National Child Measurement Programme

England, 2017/18 school year
This report presents findings from the Government’s National Child Measurement Programme (NCMP) for England, 2017-18 school year. It covers children in Reception (aged 4-5 years) and Year 6 (aged 10-11 years) in mainstream state-maintained schools in England. The report contains analyses of Body Mass Index (BMI) classification rates by age, sex and ethnicity as well as geographic analyses.

In Reception obesity prevalence remained similar at 9.5% in 2017/18.

In Year 6 it increased from 20.0% in 2016/17 to 20.1% in 2017/18.

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.

Key facts

- In Reception, obesity prevalence remained similar at 9.5% in 2017/18.
- In Year 6, it increased from 20.0% in 2016/17 to 20.1% in 2017/18.
- 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.
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.

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) in mainstream state-maintained schools\(^1\) in England.

The programme was launched in the 2005/06 academic year and now holds twelve years of reliable data\(^2\).

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 2017/18 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.

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1. Independent and special schools are excluded. 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.
**Technical information**

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).

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1. The BMI classification “Severely obese” is a subset of “Obese”. Children with a BMI centile of between 95 and 100 are classified as “Obese” and those with a BMI centile of between 99.6 and 100 are classified as “Severely obese”. For more information: See annex B.
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Obesity prevalence (including severe obesity) was more than twice as high in year 6 (20.1% which equates to 116,134 children) compared to reception (9.5%, 58,196 children).

Severe obesity prevalence was higher in year 6 (4.2%) compared to reception (2.4%).

The proportion of underweight children was higher in year 6 (1.4%) than in reception (1.0%).

Around three quarters of reception children were healthy weight (76.6%). In year 6 it was around two thirds (64.3%).

For more information: Table 1a National Child Measurement Programme, England, 2017/18 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.

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, 2017/18 school year.
The prevalence of obesity has increased in year 6 from 20.0% in 2016/17 to 20.1% in 2017/18. For reception it remained similar at 9.5% in 2017/18\(^1\).

Over a longer time period, obesity prevalence is lower for reception compared to 2006/07 but higher for year 6 compared to 2009/10\(^2\).

Severe obesity prevalence is similar for reception but higher for year 6 over the same time periods.

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1. The change from 9.6% in 2016/17 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 Black children in both reception and year 6. It was lowest for Chinese children in reception and White and Chinese children in year 6.

Underweight prevalence was highest for Asian children in both reception and year 6.

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, 2017/18 school year.
In general, obesity prevalence was highest in London, West Midlands and North East.

It was lowest in the South West, South East and East of England.

London had the highest prevalence of underweight children at 1.5% in reception and 1.7% in year 6 (not shown on chart).

For more information: Table 3b (region based on postcode of the child), National Child Measurement Programme: England, 2017/18 school year.
Torbay had a particularly low participation rate so their data should be used with extreme caution – see Table 9: Local authority responses to data quality queries.

For more information: Table 3b (region based on postcode of the child), National Child Measurement Programme: England, 2017/18 school year.

Obesity prevalence varied by local authority.

For reception this ranged from 4.9% in Kingston upon Thames to 14.4% in Knowsley.

In year 6 the range was from 11.4% in Richmond upon Thames, to 29.7% in Barking and Dagenham.

Note the maps cannot be compared with each other due to the different ranges used.
There is a strong relationship between deprivation and obesity. Obesity prevalence was over twice as high in the most deprived areas (12.8%) than the least deprived areas (5.7%). Severe obesity prevalence was almost four times as high in the most deprived areas (3.8%) than the least deprived areas (1.0%). 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 in which the child lives. For more information: Table 6a (deprivation based on postcode of the child), National Child Measurement Programme, England, 2017/18 school year.
Obesity prevalence was over twice as high in the most deprived areas (26.8%) than the least deprived areas (11.7%). Severe obesity prevalence was over four times as high (7.0% and 1.6% respectively).

Combined overweight and obesity prevalence ranged from 41.4% in the most deprived areas to 24.5% in the least deprived areas (not shown on chart).

1. Deprivation has been defined by the deprivation decile of the local super output area in which the child lives.
For more information: Table 6a (deprivation based on postcode of the child), National Child Measurement Programme, England, 2017/18 school year.
Deprivation gap for obesity – Reception

Between 2006/07 and 2017/18 the gap between obesity prevalence for the most and least deprived areas increased by 1.6 percentage points due to obesity prevalence remaining similar in the most deprived areas and reducing in the least deprived.

Obesity prevalence in the least deprived areas reduced for both boys and girls. In the most deprived areas obesity prevalence remained similar for boys but increased for girls. Overall though, the increase in the gap over time was similar for boys and girls.

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 6c (deprivation based on postcode of the school), National Child Measurement Programme, England, 2017/18 school year.
Between 2006/07 and 2017/18 the gap between obesity prevalence for the most and least deprived areas increased by 5.0 percentage points due to obesity prevalence increasing in the most deprived areas and remaining similar in the least deprived.

Obesity prevalence in the least deprived areas remained similar for both boys and girls. In the most deprived areas obesity prevalence increased more for boys than girls. Overall therefore, the gap has increased more for boys than girls.

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 6c (deprivation based on postcode of the school), National Child Measurement Programme, England, 2017/18 school year.
The gap between severe obesity prevalence for the most and least deprived areas increased by 0.5 percentage points due to prevalence remaining similar in the most deprived areas and reducing in the least deprived.

Severe obesity prevalence in the least deprived areas reduced for both boys and girls. In the most deprived areas severe obesity prevalence remained similar for both boys and girls. Overall therefore, the increase in the gap over time was similar for boys and girls.

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 6d (deprivation based on postcode of the school), National Child Measurement Programme, England, 2017/18 school year.
The gap between severe obesity prevalence for the most and least deprived areas increased by 2.0 percentage points due to prevalence increasing in the most deprived areas and remaining similar in the least deprived.

Severe obesity prevalence in the least deprived areas remained similar for both boys and girls. In the most deprived areas prevalence increased more for boys than girls. Overall therefore, the gap has increased more for boys than girls.

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 6d (deprivation based on postcode of the school), National Child Measurement Programme, England, 2017/18 school year.
Obesity prevalence in urban areas was highest in both age groups: 9.8% in reception and 21.0% in year 6.

Underweight prevalence was also highest in urban areas.

For more information: Table 5a, National Child Measurement Programme: England, 2017/18 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.

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, 2017/18 school year.
Data Quality - Coverage

The participation rate is the percentage of children who have been measured in mainstream state-maintained schools out of those eligible for measurement\(^1\).

The overall national rate has increased from 80% in 2006/07 to 95% in 2017/18.

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\(^2\). Torbay had a particularly low participation rate so their data should be used with extreme caution.

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

For 2017/18 data at local authority level: Table 8, National Child Measurement Programme, England, 2017/18 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. 27 LAs had over 25% of records with missing NHS numbers and nine 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 2017/18. This was over 30% for two LAs.

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

The following twelve LAs did not finalise their submission and sign off their data quality indicators by the deadline:

• Bradford
• Cornwall
• Darlington
• Doncaster
• Camden
• Croydon
• Hounslow
• Islington
• Richmond Upon Thames
• Oldham
• Rochdale
• Somerset

This was subsequently resolved and all LAs signed off their data quality indicators.

Post deadline validation checks found errors in Doncaster’s height measurements and required them to correct and resubmit these data.

Table 8 shows the data quality indicators by submitting local authority with failing indicators highlighted in red.

Table 9 provides local authority responses to NHS Digital’s data quality queries.

For more information: See Table 8: Data quality indicators for the NCMP collection by submitting local authority and Table 9: Local authority responses to data quality queries.
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