



Parental perceptions of child weight

A UK cross-sectional study found that around a third of parents underestimated their child's weight and less than 1% overestimated the weight of their child.

Overview:

- About one third of parents in a UK study underestimated their child's weight and less than 1% overestimated the weight of their child.
- Clinicians should be aware of this underestimation phenomenon and of sociodemographic differences in the perception of children's weight status by parents.
- BMI measurements should be used in informing parents and directing them towards health services, helping children avoid weight-related ill health.

Background: In England, children at state schools have their heights and weights measured at age 4–5 years (reception) and age 10–11 years (year 6) as part of the [National Child Measurement Programme](#) (NCMP). Children are classified as overweight if their BMI is greater than the 85th centile of the [British 1990 growth reference population](#) and very overweight if they fall above the 95th centile ([National Obesity Observatory 2011](#)). The thresholds used in clinical assessment are 91st centile for overweight and 98th centile for very overweight

In 2013–14, more than a fifth (22.5%) of children in England aged 4–5 years were either overweight or obese, as were around a third (33.5%) aged 10–11 years ([Health and Social Care Information Centre 2014](#)).

Previous studies indicate that nearly two-thirds (62.4%) of overweight children are incorrectly perceived as being normal weight by their parents ([Rietmeijer-Mentink et al. 2013](#)). Parents that recognise their child's overweight status are more likely to identify that their child's health is at risk ([Park et al. 2013](#)).

Current advice: The NICE guideline on [obesity](#) recommends that BMI (adjusted for age and gender) should be used as a practical estimate of adiposity in children and young people. Tailored clinical intervention should be considered for children with a BMI at or above the 91st centile, depending on the needs of the individual child and family.



The NICE guideline on [weight management: lifestyle services for overweight or obese children and young people](#) adds that healthcare professionals should be trained to help parents and carers identify when their child is overweight or obese and understand the benefits of addressing their weight.

The NICE pathway on [obesity](#) brings together all related NICE guidance and associated products on the condition in a set of interactive topic-based diagrams.

New evidence: [Black et al. \(2015\)](#) did a cross-sectional study to compare parents' perceptions of their children's weight with objective assessments and identify characteristics associated with misclassification.

The study recruited parents of children enrolled in the NCMP in 6 primary care trusts in southern England. This study used a BMI threshold of 85th centile of British 1990 growth reference population to classify children as overweight and the 95th centile to classify children as obese.

Postal questionnaires were sent to parents on the day of the child's NCMP measurement but before they received feedback on their child's BMI. Parents were asked to state whether their child was underweight, healthy weight, overweight or very overweight.

A total of 3397 parents responded to the questionnaire (response rate=15% of all children in the study area). The analysis used data from 2976 (88%) children who had both a parent-reported assessment of weight and a valid NCMP BMI measurement.

When parent-reported weight was compared with objective NCMP measurement, just under three-quarters (68%) of parents had correctly classified their child as underweight, healthy weight or overweight. In total, 31% of parents had underestimated their child's weight and less than 1% overestimated the weight status of their child. Parents were more likely to classify their child as overweight, rather than healthy weight, when the child had a BMI at 99.7th centile or above (95% confidence interval [CI] 99.3 to 99.9th centile).

Parents were more likely to underestimate their child's weight if the child was black (odds ratio [OR]=1.5, 95% CI 1.1 to 2.1), of South Asian family origin (OR=1.6, 95% CI 1.3 to 2.0), male (OR=1.3, 95% CI 1.1 to 1.6), or aged 10–11 years rather than 4–5 years (OR=1.3, 95% CI 1.1 to 1.5). Parents from less deprived areas were less likely to underestimate their child's weight (OR=0.8, 95% CI 0.75 to 0.9).

Strengths of this study include that the population was ethnically and demographically diverse, and the NCMP measurements used as an objective comparator were taken by trained school nurses. Limitations include the low response rate to parental questionnaires and the possibility of non-response bias: responders were more likely to be white and less deprived.

Commentary by Dr Nick Townsend, Senior Researcher, British Heart Foundation Centre on Population Approaches for Non-Communicable Disease Prevention, Nuffield Department of Population Health, University of Oxford:

“Previous studies have shown that parents are likely to misperceive the weight status of their child ([Lundahl et al. 2014](#)). This is concerning, because healthcare professionals often rely on parents to seek help for their overweight children. The role of parents in managing child weight is recognised throughout [NICE guidance](#) and [Cochrane reviews](#).

“Set cut-offs are generally not used for defining overweight by BMI in children; instead reference curves that account for growth differences by age and sex are used. This new evidence shows for the first time how weight status cut-offs would look if derived from parental perceptions. Parents were more likely to classify their children as overweight at a much higher BMI centile than the clinically used growth curves. The 31% of parents who underestimated their child's weight is lower than found in earlier studies ([Parry et al. 2008](#) and [Lundahl et al. 2014](#)).

“The study also found that parents were more likely to underestimate their child’s weight status if they came from more deprived regions, were black or of South Asian family origin, and if the child was older or male. Research using dual-energy X-ray absorptiometry suggests that black children carry less fat for the same BMI as other ethnic groups, whereas children of South Asian family origin tend to carry more ([Shaw et al. 2007](#)). This finding suggests a greater physiological and cultural risk of obesity for the latter ethnic group.

“The findings of Black et al. (2015) strengthen calls for measures that decrease the gap between parental perceptions of child weight status and BMI cut-offs. They also add support for the maintenance of BMI surveillance systems such as the NCMP, from which this study obtained BMI measurements. The findings strengthen arguments that such measurements should be used in informing parents and linking them to health services, to support families and help children avoid weight-related ill health. Clinicians should be aware of this underestimation phenomenon and the sociodemographic differences in the perception of weight status of children by parents.”

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