



## Child overweight and obesity

### Initial findings from the Millennium Cohort Study Age 14 Survey



#### MCS Age 14 Survey

The most recent survey of the MCS was the Age 14 Sweep, which took place between January 2015 and March 2016.

The 11,726 participants who took part were interviewed face to face and completed a questionnaire and two cognitive assessments. The next sweep will take place in 2018 when the participants are aged 17.

You can find out more about the data collected from this sweep on our website. The data from this and all previous sweeps are available from the UK Data Service.

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#### Introduction

Rates of childhood overweight and obesity have become a major concern in the majority of industrialised nations, and the childhood obesity and overweight epidemic is growing globally. Children who are overweight or obese face an increased risk of many health problems, including asthma, cardiovascular disease and type 2 diabetes. Childhood overweight and obesity is also associated with psychological problems such as low self-esteem and depression, and with lower educational attainment.

In recent years, there has been an emerging policy focus on childhood obesity. It is estimated that obesity and overweight will cost the NHS up to £9.7bn per year by 2050, and the overall cost of obesity – including absence from work, illness not treated in the health service and reduction in quality of life – is projected to reach £49.9bn per year

in 2050. As part of the Childhood Obesity Plan, governments across the UK are set to introduce a levy on added sugar in soft drinks in April 2018; there are also plans to reduce sugar across a range of products by 20 per cent by 2020, alongside reductions in salt and saturated fat.

This briefing paper examines the weight status of today's generation of adolescents taking part in the Millennium Cohort Study (MCS), which is a nationally representative group of children born in the UK at the start of the century. It looks at how levels of overweight and obesity have changed since earlier surveys, especially between the ages of 11 and 14. The report also explores the links between weight and family background.

**This briefing is part of a series on different topics, based on the most recent MCS data.**

#### Key findings

- 20 per cent of MCS participants were obese at age 14 and a further 15 per cent were overweight.
- The proportion of study participants who were of an excess weight (either overweight or obese) at age 14 was a similar level to when they were 11. Rates of excess weight among young people have stabilised since the stark increase, from 25% to 35%, observed in the study between ages 7 and 11.
- Around 1 in 4 young people were of excess weight at both ages 11 and 14, and around 1 in 7 were obese at both 11 and 14.
- Between 11 and 14, most participants stayed in the same weight category. Boys were slightly more likely to have become normal weight than overweight or obese, while the opposite was the case for girls.
- 14-year-olds whose mothers had a low level of education were more likely to be of excess weight than those whose mothers had a degree.

## Method overview

At age 14, the weight, height and body fat of participants were measured as part of the study. Levels of overweight and obesity were assessed based on body mass index (BMI), which measures the ratio between height and weight. It is calculated by dividing weight in kilograms by squared height in metres.

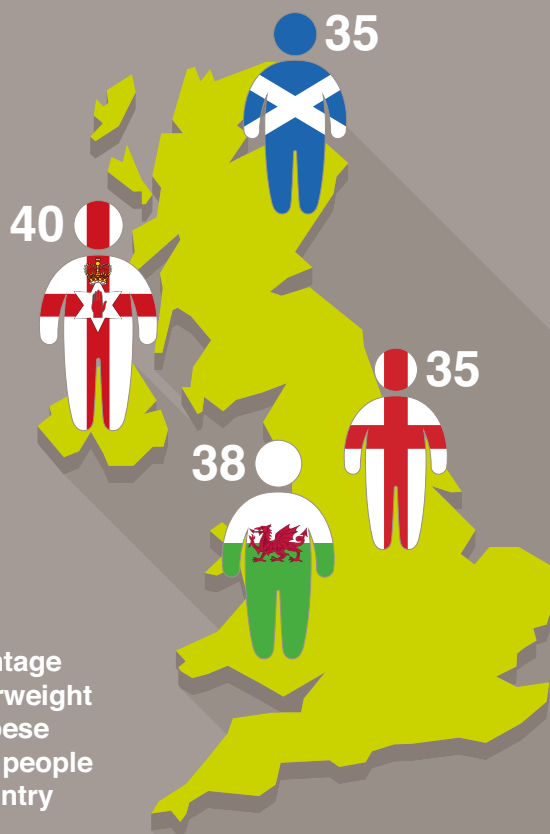
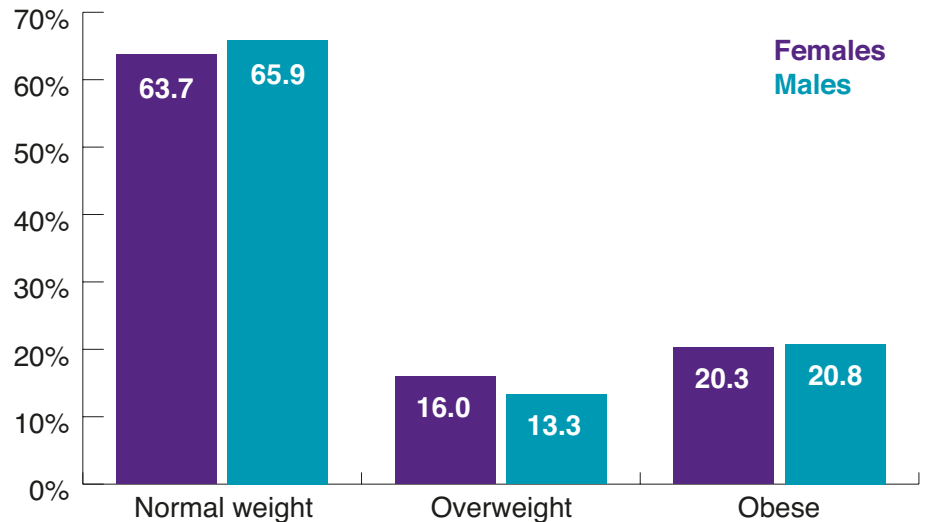
In children, the BMI threshold which determines whether a child is overweight varies by age and gender. We use the British 1990 growth reference (UK90) to define overweight and obesity in relation to their age and gender. Children's BMI is classified as overweight (including obese) when it is in the top 15 per cent of the UK90 growth reference, and as obese when it is in the top 5 per cent.

## Overweight and obesity at age 14

At age 14, boys had reached an average height of 1.67 metres (5ft 7in) while girls were on average 1.61 metres (5ft 3in). Boys weighed on average 58.6kg (9st 3lb) while girls weighed 57.2kg (9st 0lb).

Based on their BMI, 15 per cent of 14-year-olds were overweight and a further 20 per cent were obese. While the same proportion of boys and girls were obese (20%), the proportions overweight were slightly higher for girls (16%) than boys (13%).

FIGURE 1:  
Normal weight, overweight and obesity at age 14, by sex



Percentage of overweight and obese young people by country

**“By age 14, rates of excess weight had stabilised since age 11, remaining at 35%.”**

The prevalence of overweight and obesity varied by country in the UK. Almost 40 per cent of young people in Northern Ireland were overweight and obese, compared to 38 per cent in Wales and 35 per cent in both Scotland and England.

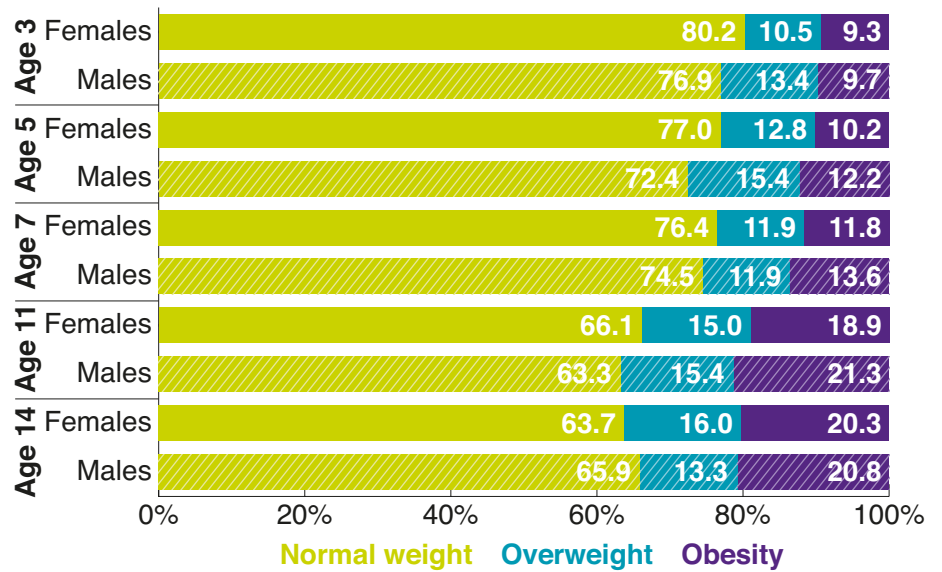
Ethnic minority study participants were generally more likely to be overweight and obese than white cohort members, with 48 per cent of young black people classified as having excess weight, compared to 34.5 per cent of white adolescents.

## Patterns of childhood weight from 3-14

Children's height and weight have been measured in MCS surveys at ages 3, 5, 7, 11 and 14. Rates of excess weight were relatively stable up to age 7, and stark increases in excess weight were observed between the ages of 7 and 11. At age 7, 25 per cent of MCS children were overweight (12%) or obese (13%). However, by age 11, this figure had risen to 35 per cent (15% overweight, 20% obese).

By age 14, the rates of excess weight had stabilised, remaining at 35 per cent. However, the proportions of those who were overweight and obese had declined slightly among boys and increased slightly among girls.

FIGURE 2:  
Normal weight, overweight and obesity, by age and sex

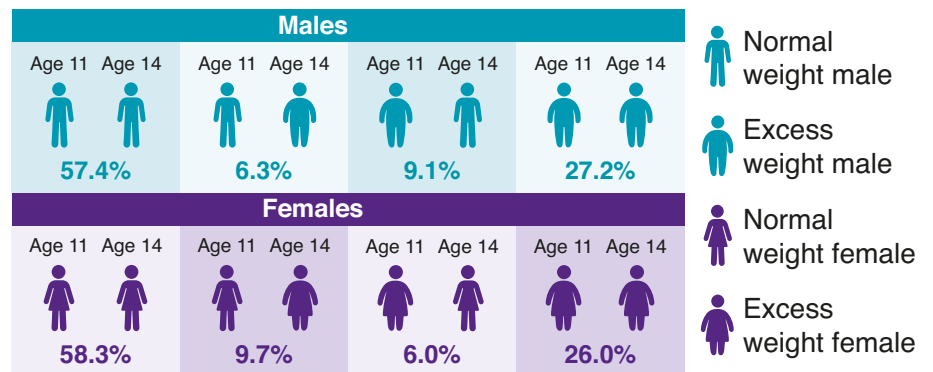


## Transitions from 11-14

Although most young people stayed in the same weight category from ages 11 to 14, when looking at changes in weight boys were more likely to have become a normal weight (9.1%) than to have become of excess weight (6.3%).

The opposite was the case for girls, who were slightly more likely to have entered the excess weight category (9.7%) than to have become a normal weight (6.0%).

FIGURE 3:  
Transitions between normal weight and excess weight from age 11 to age 14, by sex



## Links to mother's education and family background

In this and previous surveys, parents answered questions about education, economic circumstances, parenting, relationships and family life. Researchers analysed this rich data about the study participants and their families to understand some of the factors associated with overweight and obesity.

There was a clear link between young people's weight at age

14 and their mother's level of education. Almost 40 per cent of study participants whose mothers were educated to GCSE level or lower were overweight or obese, compared to 26 per cent of those whose mothers had a degree or higher qualifications.

This relationship was particularly strong when considering only

obesity. Young people whose mothers were educated to degree level were almost 10 percentage points less likely to be obese than those whose mothers had no formal qualifications.

In addition, study participants who were breastfed as infants and those whose parents owned their home had lower odds of being overweight or obese at age 14.

## Conclusions

The findings reported in this briefing show that although the rates of overweight and obesity have stabilised since age 11, there is still a worryingly high proportion of young people in the millennium generation who are an unhealthy weight.

Overall, the upward trend in rates of overweight and obesity that was observed between ages 7 and 11 has levelled out between ages 11

and 14. There are indications that between 11 and 14, boys are slightly more likely to transit out of excess weight than into it, whereas for girls the opposite is the case.

The findings also reveal associations between levels of obesity and overweight in teenagers and a range of background characteristics such as country of residence, ethnicity and mother's education.

### About the Millennium Cohort Study

The MCS has been following the lives of 19,517 children since they were born in the UK at the turn of the new century. It's one of four longitudinal studies managed by the Centre for Longitudinal Studies (CLS) at the UCL Institute of Education.

CLS carries out regular surveys (known as 'sweeps') to collect information about study participants' physical, socio-emotional, cognitive and behavioural development over time, alongside detailed

information on their daily life, behaviour and experiences. The data collected is a rich and unique resource for researchers across a range of disciplines.

The MCS has had a significant impact on UK policy, in areas such as breastfeeding, immunisation and child poverty. It will continue to provide a vital source of evidence for policymakers addressing social challenges for many years to come.

The next sweep will take place in 2018 when the cohort members are aged 17.

## Implications

This briefing highlights the value of the MCS for addressing issues relating to child health, and in particular, the obesity epidemic among children and adolescents. As the millennium generation reaches adolescence, rates of obesity and overweight continue to be a major public health concern.

This report provides important evidence to underpin the commitment of governments across the UK to reducing levels of overweight and obesity in childhood. Future research will need to explore whether key policies, such as the levy on soft drinks and reduction in sugar content across food products, and guidelines on physical activity levels, have a positive impact on the health of this generation.

### For more information

This briefing is a summary of the working paper, *Child overweight and obesity: trends across childhood, with a focus on age 14*, by Benedetta Pongiglione and Emla Fitzsimons, available from the CLS website. December 2017.

## Acknowledgements

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**“This report provides important evidence to underpin the commitment of governments across the UK to reducing levels of overweight and obesity in childhood.”**

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