



Public Health
England

Protecting and improving the nation's health

National Child Measurement Programme

Changes in children's body mass index between 2006/07 and 2015/16

Summary of main findings

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health, and are a distinct delivery organisation with operational autonomy to advise and support government, local authorities and the NHS in a professionally independent manner.

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Background

The National Child Measurement Programme (NCMP) measures the height and weight of over one million children aged 4-5 years (Reception) and 10-11 years (Year 6) in state maintained schools in England. It is nationally mandated and measurements have been taken annually since 2006/07.

BMI is a measure of weight status that adjusts for height. BMI is a person's weight in kilograms divided by the square of their height in metres. Assessing the BMI of children is more complicated than for adults because a child's BMI changes as they mature. Growth patterns differ between boys and girls, so both the age and sex of a child needs to be taken into account when estimating whether BMI is too high or too low.

In England the British 1990 growth reference (UK90) for BMI is commonly used to determine weight status according to a child's age and sex. Each child's BMI is calculated and compared with the BMI distribution for children of their age and sex from the UK90 growth reference. Children whose BMI is between the 85th and less than the 95th centile are classified as overweight and those at or above the 95th centile are classified as obese.

The table below defines the various weight categories that are used in population monitoring (which helps us to monitor trends in children's weight status across the country and over time). For example, a child who is classified as obese will have a BMI at or higher than the 95th percentile of children of their age and sex from the UK90 growth reference.

Centile of the BMI distribution (from UK 90)	Weight category	
Less than or equal to 2	Underweight	
Greater than 2 to less than 85	Healthy Weight	
85 to less than 95	Overweight	Excess weight
95 or more	Obese	

This summary report highlights trends in obesity, overweight, excess weight and underweight prevalence over the full period of NCMP measurements.

Key findings 2006/07 to 2015/16

All trends reported are statistically significant

	Reception		Year 6	
	Boys	Girls	Boys	Girls
Prevalence of obesity	Downward trend, decreasing at a slower rate compared with last year ↓	No upward or downward trend ▬	Upward trend, rate of increase speeding up compared with last year ↑	
Prevalence of excess weight	Downward trend, decreasing at a faster rate compared with last year ↓	No upward or downward trend ▬	Upward trend, rate of increase speeding up compared to last year ↑	Upward trend, rate of increase slowing down compared to last year ↑
Prevalence of overweight	Downward trend, decreasing at a faster rate compared with last year ↓	No upward or downward trend ▬	No upward or downward trend ▬	
Prevalence of underweight	Downward trend ↓		No upward or downward trend ▬	Downward trend ↓
Changes by deprivation quintile	Widening inequality in excess weight, obesity and overweight prevalence ↔		Widening inequality in excess weight, obesity and overweight prevalence ↔	
Weight category prevalence by ethnic group¹	Downward trends in excess weight and obesity prevalence in Black Caribbean, Indian and White British boys; and in excess weight prevalence in Pakistani boys ↓	Downward trends in underweight prevalence in Black African, Pakistani and White British girls ↓	Upward trends in obesity prevalence in Bangladeshi, Black African, Indian, Pakistani and White British boys ↑	Upward trends in excess weight and obesity prevalence in Bangladeshi, Black African, Indian, Pakistani and White British girls; and in excess weight in Black Caribbean Girls ↑
Mean BMI for age	Downward trend ↓	No upward or downward trend ▬	No upward or downward trend ▬	Upward trend ↑

¹ The proportion of records with valid ethnicity coding has increased substantially over the ten years of the NCMP. This variation in coding means that trends over time by ethnic group must be interpreted with caution

Key messages

- Obesity prevalence shows a significant downward trend in Reception boys overall in the 2006/07 to 2015/16 period covered by the NCMP. The rate of decrease is lower than that estimated with data to 2014/15
- The trends in obesity in Year 6 boys and girls continue to show year on year increases. The rates of increase are slightly higher than those estimated with data to 2014/15
- Underweight prevalence in Year 6 girls shows a significant downward trend and there is a continuing significant small annual reduction in underweight prevalence among Reception boys and girls
- Analysis by Index of Multiple Deprivation (IMD) quintile continues to show a widening inequality gap in the overweight, obese and excess weight categories for all groups – Reception boys and girls and Year 6 boys and girls. Where obesity and excess weight prevalence is declining overall it is either increasing in the most deprived quintiles compared to the least or is generally declining at a slower rate; and where prevalence is increasing overall it is increasing at a faster rate in the most deprived quintiles
- In some cases the inequality gap is widening at a faster rate than estimated last year, for example the gap in obesity prevalence between the most and least deprived quintiles in Reception boys and Reception girls
- There are newly significant declining trends in excess weight prevalence in Indian and Pakistani Reception boys and in obesity prevalence in Indian boys
- There are newly significant upward trends in obesity prevalence in White British Year 6 boys and Black African Year 6 girls; in excess weight prevalence in Black Caribbean Year 6 girls; and in overweight prevalence in Pakistani Year 6 girls
- At national level there is a significant decreasing trend in mean BMI for age over the time period 2007/08 to 2015/16 in Reception boys, and a significant increasing trend in Year 6 girls. These trends are found even after adjusting for factors such as ethnicity and deprivation which may have an influence
- Trends in mean BMI for age (BMI z score) are significantly different (worse or better) for some local authorities from what would be expected if they were following the national trend, even after adjusting for factors such as child deprivation and ethnicity

Further information

This report is accompanied by **NCMP Changes in children's body mass index between 2006/07 and 2015/16: Detailed Report**

NHS Digital annual report: www.content.digital.nhs.uk/catalogue/PUB22269

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