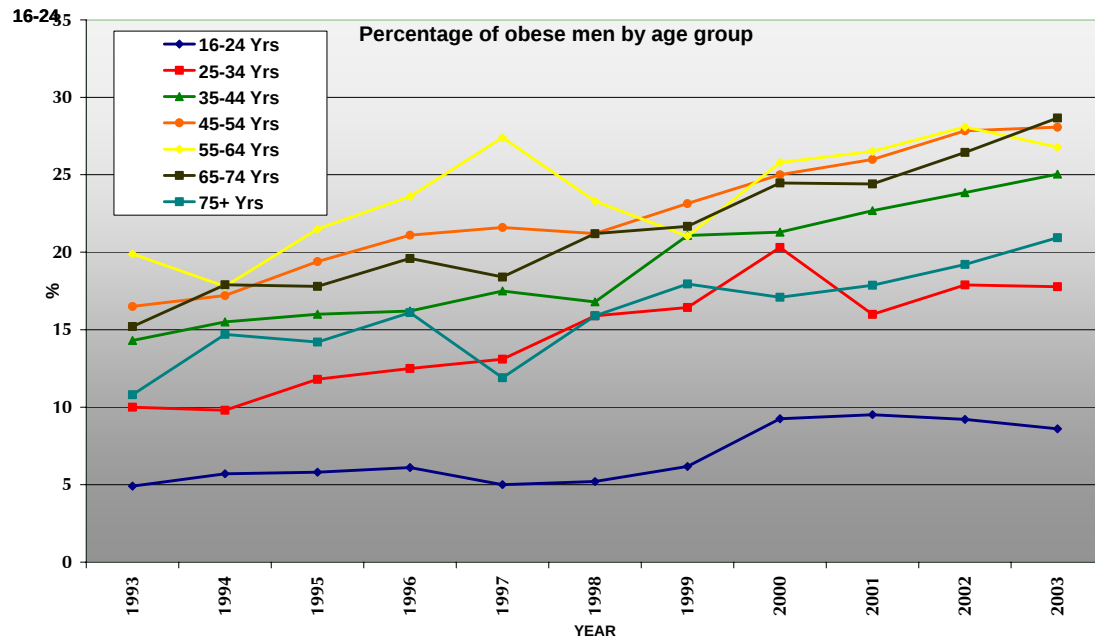
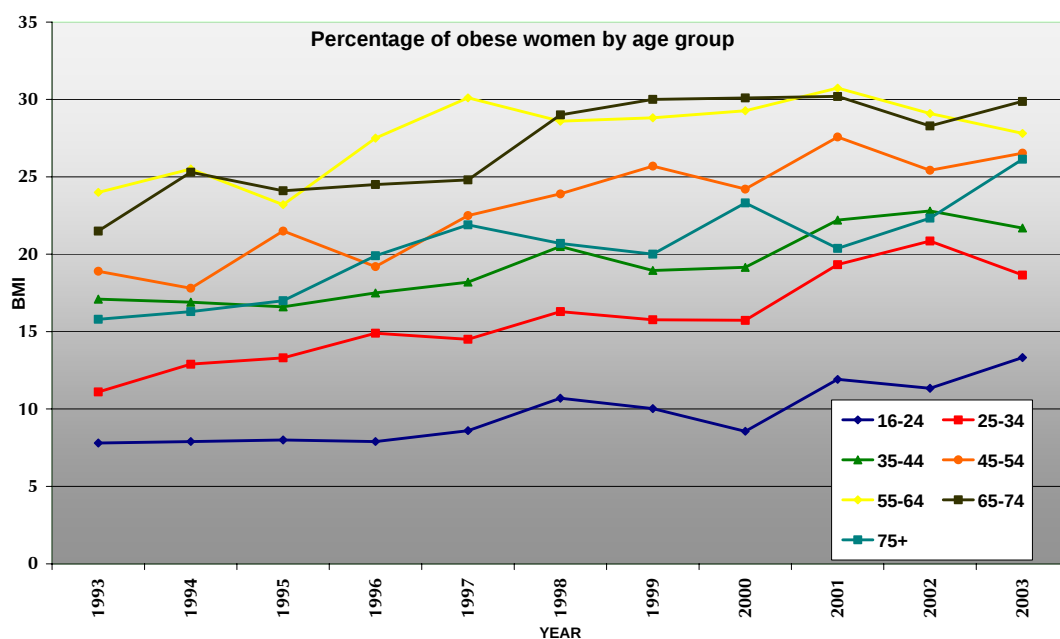


Figure 5. Percentage of obese women by age group



These figures are at variance with the usual view that it is our nation's young people who are most threatened by the rising obesity 'epidemic'. This is even more clearly demonstrated when we examine the statistics in a little more detail, as shown in Figures 6 and 7.

Figure 6. Distributions of BMI for men aged 16-24

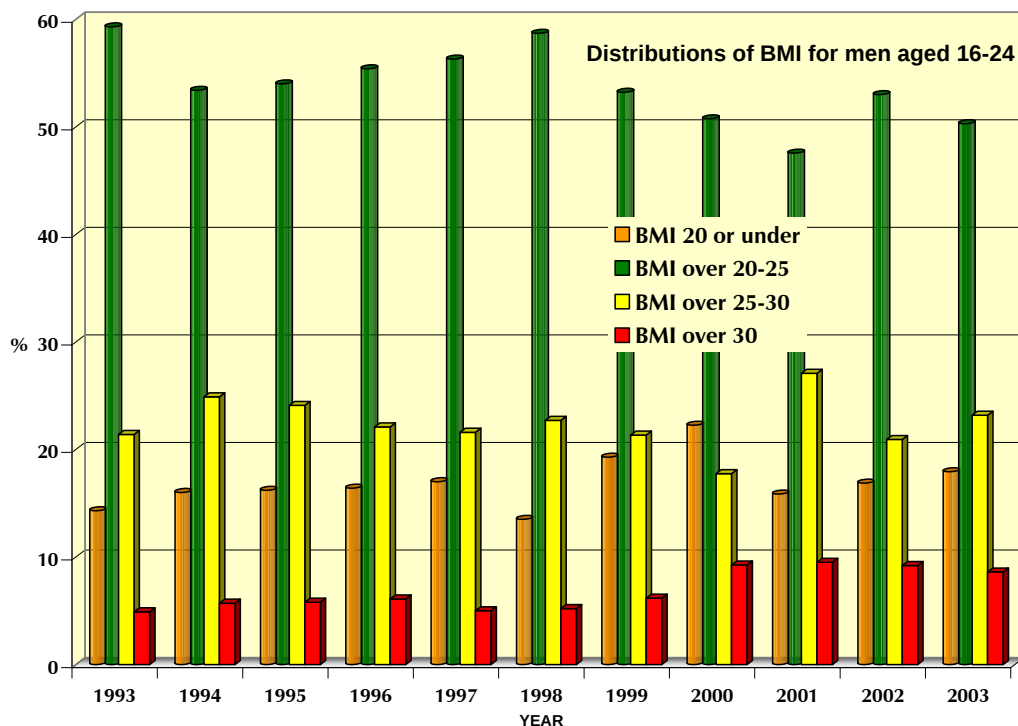
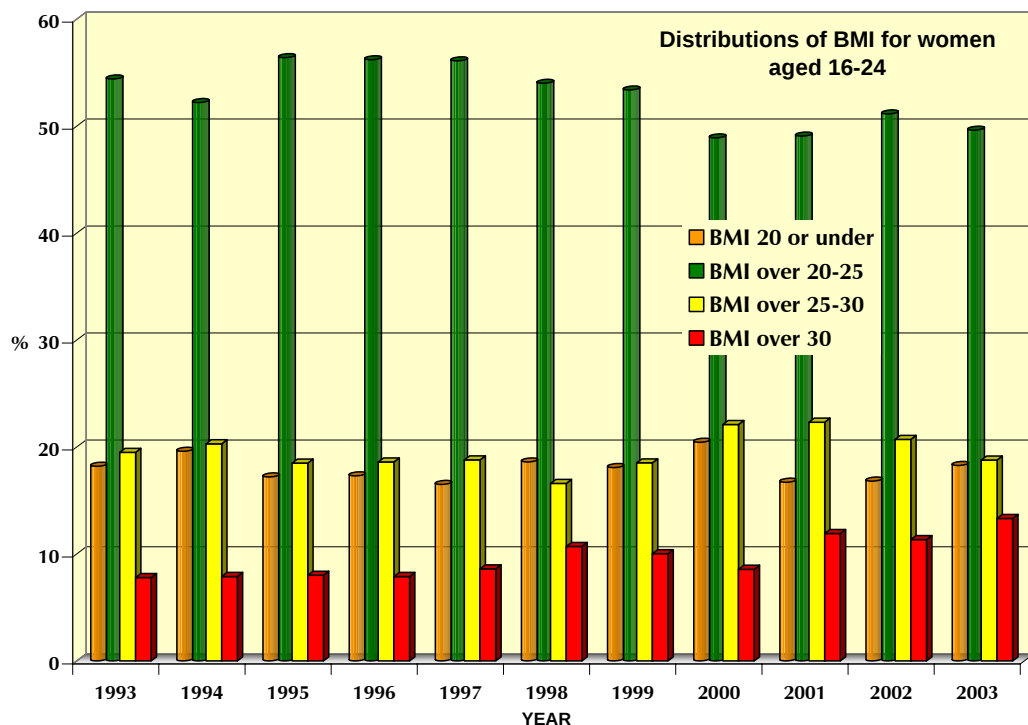


Figure 7. Distributions of BMI for women aged 16-24



These charts have two striking aspects: the dominant BMI category for both men and women in the 16-24 age group is the 'desirable' one – between 20 and 25. Men of this age are *twice* as likely to be underweight as they are to be obese.

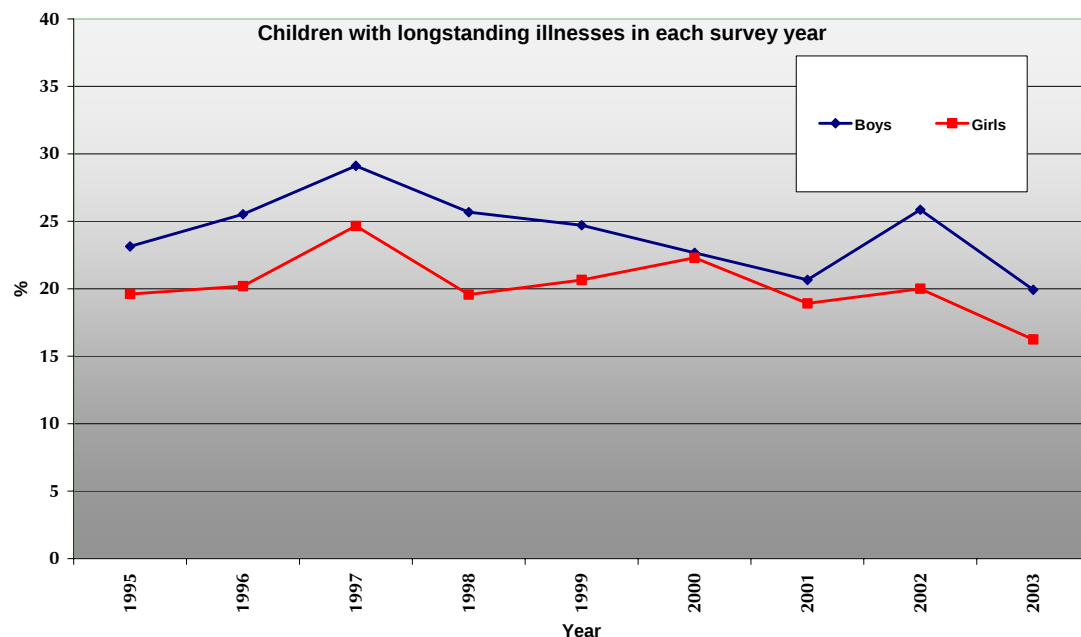
This pattern starts to change dramatically as we progress up the age range. Overweight (BMI 25-30) begins to dominate from the age of 35 for both sexes. In the 65-74 year old category more people are likely to be obese than of 'desirable' weight.

5. Discussion

With these data before us, it is hard to understand why so much of the emphasis and related investment in public policy initiatives to tackle obesity has been directed towards children and young people – attacks on consumption of 'junk food', proposed restrictions on advertising of 'sugary fatty foods' – when the problems are most evident in older generations.

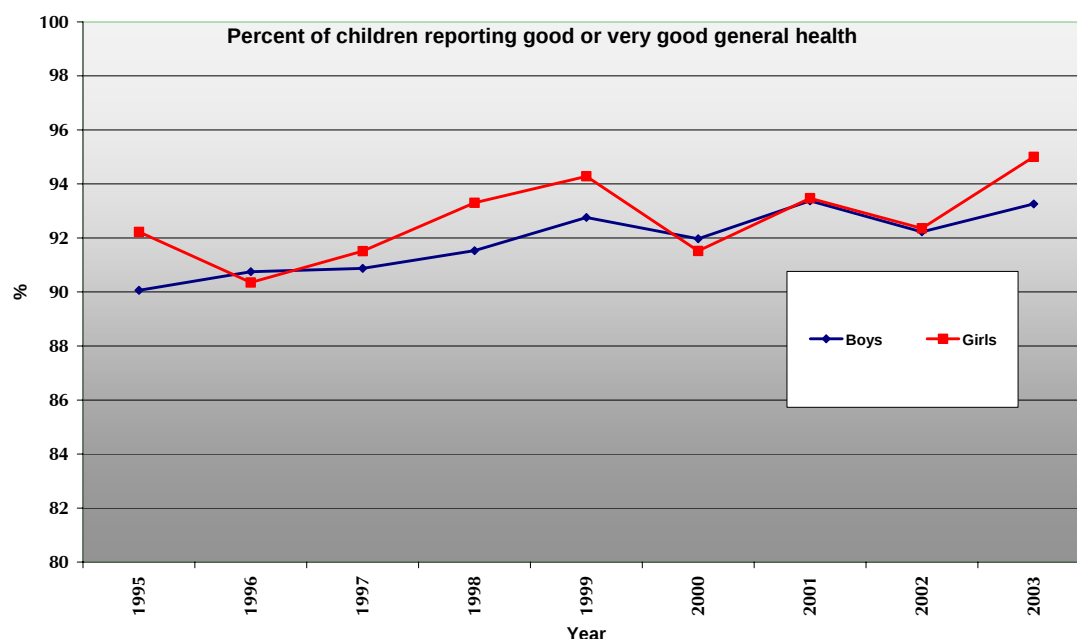
The assumption is that as our children and young people get fatter their health suffers correspondingly. The Health Survey data, however, do not support this view. There has been no change in the incidence of acute illnesses and, more importantly, no rise in the number of children suffering from longstanding illnesses, which includes type II diabetes, as shown in Figure 8. There has, in fact been a slight decline.

Figure 8. Children with longstanding illnesses in each survey year



Finally, we should note the self-assessments of general health made by children or their parents. There is no sign of any decline here either, as illustrated in Figure 9 below. If anything, there has been a small rise in the quality of general health.

Figure 9. Percent of children reporting good or very good general health



This is not, of course, to say that obesity, at whatever age, is without negative health consequences. Obesity is clearly undesirable and needs to be tackled. The absence of any evident deterioration in the health status of children, however, supports the view that children are not becoming fatter as fast as is widely believed.

6. Implications for Public Health Strategy

The framing of appropriate strategies to tackle obesity needs to be firmly based on accurate assessments of both the scale of the problem and the populations most at risk, rather than on population-wide approaches coupled with sensationalist claims and the quite unjustified use of terms such as ‘epidemic’ or ‘exponential rise’.

We do no service to the people at risk of obesity-related morbidities in our society by ‘hyping’ their plight, exaggerating their numbers or diverting limited educational, medical and financial resources away from where the problems really lie. Banning advertising of ‘junk food’ to children and similar measures may be popular in some quarters, but they are targeted at the wrong age group. Most weight gain starts to occur after children leave school and become less active in adulthood. The Health Survey for England provides grounds for a serious re-think.