

# Are inequalities in child obesity widening?

## Findings from the National Child Measurement Programme

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### Obesity Knowledge and Intelligence

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#### Introduction

The National Child Measurement Programme (NCMP) is an annual programme which measures the height and weight of over one million children in England in Reception (age 4-5 years) and Year 6 (age 10-11 years), with over 90% participation. The NCMP was established in 2006 for population surveillance of weight status in children; the data also facilitate epidemiological study of patterns in child growth.

The PHE Obesity Knowledge and Intelligence team publish annual analytical reports monitoring patterns and trends in child body mass index (BMI). [1]

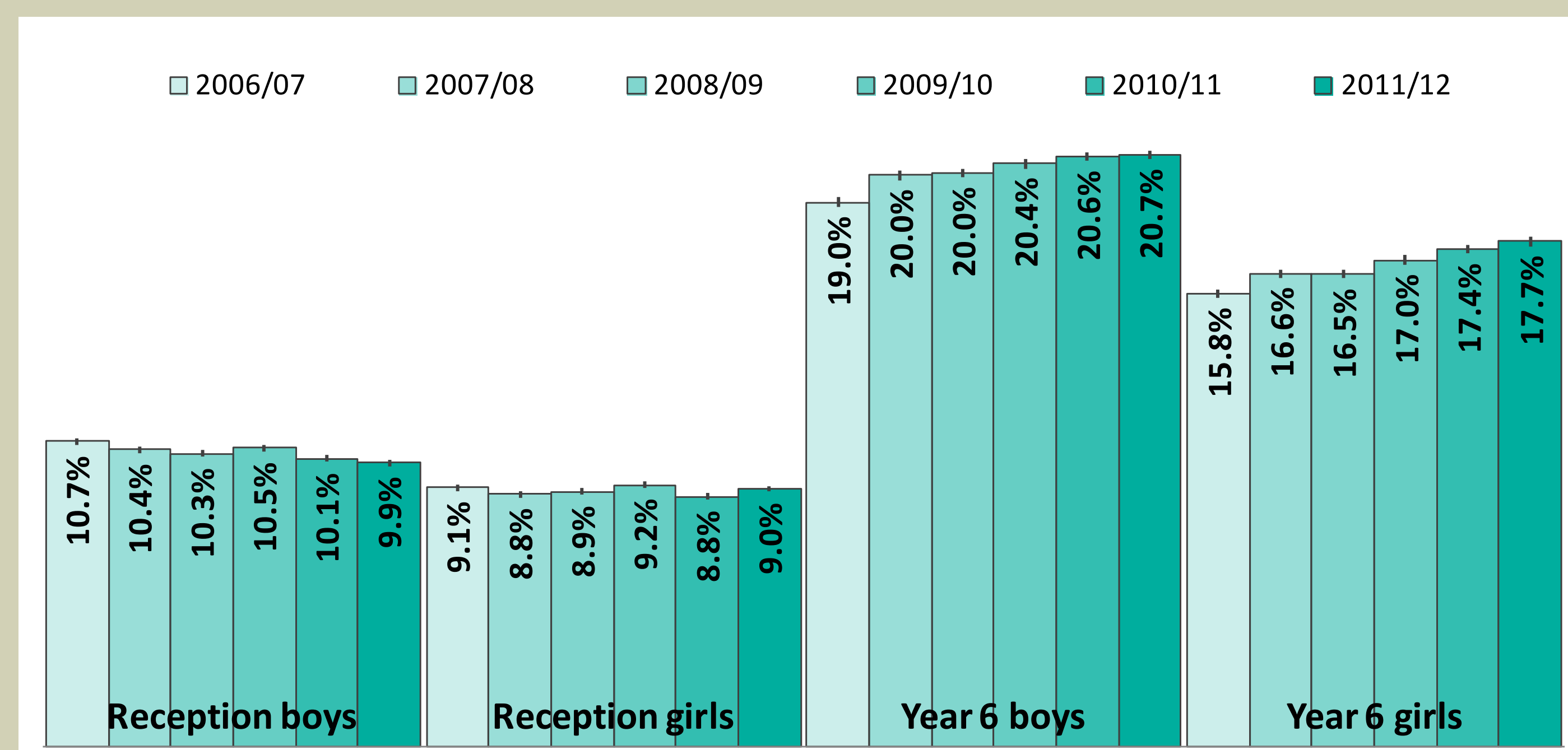
#### Methods

The NCMP collects information on child ethnicity and place of residence. Six years of good quality data are now available (2006/07 to 2011/12) and these have been analysed in detail to examine how patterns of child obesity prevalence vary by demographic and socioeconomic group. Trends in obesity prevalence over five or six years have been examined using simple regression analysis.

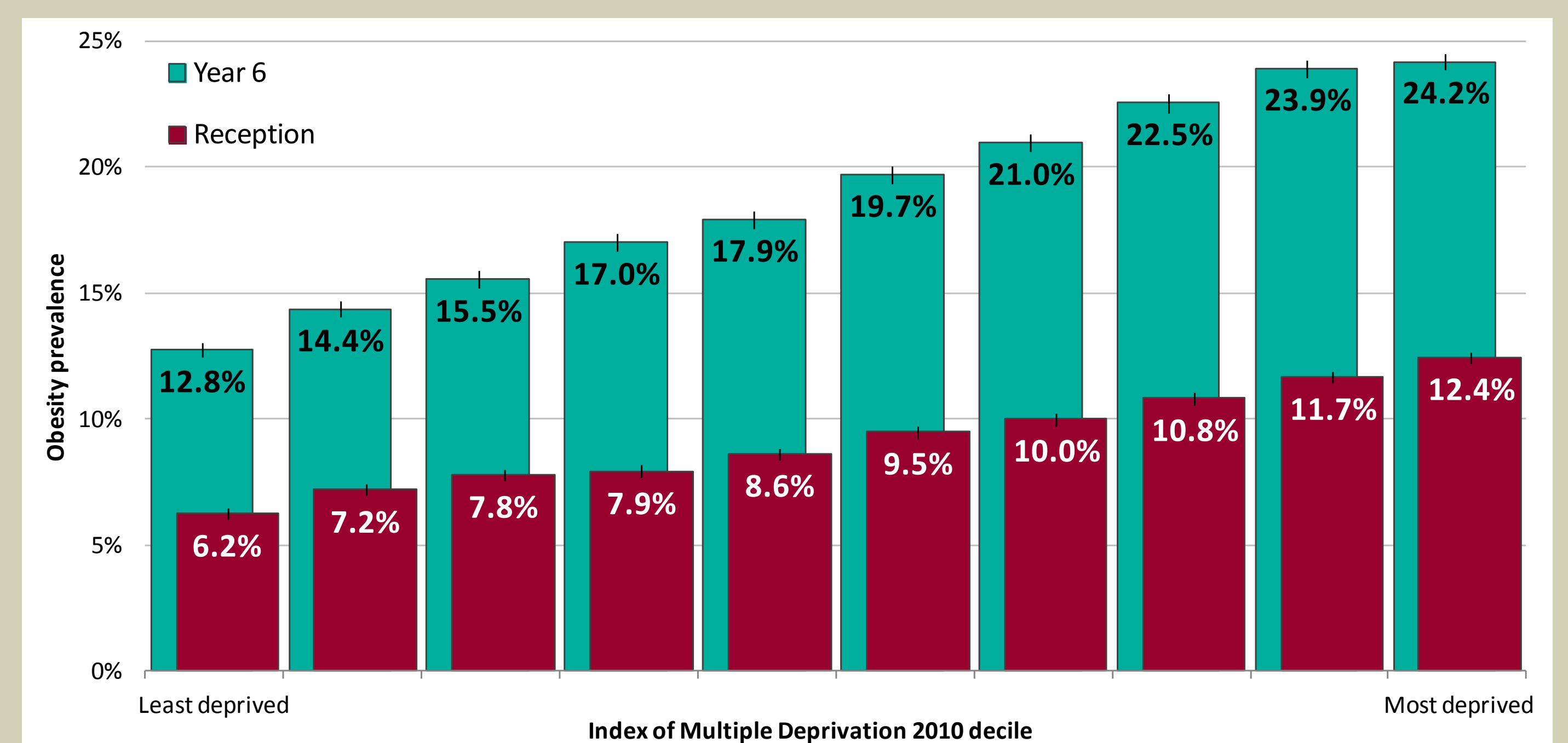
In this analysis child BMI is classified as 'obese' where it is greater than or equal to the 95<sup>th</sup> centile of the British 1990 growth reference (UK90).

#### Results

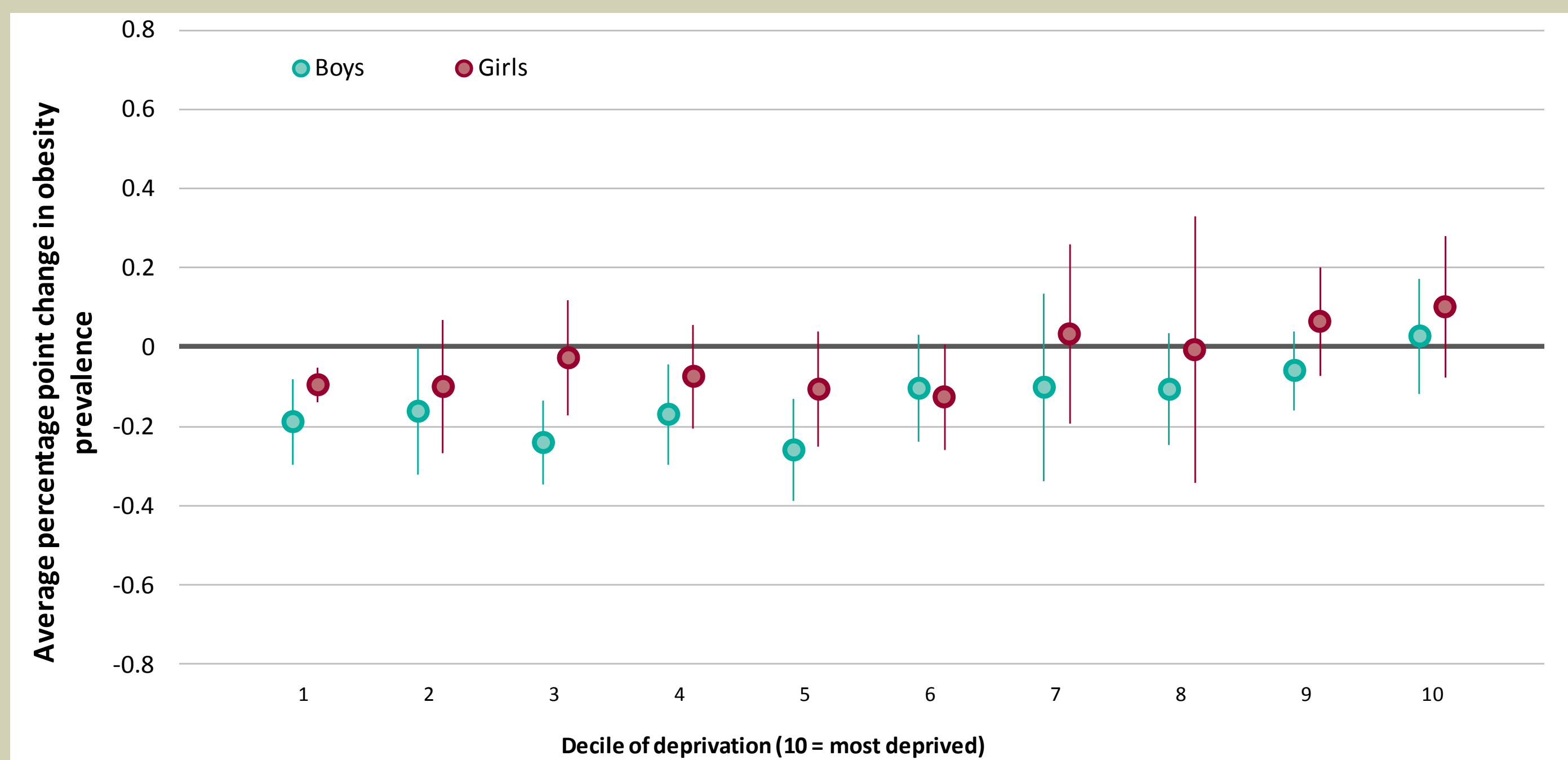
**Figure 1:** Prevalence of obesity (with 95% confidence limits) by year of measurement, school year, and sex.



**Figure 2:** Prevalence of obesity (with 95% confidence limits) by deprivation decile and school year; NCMP 2011/12.



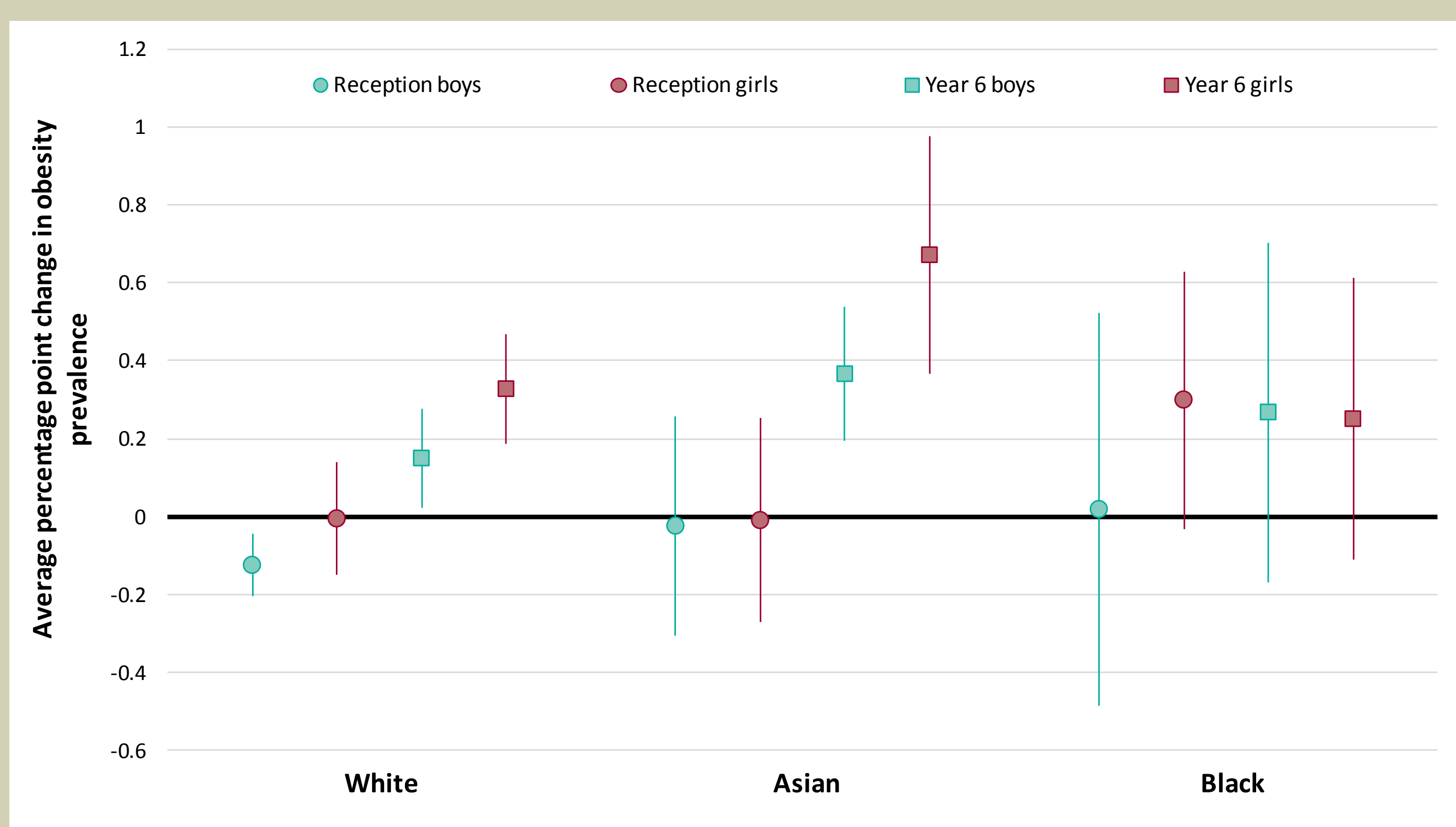
**Figure 3:** Annual change in obesity prevalence 2006/07 to 2011/12 (with 95% confidence limits) by deprivation decile and sex; Reception.



**Figure 4:** Annual change in obesity prevalence 2007/08 to 2011/12\* (with 95% confidence limits) by deprivation decile and sex; Year 6.



**Figure 5:** Annual change in obesity prevalence 2007/08 to 2011/12\* (with 95% confidence limits) by ethnic group, school year, and sex.



Across the six years of NCMP measurements there has been a statistically significant ( $p=0.018$ ) decrease of around 0.13% (-0.22% to -0.04%) per year in the prevalence of obesity among boys in Reception. Girls in Reception do not show a significant trend. (Figure 1)

Overall obesity prevalence for children in Year 6 shows a statistically significant increase for boys at 0.30% ( $p=0.008$ , 0.13% to 0.47%) and girls at 0.35% ( $p<0.001$ , 0.24% to 0.45%). (Figure 1)

Child obesity is closely correlated with deprivation (Figure 2). In both school years there is evidence that socioeconomic inequalities in obesity prevalence have been widening. In Reception obesity prevalence is decreasing by around 0.1% to 0.3% per year in the least deprived areas but remaining constant in the most deprived areas. In Year 6, obesity prevalence is increasing at a rate of around 0.5% per year in the most deprived areas, whilst remaining relatively stable in the least deprived areas. (Figures 3 and 4)

When the data are examined using broad ethnic groups, the only population group to show a statistically significant decrease in obesity prevalence since 2007/08 is White boys in Reception. By contrast, there is a statistically significant linear trend of increasing obesity prevalence for boys and girls in Year 6 from the White and Asian ethnic groups. (Figure 5)

**Background to obesity prevalence by ethnic group:** Obesity prevalence in 2011/12 among boys in Reception was highest in the Black African (17%), Black Other (14%), and Bangladeshi (14%) groups, compared to 9% among White British boys. For girls in Reception obesity prevalence is highest among those from Black African (17%), and Black Other (14%) ethnic groups, compared to 8% among White British girls. Boys in Year 6 from all minority ethnic groups are more likely to be obese than White British boys (19%), with boys of Bangladeshi (31%), Asian Other (28%), and Pakistani (27%) ethnicities having the highest prevalence. For girls in Year 6, obesity prevalence is high for children from Black African (27%) and Black Other (28%) ethnic groups, compared to 17% among White British girls. These patterns are consistent with data from previous years.

#### Discussion

Over the time period covered by the NCMP, socioeconomic inequalities appear to have widened. This is occurring in different ways for Reception and Year 6. Local and national interventions to reduce the prevalence of child obesity should be targeted across the social gradient but more so in areas of greater deprivation.

It appears that the apparent year on year increases in obesity prevalence observed among Asian children in Year 6 may be greater than those observed for the White ethnic groups. Considering that Black ethnic groups tend to have the highest prevalence of obesity, even if levels of obesity were not increasing, these groups should remain a high priority for obesity-related interventions.

\* Figures 4 and 5 exclude 2006/07 data due to poor completeness of child postcode among Year 6 children and poor completeness of ethnicity among Reception and Year 6.