National Child Measurement Programme

England, 2016/17 school year
Key findings

Almost a quarter of reception children were overweight including obese. In year 6 it was over a third.

The remainder of these bullets just refer to the proportion of children who were obese:

• The prevalence of obesity has increased since 2015/16 for reception but remained similar in year 6.
• For reception it increased from 9.3% to 9.6%.
• For year 6 it remained fairly stable at 20.0% in 2016/17.
• Over a longer time period, obesity prevalence is lower for reception year compared to 2006/07, but it is higher for year 6 compared to 2009/10.

• Obesity prevalence was higher for boys than girls in both age groups.
• Obesity prevalence for children living in the most deprived areas was more than double that of those living in the least deprived areas for both reception and year 6.
• The deprivation gap as measured by the differences in obesity prevalence between the most and least deprived areas has increased over time. It has increased more for boys than girls in year 6.
• Obesity prevalence varied by local authority. For reception this ranged from 4.8% in Kingston-upon-Thames to 13.5% in Wolverhampton.
• In year 6 the range was from 11.3% in Rutland, to 29.2% in Barking and Dagenham.

1. The change from 19.8% in 2015/16 is not statistically significant.
2. For year 6 comparisons are not possible with the first years of the NCMP (2006/07 to 2008/09) as obesity prevalence was an underestimate due to low participation. This, and the impact of other improvements in data quality, should be considered when making comparisons over time. More details in annex B.
National Statistics status means that official statistics meet the highest standards of trustworthiness, quality and public value. All official statistics should comply with all aspects of the Code of Practice for Official Statistics. They are awarded National Statistics status following an assessment by the Authority’s regulatory arm. The Authority considers whether the statistics meet the highest standards of Code compliance, including the value they add to public decisions and debate.

It is NHS Digital’s responsibility to maintain compliance with the standards expected of National Statistics. If we become concerned about whether these statistics are still meeting the appropriate standards, we will discuss any concerns with the Authority promptly. National Statistics status can be removed at any point when the highest standards are not maintained, and reinstated when standards are restored. Find out more about the Code of Practice for Official Statistics at: www.statisticsauthority.gov.uk/assessment/code-of-practice.

ISBN 978-1-78734-150-0
Introduction

Child obesity is a good indicator of adult obesity which can lead to poor health outcomes.

The NCMP is a key element of the Government’s approach to tackling child obesity by annually measuring over one million children and providing reliable data on rates of childhood obesity. Children are measured in reception (aged 4–5 years) and year 6 (aged 10–11 years) primarily in state-maintained schools¹ in England.

The programme was launched in the 2005/06 academic year and now holds eleven years of reliable data².

NCMP data enables local areas to plan services to tackle child obesity and monitor progress.

In most local authorities, parents also receive feedback on their child’s weight status along with the offer of further advice and support on achieving a healthy weight for their child.

This report contains analyses of the 2016/17 data showing Body Mass Index (BMI) classification rates with breakdowns by: child age and sex; local authority and region; levels of deprivation; urban/rural classification; ethnicity and ONS area classification. The report also contains comparisons over time where appropriate.

Comparisons between groups and over time have been statistically tested to determine whether differences are likely to be genuine (i.e. statistically significant) or the result of random natural variation. Only statistically significant differences have been described with terms such as “higher”, “lower”, “increase” or “decrease”.

The report is accompanied by:

- Data tables, including 95 per cent confidence intervals which should be considered when interpreting results.
- Technical appendices with information on data collection, validation, confidence intervals, statistical testing and the methodology used for BMI classification rates.

---

¹ Any data collected from independent or special schools is excluded from this analysis. See “Coverage” in annex B for more details.
² 2006/07 is the first year that the data are considered to be robust due to the low participation in 2005/06.
The BMI classification of each child is derived by calculating the child’s BMI centile and classifying as shown in the diagram below. This calculation uses age and sex as well as height and weight to take into account different growth patterns in boys and girls at different ages.

The prevalence of children in a BMI classification is calculated by dividing the number of children in that BMI classification by the total number of children and multiplying the result by 100.

Geographical analyses in this report are primarily based on the postcode of the child’s home address which is mapped to a lower super output area. Some time series analyses use the school postcode as the child postcode was poorly populated in the early years of the NCMP and these are labelled in the report.

The NCMP uses the British 1990 growth reference (UK90) to define the BMI classifications. This approach is recommended by The National Institute for Health and Care Excellence (NICE).

For more information: See annex B
Contents

Age 7
Sex 8
Time series 9
Ethnicity 10
Geography 11
Deprivation 13
Rurality 18
ONS Area Classification 19
Data quality 20
Other data sources 23
Obesity prevalence was more than twice as high in year 6 (20.0%) compared to reception (9.6%).

The proportion of underweight children was higher in year 6 (1.3%) than in reception (1.0%).

Around three quarters of reception children were healthy weight (76.4%). In year 6 it was around two thirds (64.4%).

For more information: Table 1a National Child Measurement Programme, England, 2016/17 school year.
The difference in obesity prevalence between boys and girls was larger in year 6 than reception. Underweight prevalence was higher for boys in reception but higher for girls in year 6.

<table>
<thead>
<tr>
<th></th>
<th>Reception</th>
<th>Year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Girls</td>
<td>Girls</td>
</tr>
<tr>
<td>Underweight</td>
<td>0.7</td>
<td>1.5</td>
</tr>
<tr>
<td>Overweight</td>
<td>1.2</td>
<td>14.3</td>
</tr>
<tr>
<td>Obese</td>
<td>12.9</td>
<td>18.1</td>
</tr>
<tr>
<td></td>
<td>Boys</td>
<td>Boys</td>
</tr>
<tr>
<td>Underweight</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>Overweight</td>
<td>10.0</td>
<td>14.3</td>
</tr>
<tr>
<td>Obese</td>
<td>13.1</td>
<td>21.8</td>
</tr>
</tbody>
</table>

The proportion of children in the healthy weight category is not shown as it would lengthen the scale making the differences for the other categories harder to see. For more information: Table 1a National Child Measurement Programme, England, 2016/17 school year.
The prevalence of obesity has increased since 2015/16 in reception but remained similar in year 6. For reception it increased from 9.3% to 9.6%. For year 6 it remained fairly stable at 20.0% in 2016/17.

Over a longer time period, obesity prevalence is lower for reception year compared to 2006/07, but it is higher for year 6 compared to 2009/10.

1. The change from 19.8% in 2015/16 is not statistically significant.
2. For year 6 comparisons are not possible with the first years of the NCMP (2006/07 to 2008/09) as obesity prevalence was an underestimate due to low participation. This, and the impact of other improvements in data quality, should be considered when making comparisons over time. More details in annex B.
Obesity prevalence was highest for the Black category in both reception and year 6. It was lowest for Chinese children in reception and the White and Chinese children in year 6.

The Asian category had the highest prevalence of underweight children at 3.6% in reception and 3.4% in year 6 (not shown on charts).

1. Ethnic categories displayed here have been derived by combining lower level NHS ethnic categories. A lower level breakdown is available in table 4. For more information: Table 4, National Child Measurement Programme: England, 2016/17 school year.
In general, obesity prevalence was highest in the North East, West Midlands and London. It was lowest in the East of England, South East and South West.

London had the highest prevalence of underweight children in reception (not shown on chart).

For more information: Table 3b (region based on postcode of the child), National Child Measurement Programme: England, 2016/17 school year.
Obesity prevalence varied by local authority.

For reception this ranged from 4.8% in Kingston-upon-Thames to 13.5% in Wolverhampton.

In year 6 the range was from 11.3% in Rutland, to 29.2% in Barking and Dagenham.

Note the maps cannot be compared with each other due to the different ranges used.

For more information: Table 3b (region based on postcode of the child), National Child Measurement Programme: England, 2016/17 school year
As in previous years there was a strong relationship between deprivation\(^1\) and obesity in both age groups.

Obesity prevalence ranged from 12.7% of children living in the most deprived areas to 5.8% in the least deprived areas.

In general underweight prevalence decreases as deprivation decreases (not shown on chart).

---

1. Deprivation has been defined by the deprivation decile of the local super output area that the child lives in.

For more information: Table 6a (deprivation based on postcode of the child), National Child Measurement Programme, England, 2016/17 school year.
26.3% of children living in the most deprived areas\(^1\) were obese compared to 11.4% in the least deprived areas.

Combined overweight and obesity prevalence ranged from 40.9% in the most deprived areas to 24.2% in the least deprived areas (not shown on chart).

---

1. Deprivation has been defined by the deprivation decile of the local super output area that the child lives in.

For more information: Table 6a (deprivation based on postcode of the child), National Child Measurement Programme, England, 2016/17 school year.
The gap between obesity prevalence for the most and least deprived areas has increased over time in both school years. Between 2006/07 and 2016/17 the gap increased by 1.5 percentage points for reception and 4.9 percentage points for year 6.

1. Deprivation is based on postcode of the school in this chart as postcode of the child was of poor quality in the early years of the NCMP.
For more information: Table 6b (deprivation based on postcode of the school), National Child Measurement Programme, England, 2016/17 school year.
Deprivation gap by sex – Reception

The deprivation$^1$ gap increased by similar amounts for both boys and girls in reception year.

Between 2006/07 and 2016/17 the gap increased by 1.3 percentage points for girls and 1.6 percentage points for boys.

1. Deprivation is based on postcode of the school in this chart as postcode of the child was of poor quality in the early years of the NCMP.

For more information: Table 6b (deprivation based on postcode of the school), National Child Measurement Programme, England, 2016/17 school year.
The deprivation gap increased more for boys than girls in year 6.

Between 2006/07 and 2016/17 the gap increased by 3.7 percentage points for girls and 6.1 percentage points for boys.

1. Deprivation is based on postcode of the school in this chart as postcode of the child was of poor quality in the early years of the NCMP.

For more information: Table 6b (deprivation based on postcode of the child), National Child Measurement Programme, England, 2016/17 school year.
Obesity prevalence in urban areas was highest in both age groups: 9.9% in reception and 20.9% in year 6.

Underweight prevalence was also highest in urban areas.

For more information: Table 5a, National Child Measurement Programme: England, 2016/17 school year.
Obesity prevalence for children in reception was highest in disadvantaged urban communities and multicultural city life areas for both reception and year 6.

Obesity was least prevalent in urban fringe areas for both age groups.

<table>
<thead>
<tr>
<th>ONS Area Classification</th>
<th>Reception</th>
<th>Year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Countryside</td>
<td>7.9</td>
<td>14.8</td>
</tr>
<tr>
<td>Disadvantaged Urban Communities</td>
<td>12.3</td>
<td>24.9</td>
</tr>
<tr>
<td>Miscellaneous built up areas</td>
<td>9.9</td>
<td>20.6</td>
</tr>
<tr>
<td>Multicultural City Life</td>
<td>11.8</td>
<td>26.6</td>
</tr>
<tr>
<td>Professional City Life</td>
<td>7.7</td>
<td>17.5</td>
</tr>
<tr>
<td>Urban Fringe</td>
<td>6.7</td>
<td>13.7</td>
</tr>
<tr>
<td>White Collar Urban</td>
<td>8.8</td>
<td>18.0</td>
</tr>
</tbody>
</table>

1. These classifications use census data to identify areas of the country with similar characteristics: further details.
For more information: Table 7a (based on postcode of the child), National Child Measurement Programme, England, 2016/17 school year.
The participation rate is the percentage of children who have been measured in mainstream state-maintained schools out of those eligible for measurement\(^1\). Children are sometimes not measured for a range of reasons such as the child being absent on the day of measurement or not consenting to be measured.

The overall national rate has increased from 80% in 2006/07 to 95% in 2016/17.

The participation rate can affect the accuracy of estimates derived from the data. For example, if the participation rate is very low in a local authority then the prevalence estimates for the BMI categories should be treated with caution as those children measured may not be representative of all children in the LA\(^2\).

---

1. Excluding children who could not be measured due to physical or mental impairment.
2. See annex B.

For 2016/17 data at local authority level: Table 8, National Child Measurement Programme, England, 2016/17 school year.
Data Quality – Missing and imprecise data

Missing data
The proportion of missing data items has improved over time although it still remains quite high for NHS number and ethnicity. 31 LAs had over 25% of records with missing NHS numbers and 10 LAs had more than 25% of records without an ethnicity code.

Imprecise data
By chance, 10% of height and weight measurements would be expected to be whole numbers. However, there is some evidence of LAs rounding heights to whole numbers as nationally 16% of heights were whole numbers in 2016/17. This was over 30% for three LAs.

1. NHS number has only been collected since 2013/14.
Data Quality - Timeliness

Peterborough and Newham did not meet the deadline and submitted their data late.

Windsor and Maidenhead did not finalise data by the deadline and therefore had not signed off their data quality indicators. This was subsequently resolved and their data quality indicators have now been signed off.

Five local authorities requested access to the system post deadline to make late changes. In the majority of cases (three) this was to amend school headcount figures.

For more information: See chapter 11 of the data quality statement: Data quality issues in 2016/17 collection
Other data sources

The Health Survey for England also collects data on childhood obesity covering all children aged 2-15. However as it is a sample the estimates are less precise than those for NCMP for the reception year and year 6 children.

The PHE Obesity Risk Factors Intelligence team (formerly the National Obesity Observatory) conduct additional analyses on the NCMP data and produce a range of tools and reports.

- National reports
- Data and analysis tools - see obesity section
- Small area level data
- Historical analyses and reports
- Public library

The NCMP covers children attending schools in England only. Other countries in the UK publish similar reports and these are signposted below. There are differences in methods of collection and ages of the children measured which must be taken into consideration when comparing data across the UK countries.

Links to the latest reports from each country are:
- Scotland
- Wales
- Northern Ireland