

# National Child Measurement Programme

2021/22

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Commissioning Support & Business Intelligence Service

*Data, Insight, Business Intelligence, & Performance*

## Document Control

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### Distribution

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## Introduction

The National Child Measurement Programme (NCMP) began in 2005/06. It aims to measure the height and weight of every child in reception year (YR) and year 6 (Y6) – as they enter and leave primary school. It is used to gather population-level surveillance data and allow analysis of trends in growth patterns and obesity. This is then used to inform local planning and delivery of services for children. This report provides results from the 2021/22 Sefton NCMP programme by age, sex and compared to other areas and time-periods.

## Key considerations

The analysis within this report includes all children measured as part of the Sefton programme and therefore some children who attend school in Sefton but live outside the borough. Prevalence figures calculated for all children with a Sefton postcode (who may have been measured as part of the Sefton programme or a neighbouring programme) are available in the appendix.

The report includes analysis at geographies smaller than Local Authority including ward, school and deprivation quintile. Prevalence rates for small areas are subject to a high degree of natural variation due to the small numbers involved. In some cases, data from more than one year has been added together to increase the robustness of estimates. Confidence intervals have been calculated to help find out whether differences from the Sefton average are genuine (i.e. Statistically significant) rather than due to random variation or chance.

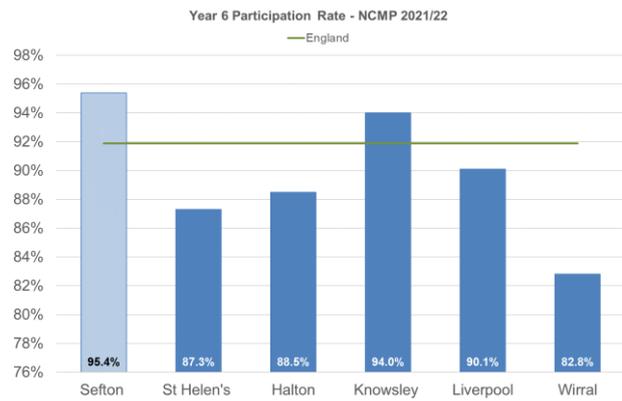
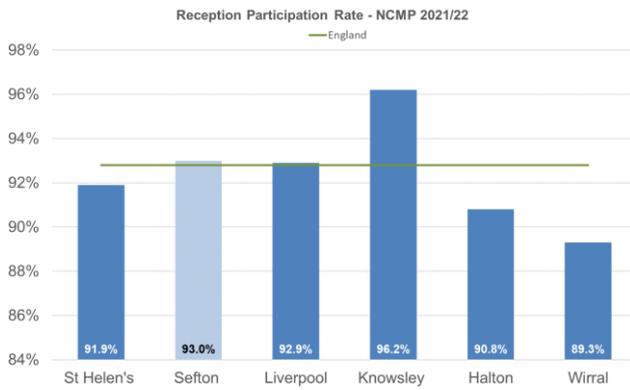
The Covid-19 pandemic disrupted delivery of the programme during 2019/20 and 2020/21. In 2019/20 the measurement of children was stopped part-way through the school year as schools were ordered to close. Sefton's Year 6 coverage for 2019/20 was 93.6% and prevalence estimates from this data are judged reliable. Reception coverage was 31.9%. Prevalence figures are deemed fit for publication, but interpretation should be made with caution.

In 2020/21, Local authorities were requested to collect data in a sample of their schools to enable the production of national and regional estimates of prevalence by body mass index (BMI) category. In Sefton, 466 children were measured in 8 primary schools across Sefton. The sample of Sefton children alone is too small and unlikely to be representative of Sefton as a whole. Therefore, there are no reliable prevalence figures for Sefton for 2020/21.

## Coverage

Sefton's coverage remained above the 85% participation target in 2021/22 – 93% for reception and 95.4% for Year 6. Sefton's reception coverage was similar to the England average (92.8%) and Year 6 coverage was higher than the England average (91.9%). Sefton had the highest Year 6 and the second highest reception participation rate of the Liverpool City Region (LCR).

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Year R	98.0%	96.9%	97.2%	96.3%	97.9%	96.2%	97.4%	96.7%	93.7%	94.4%	95.2%	31.9%	-	93.0%
Year 6	93.9%	93.1%	95.1%	89.9%	97.4%	97.3%	93.6%	91.7%	95.4%	92.4%	92.2%	93.6%	-	95.4%

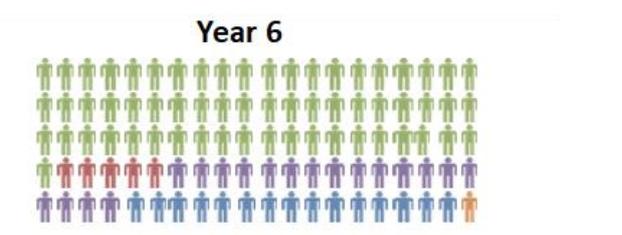
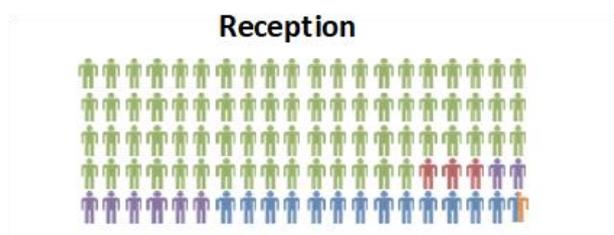


## 2021/22 prevalence

As part of the NCMP programme a child’s BMI is calculated and compared to a growth reference chart for their age and sex (the British 1990 growth reference, UK90). From this a BMI centile (how close the child’s BMI is to the average BMI value) is calculated and classified into the following categories:

- BMI centile  $\leq 2$  - Underweight
- BMI centile  $> 2$  and  $< 85$  – Healthy Weight
- BMI centile  $\geq 85$  and  $< 95$  – Overweight
- BMI centile  $\geq 95$  – Living with obesity
- BMI centile  $\geq 99.6$  Living with severe obesity

In 2021/22 over 1 in 10 reception children measured in Sefton were living with obesity, 1 in 4 were overweight or living with obesity and 1 in 33 children were living with severe obesity. In Year 6 this rises to almost 1 in 4 children living with obesity, 1 in 3 overweight or living with obesity and 1 in 20 living with severe obesity. Less than 1 in 100 children in both school years were underweight.



-  Underweight
-  Healthy Weight
-  Overweight
-  Obese
-  Severely Obese

## Benchmarked Results

Sefton’s prevalence of children living with obesity and overweight children has been compared with other areas to see whether there are any differences. Comparisons have been made with England, the North West region, the other Liverpool City Region (LCR) authorities and Sefton’s CIPFA nearest neighbours (similar local authorities).

In general, few statistically significant differences are found between Sefton’s rates of overweight children and children living with obesity and comparators. The only statistically significant differences are:

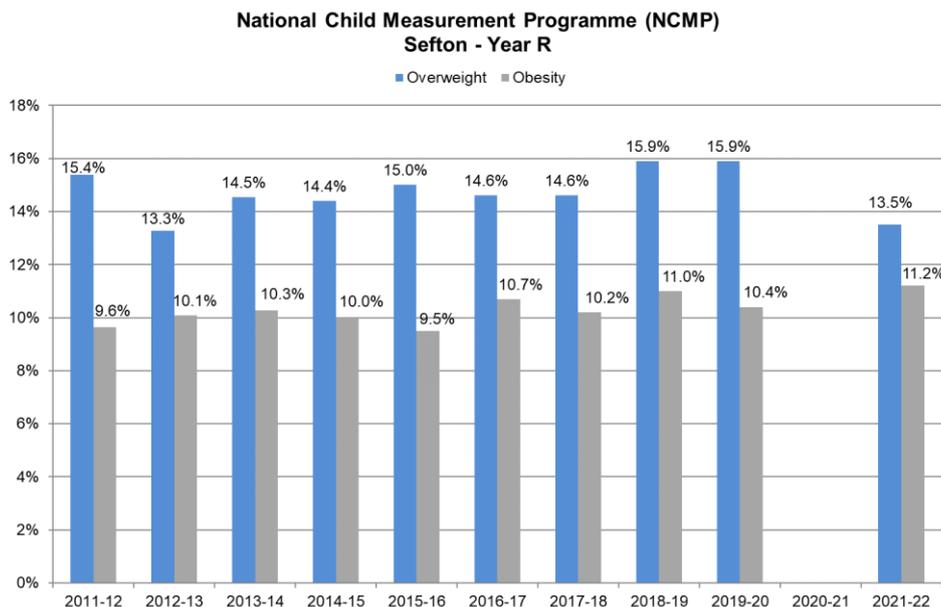
- Sefton’s reception overweight rate is significantly higher than the national average
- Sefton’s Year 6 obesity rate is significantly lower than Knowsley, Liverpool, and St Helen’s

National Child Measurement Programme 2021-22				
Area	Year R Overweight	Year R Obese	Year 6 Overweight	Year 6 Obese
<b>Sefton</b>	13.5%	11.2%	15.1%	23.4%
England	12.1%	10.1%	14.3%	23.4%
NW	12.7%	10.6%	14.6%	24.4%
Knowsley	13.8%	13.3%	14.3%	28.9%
Liverpool	13.6%	12.2%	14.8%	30.2%
Halton	14.1%	12.9%	15.3%	26.9%
St Helens	15.7%	13.1%	15.1%	28.6%
Wirral	12.8%	10.7%	15.0%	21.4%
Torbay	15.3%	10.2%	14.6%	22.4%
North Tyneside	15.7%	10.5%	13.4%	25.3%
Northumberland	11.8%	9.2%	14.6%	21.7%
Southend on Sea	11.8%	10.2%	15.0%	23.1%

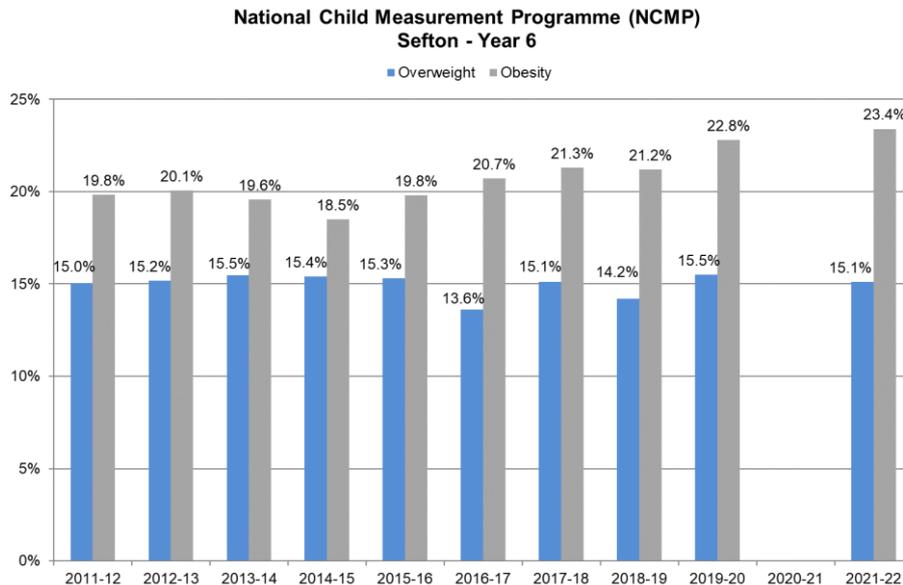
Green – significantly lower than Sefton (at 95% level)  
 Orange – not significantly different to Sefton (at 95% level)  
 Red – significantly higher than Sefton (at 95% level)

## Trend

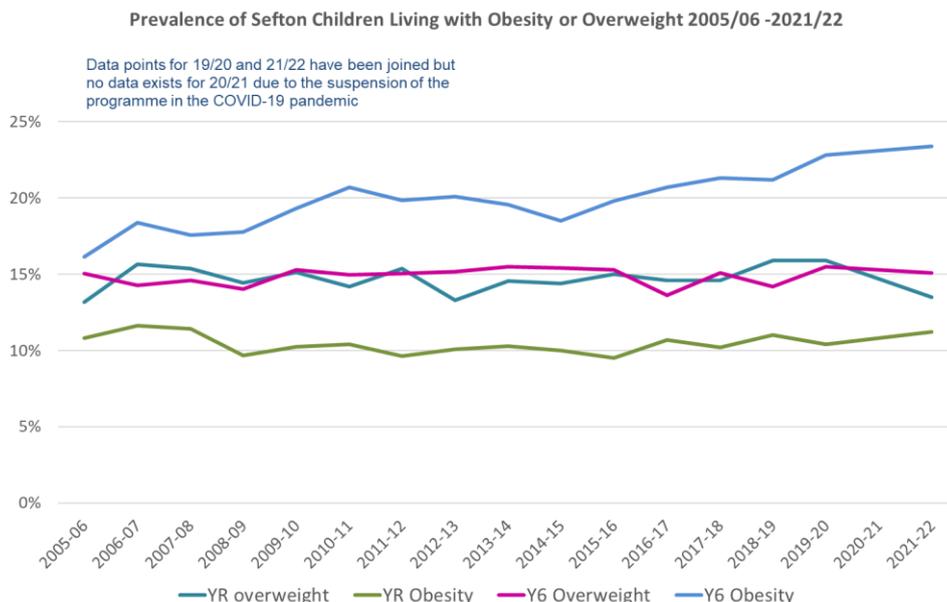
Sefton’s prevalence of overweight reception children (13.5%) decreased compared to 2018/19 (the last period unaffected by the COVID-19 pandemic). However, this decrease is not statistically significant. The rate of children in reception living with obesity (11.2%) is slightly higher than pre-pandemic rates, but again this is not a statistically significant difference.



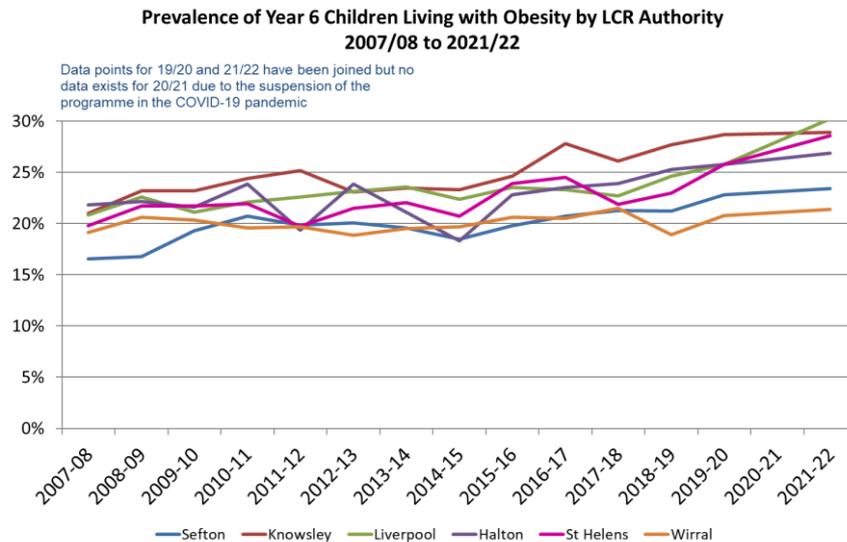
Sefton’s rate of overweight children (15.1%) in Year 6 is a small decrease compared with 2019/20 (15.5%) but an increase on 2018/19 (14.2%). Rates of Year 6 children living with obesity in 2012/22 (23.4%) were higher than 2019/20 and 2018/19 estimates. The increase in the proportion of overweight children compared with 2018/19 is not statistically significant but for children living with obesity a statistically significant difference can be seen between 2021/22 and 2018/19.



However, it is recommended that at least five years of data are used to properly assess trends in childhood obesity. The proportion of Sefton overweight children has been relatively stable with very few significant increases or decreases since the beginning of the programme. The same can also be said for reception children living with obesity. However, greater changes have been seen in Sefton’s rate of Year 6 children living with obesity. Since 2006/07, the proportion has increased by 5 percentage points. Sefton’s Year 6 severe obesity prevalence has also seen a statistically significant increase (from 3.2% to 5.0% between 2008/09 and 2021/22).



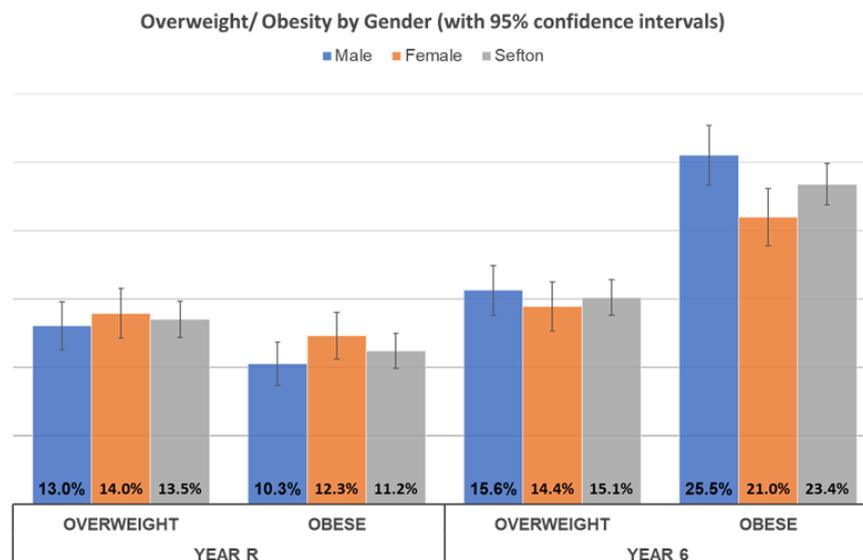
The trend of increasing obesity (in Y6 in particular) is one that has also been seen nationally, regionally and across the LCR. In 2020/21 an unprecedented increase was seen in national estimates of children living with obesity, with sharp rises in both year groups. The data for 2021/22 shows a decrease in children living with obesity, but prevalence remains higher than pre-pandemic levels. Year 6 rates of children living with obesity have gradually increased for all LCR authorities. These increases are statistically significant for all authorities except Wirral.



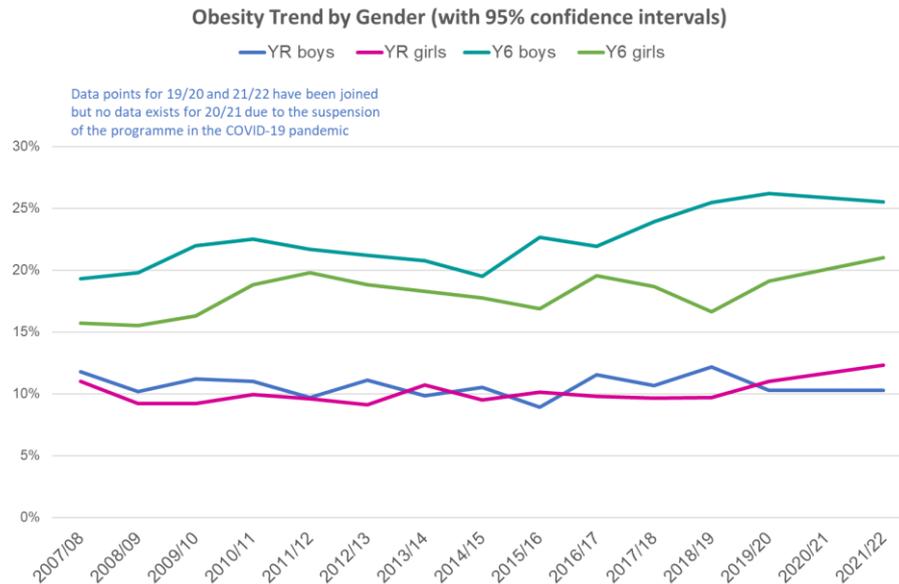
## Sex

In 2021/22, rates of overweight children and children living with obesity were higher amongst reception girls than boys. In Year 6, however, a higher proportion of boys were overweight or living with obesity than girls.

Year 6 boys had the highest obesity rates at 25.5%, a significantly higher rate than the girls (21.0%). Year 6 boys had the highest overweight rates at 15.6%. However no statistically significant differences were found between the overweight rates of girls and boys.



Since 2007/08 the proportion of Year 6 girls living with obesity has increased by 5 percentage points. For Year 6 boys it has increased by 6 percentage points. These are both statistically significant increases. No statistically significant differences were found for Reception obesity rates.



## Ethnicity

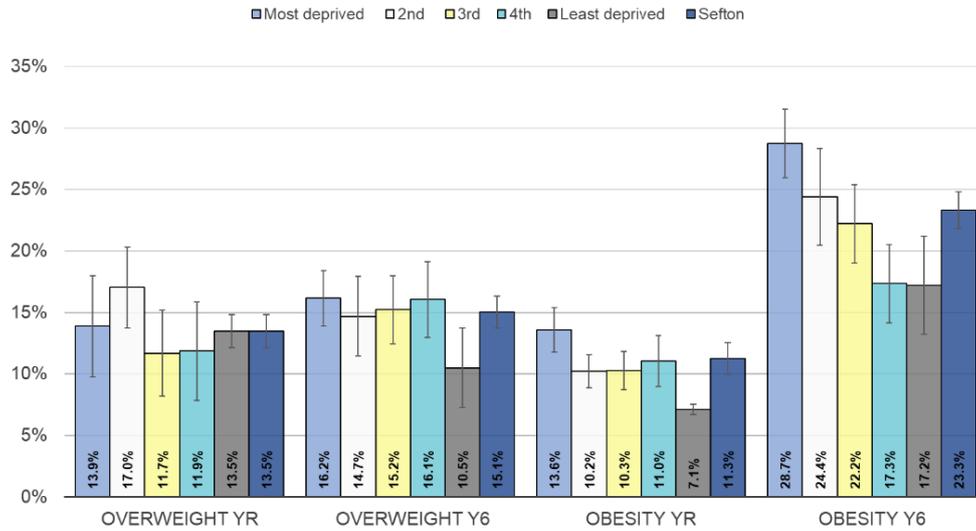
Ninety-eight percent of records had a valid ethnicity recorded for the 2021/22 programme. Of these children, 91% were categorised as White. No significant differences were found between the weight status of White children and children from Black and Minority Ethnic (BME) groups in Sefton. However, the rates for children from BME groups are based on very low numbers, limiting the ability to detect any true differences. Nationally, where larger cohorts of children are analysed, living with obesity is highest for children of Black ethnicity and lowest for Chinese children in both reception and Year 6.

## Deprivation

The Indices of Multiple Deprivation 2019 (IMD 2019) are the Government's official measure of deprivation at small area level. IMD 2019 is based on lower super output areas (LSOAs) – geographical areas containing approximately 1,500 people. Sefton's LSOAs are ranked into national quintiles (20% bands) from most to least deprived. For NCMP 2021-22 pupils' postcodes were collected. Pupil home postcode data enables the LSOA and therefore the deprivation quintile to be determined.

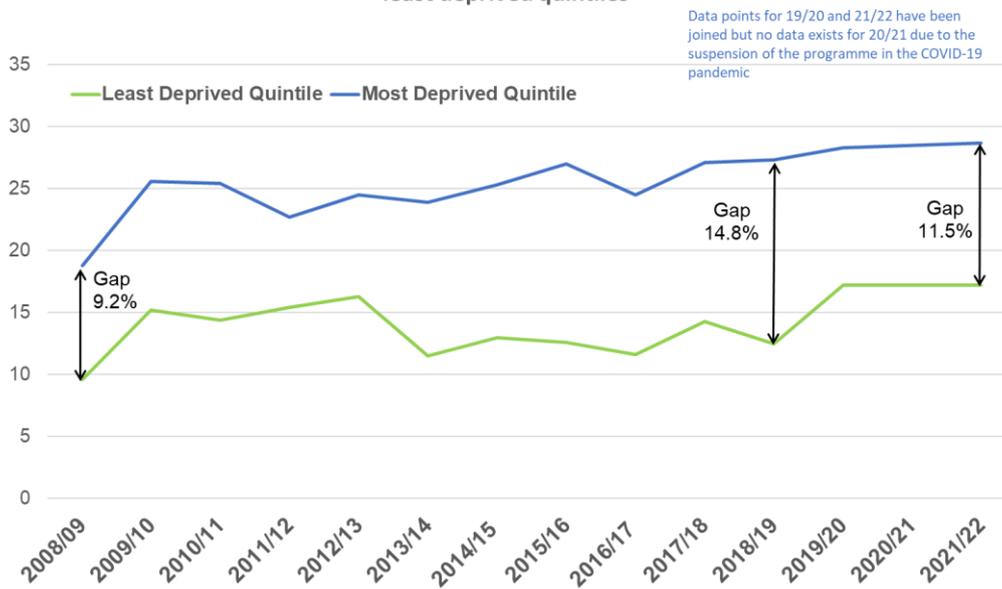
Overweight rates for the different deprivation quintiles did not differ significantly from each other or from the Sefton average for either year group. However, Sefton's rates of obese children generally increased with increasing deprivation. Year 6 obesity rates in the most deprived quintile (28.7%) were more than 1.5 times that of children living in the least deprived quintile (17.2%).

**Overweight/Obesity by Deprivation Quintile  
(with 95% confidence intervals)**



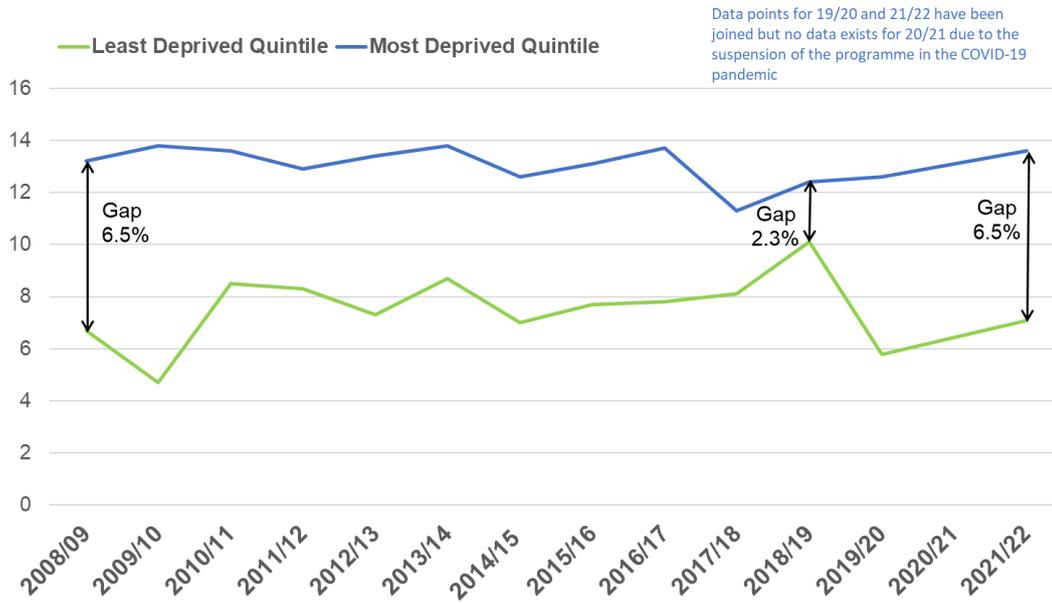
The gap in obesity prevalence between the most and least deprived quintiles for Year 6, decreased from 14.8% in 2018/19 to 11.1% in 2019/20. However, this narrowing was due to increases in obesity in the most affluent quintile rather than improvements in the most deprived quintile. In 2021/22 the gap has increased slightly to 11.5%.

**Gap in obesity prevalence between Y6 children living in Sefton's most and least deprived quintiles**



The gap in prevalence of children living with obesity between the most deprived and least deprived quintiles was smaller for the reception cohort (6.5%). However, it has more than doubled since before the pandemic. In 2021/22, the prevalence of reception children in the most deprived quintile living with obesity was 13.6%, compared to 7.1% in the least deprived quintile.

Gap in obesity prevalence between YR children living in Sefton's most and least deprived quintiles

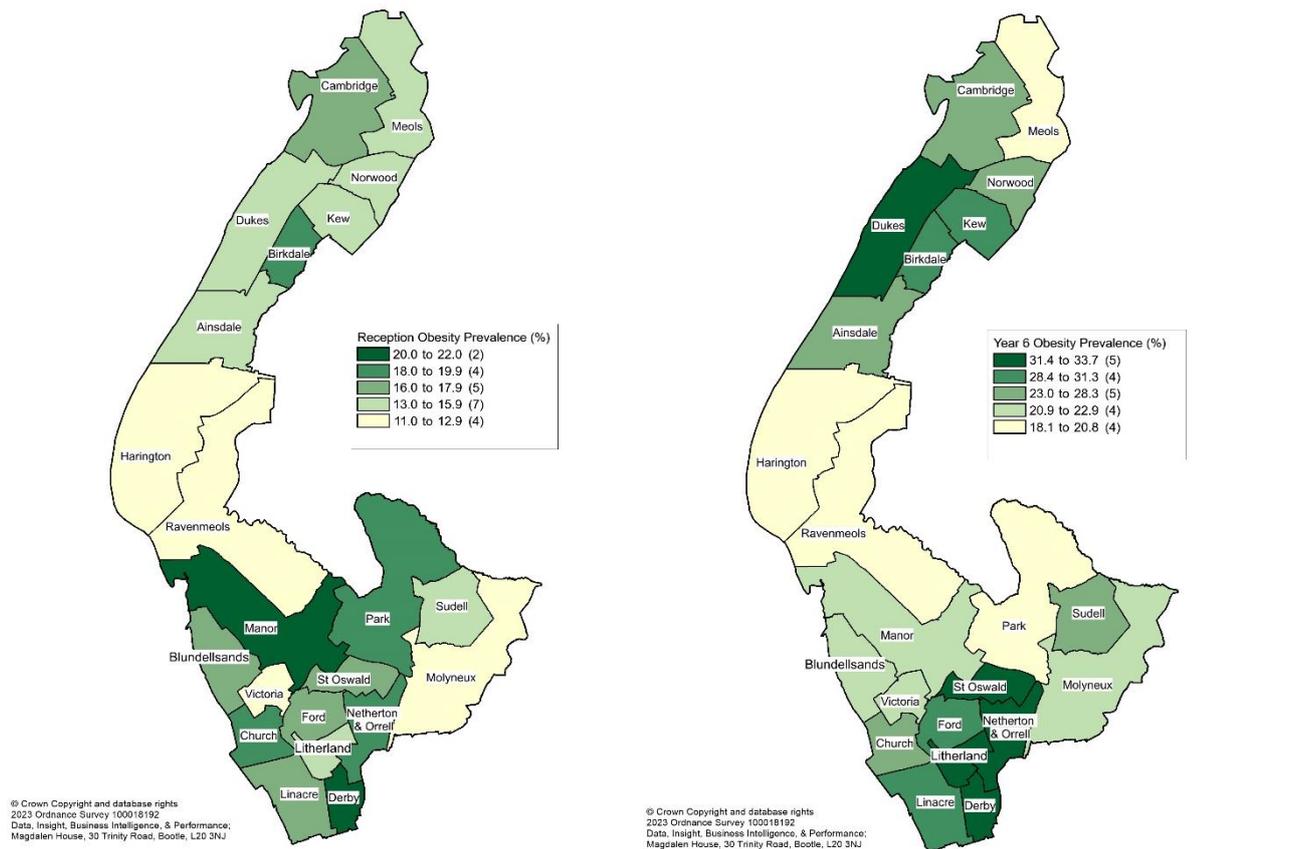


## Ward

Ward level figures can be subject to a high degree of natural variation due to the small numbers involved. Therefore, multiple years of data have been pooled to make the analysis more robust. For Year 6 this is 4 years of data – 2017/18, 2018/19, 2019/20 and 2021/22. For Reception data from 2017/18, 2018/19, 2021/22 has been combined along with the partial data available for the 2019/20 year.

Analysis by Sefton’s 22 electoral wards revealed some differences in obesity rates with prevalence tending to be higher for the borough’s more deprived wards. Derby had the highest rate of obesity in reception (21.9%), significantly higher than the Sefton average. In contrast, the lowest rates were 11.0% in Victoria and 11.7% in Harington, both significantly lower than the Sefton average. For Year 6, obesity was highest in St Oswald (33.7%), Litherland (33.3%), Netherton and Orrell (32.2%) and Derby (31.5%). All of which had significantly higher rates than the Sefton average. The prevalence of Year 6 children living with obesity was significantly lower than the Sefton average for Harington (18.1%), Ravenmeols (18.9%), Park (19.2%) and Meols (19.5%).

The lowest reception overweight rate was Harington (12.9%) and Manor had the highest (20.0%). For Year 6, Birkdale had the highest overweight rate (23.5%) and Manor the lowest (15.9%). However no statistically significant differences were found between any ward level overweight rates and the Sefton average.



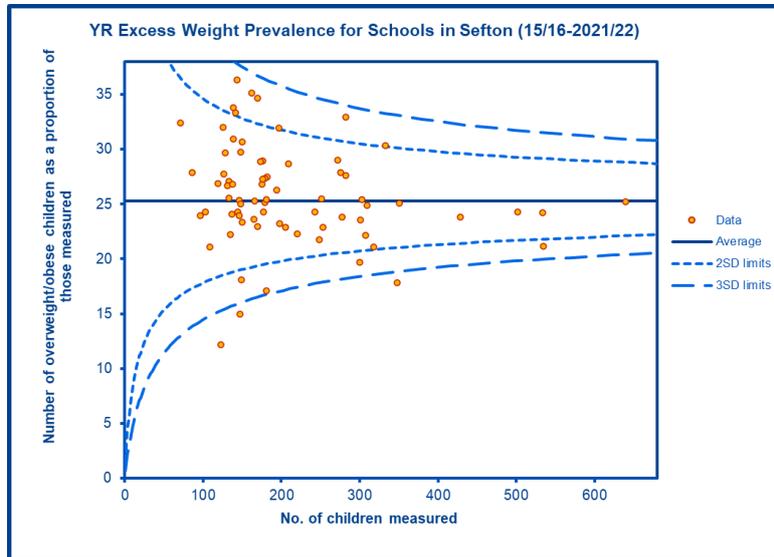
## School

Multiple years of NCMP data have been combined to analyse differences between schools in Sefton, due to small class sizes in some primary schools. For Year 6 this is 2015/16 to 2021/22. For reception this is data from 2015/16 to 2018/19 and 2021/22 for all schools and data for 2019/20 for the 8 schools where measurements took place.

The excess weight (overweight and obese) prevalence rates for Sefton schools have been plotted on funnel charts. Funnel charts allow many points to be plotted at the same time and provide information about whether each point is significantly above or below an expected value. In this case the expected value is the average Sefton excess weight prevalence. The charts can be used to pinpoint schools whose rates lie at the outer extremes of the normal distribution of the data (2 or 3 standard deviations from the Sefton average). We can be 95% confident that those with a prevalence 2 standard deviations away from the Sefton average are statistically significantly different to the Sefton average. For those with a prevalence 3 standard deviations away from the Sefton average, we can be 99% confident that they are statistically significantly different to the Sefton average. School level figures should be interpreted with caution. Differences in excess weight rates between schools are often due to differences in the sociodemographic make up of schools and are not a measure of school environment.

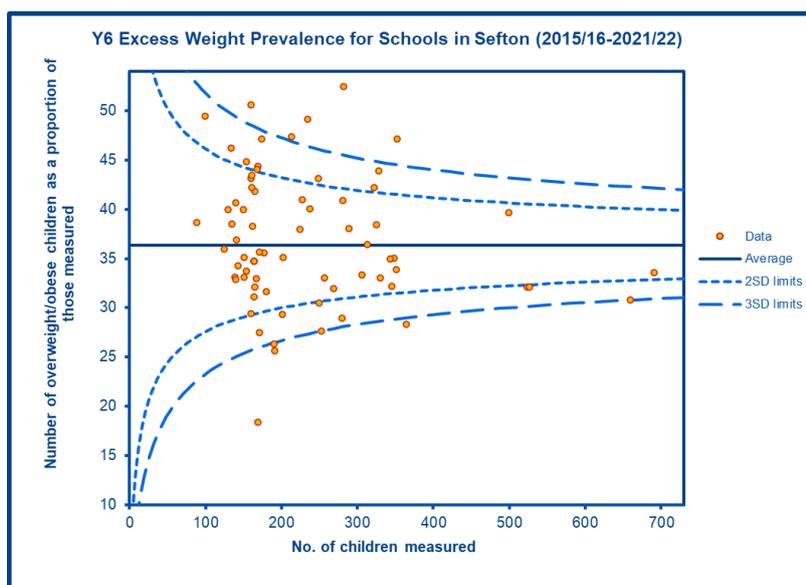
The reception excess weight prevalence was significantly higher than the Sefton average at the 95% level for Christ Church, Netherton Moss, Rimrose Hope, St Monica’s, St Oswald’s, St William of York, St Phillip’s Litherland and St John Crossens.

The reception excess weight prevalence was significantly lower than the Sefton average at the 99% level for Our Lady of Compassion, St Jerome’s and Ursuline and at the 95% level for Aintree Davenhill, Freshfield Primary, Forefield Infants and Valewood.



The Year 6 excess weight prevalence was significantly higher than the Sefton average at the 99% level for All Saints, Linaker Primary, Rimrose Hope, St Elizabeth’s, St Oswald’s and at the 95% level for Bedford Primary, Bishop David Sheppard, Christ Church, Holy Trinity, Lander Road, Linacre, Our Lady Queen Of Peace, St Monica’s and St Robert Bellarmine.

The Year 6 excess weight prevalence was significantly lower than the Sefton average at the 99% level for St Thomas, St Jerome’s, Trinity St Peter’s and St Luke’s and at the 95% level for Churchtown, Lydiate, Forefield Junior, Freshfield, Great Crosby, Larkfield, St John Bosco and Woodlands Primary.



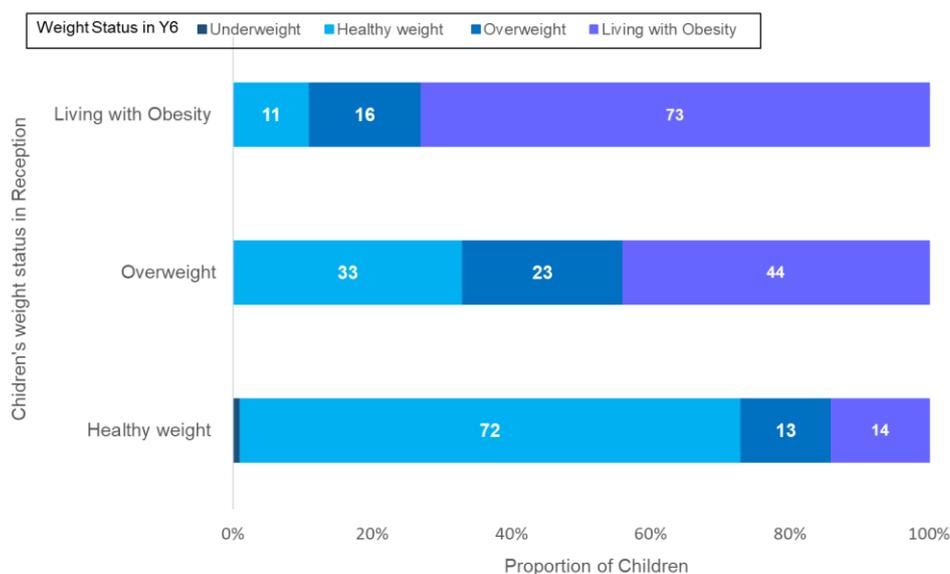
## Changes in Pupil Weight Status between Reception and Year 6

Now that the National Child Measurement Programme has been delivered in Sefton for over 7 years it is possible to try and track the weight status of children who have participated in both Reception and Year 6. Such analysis will help improve understanding of how children’s weight changes during primary school and will inform the planning of public health interventions to reduce childhood obesity.

Reception data from the 2015/16 programme was matched against Year 6 data from the 2021/22 programme to explore changes in the weight status of this cohort of children. The records of 2610 children were matched between the two programmes and included a valid weight status at both years. This represents 87% of Reception children who were measured in the 2015/16 programme being tracked to Year 6.

Overall, 65% of the children had the same weight status at Year 6 as at Reception, 27% had moved to a higher weight status and 8% had changed to a lower weight status. More specifically:

- Of the children who were a healthy weight in Reception 72% remained a healthy weight, 13% were overweight, 14% were living with obesity and 1% were underweight at Y6.
- Of the children who were overweight in Reception 23% remained overweight, 44% were living with obesity and 33% were a healthy weight at Y6.
- Of the children living with obesity in Reception 73% continued to be living with obesity in Y6, 16% were overweight and 11% were a healthy weight at Year 6.
- Of the children who were underweight in Reception, the majority had moved to a healthy weight in Year 6 (64%)



Weight status changes were also analysed by sex. No differences in weight status changes were found between girls and boys who were overweight or living with obesity in Reception. However, of those who were a healthy weight in Reception, a larger proportion of girls remained a healthy weight in Year 6 (76%) compared to boys (69%). A lower proportion of girls moved to a higher weight status (22%) than boys (31%). This difference between the sexes has also been found by the Office for Health Improvement and Disparities in national analysis of changes to children's weight status.

## Conclusion

In Sefton, in 2021/22 more than 1 in 10 children entering primary school and almost 1 in 4 completing primary school were living with obesity. If children who were overweight are also included, it rises to 1 in 4 children in reception and 1 in 3 children in Year 6.

Few significant differences were found between Sefton's rates of overweight children and children living with obesity and comparator areas, including England, the North West region, other LCR authorities and statistical neighbours.

Sefton's proportion of overweight children (for both years) and reception children living with obesity have been relatively stable since the NCMP began. However, statistically significant increases have been seen in Sefton's rate of Year 6 children living with obesity and severe obesity. Similar rises have been found across England and the other LCR authorities.

Girls in reception had a higher prevalence of living with obesity than boys in reception. However, in Year 6 the opposite was true. Boys have seen a greater increase in Year 6 obesity prevalence than girls, but the rises are statistically significant for both sexes.

Overweight rates did not differ by deprivation quintile but rates of children living with obesity generally increased with increasing deprivation. In 2021/22, the Year 6 obesity rate in the most deprived quintile was more than 1.5 times that of children living in the least deprived quintile – a slight increase in the gap in obesity prevalence compared with 2019/20. The gap in obesity prevalence between the most deprived and least deprived quintiles is smaller for the reception cohort. However, it has more than doubled since before the pandemic.

When changes to children's weight status were analysed, 65% of the children had the same weight status in Year 6 as in reception, 27% had changed to a higher weight status and 8% had changed to a lower weight status. Of the children who were a healthy weight in reception, 27% had moved to a higher weight status. Of the children who were overweight or living with obesity 42% had remained in the same weight category and 27% had moved to a higher weight status. A larger proportion of boys with a healthy weight in reception had moved to a higher weight status in Y6 compared to their female counterparts.

## References

Sefton NCMP Enhanced Dataset (2021/22), supplied by Office for Health Improvement and Disparities

[National Child Measurement Programme, England, 2021/22 school year - NDRS \(digital.nhs.uk\)](https://digital.nhs.uk)

[Changes in the weight status of children between the first and final years of primary school \(phe.org.uk\)](https://phe.org.uk)

## Appendix

### NCMP 2021/22 results – Children whose home postcode falls within the Local Authority

National Child Measurement Programme 2021-22				
Area	Year R Overweight	Year R Obese	Year 6 Overweight	Year 6 Obese
<b>Sefton</b>	13.5%	11.3%	15.3%	23.3%
England	14.3%	10.1%	14.3%	23.4%
NW	12.7%	10.6%	14.6%	24.4%
Knowsley	13.7%	12.7%	14.1%	28.5%
Liverpool	13.8%	12.3%	14.7%	30.4%
Halton	13.7%	12.6%	14.8%	25.4%
St Helens	15.7%	12.9%	15.2%	29.1%
Wirral	12.7%	10.8%	15.2%	21.3%
Torbay	15.1%	10.6%	14.2%	21.9%
North Tyneside	15.3%	10.6%	13.5%	24.7%
Northumberland	12.1%	9.2%	14.4%	21.8%
Southend on Sea	11.4%	10.1%	14.6%	22.9%

Green – significantly lower than Sefton (at 95% level)

Yellow – not significantly different to Sefton (at 95% level)

Red – significantly higher than Sefton (at 95% level)