Strategic Policy, Planning and Performance Report
Public Health Intelligence

Subject:	Jersey Child Measurement Programme 2019/2020
Date of report:	18 August 2022

Introduction

Childhood obesity and excess weight are significant health issues for children and their families. They can result in serious implications for a child's physical and mental health, which can continue into adulthood.[1] The Jersey Child Measurement Programme (JCMP) data enables the government to plan services, tackle child obesity and monitor progress.

This report presents findings from the JCMP for the 2019/2020 academic year, and compares them to historical trends and to England.

The height and weight of children in Reception (Year R: 4 to 5-year-olds) and Year 6 (10 to 11-year-olds) are measured annually through the JCMP. The total number of children measured in the 2019/2020 academic year was 1,868 (93% of all eligible children). The proportion of children measured was around 4% lower than that measured in the 2018/2019 programme (97%).

Due to the impacts of school closures from March 2020 in response to the COVID-19 pandemic, the JCMP for Year R children was extended into the autumn term, 2020. Measurements for most Year R children (approximately 725 children) were completed during the normal timeframe, whilst a small proportion (175 children) were measured in their first term of Year 1.

Body Mass Index (BMI) can be calculated for each pupil from their height and weight measurements. Individuals are categorised as either 'underweight', 'healthy weight', 'overweight', 'obese' or 'severely obese' categories. As BMI does not measure body fat directly, it cannot be used as a diagnostic tool. BMI can be used as a measure to track weight status in populations and as a screening tool to identify *potential* weight problems in individuals. The proportion of children that are exceeding healthy weight, and therefore at increased risk of poor health is calculated. See "Notes" for further information.

In this report, the term 'prevalence of obesity' is equivalent to the proportion of children classified as 'obese' or 'severely obese'.

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[1] Childhood obesity: applying All Our Health - GOV.UK (www.gov.uk)

Summary

In 2019/2020:

- in Year R, the prevalence of obesity was similar (10%) to that in 2018/2019 (8%)

- in Year 6, obesity rates remained similar to 2018/2019 at 17%

- around one in four children in Year R (23%) were overweight or obese, whist one in three children in Year 6 (33%) were overweight or obese

- the proportion of Year R children classified as overweight or obese has remained at around 20% over the last decade

- the prevalence of children classified as overweight or obese in Year 6 (around 30%) has remained unchanged over the last 10 years, based on the 3-year rolling average

- the proportion of children categorised as overweight or obese in both Year R and Year 6 was statistically similar for females and males

- children in Year R and Year 6 living in urban areas were more likely to be obese than lose living in rural areas

- in Year 6, a higher proportion of children who attended non-fee-paying schools were overweight or obese (35%), compared to children who attended fee-paying schools (23%)

- the proportion of children in both Year R and Year 6 categorised as overweight or obese was statistically similar in Jersey to that in England

1. By age and sex

In the 2019/2020 academic year:

- more than three-quarters (77%) of Year R children had height and weight measurements that classified them as having a healthy weight BMI, whilst in Year 6 around two-thirds (66%) were of 'healthy weight'

- obesity prevalence (including severely obese was 10% in Year R, lower than that in Year 6 (17%) (Table 1 and Figure 1)

- less than one in four Year R children (23%) were overweight or obese, compared to one in three children in Year 6 (33%), (Table 1 and Figure 2)

Table 1. BMI category prevalence. percentages, Jersey, academic year 2019/2020

	Year R	Year 6
Underweight	<1	1
Healthy weight	77	66
Overweight	13	16
Obese	8	13
Severely Obese	2	4
Combined Overweight and Obese	*23*	*33*

Note: percentages rounded to the nearest integer

Figure 1. BMI category prevalence by year group, Jersey, academic year 2019/2020

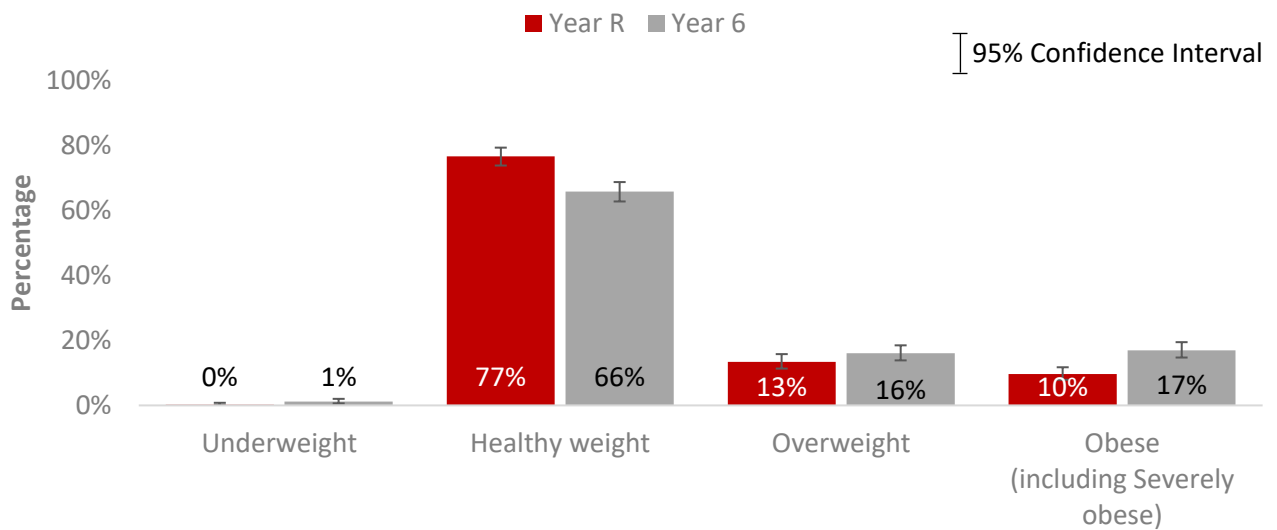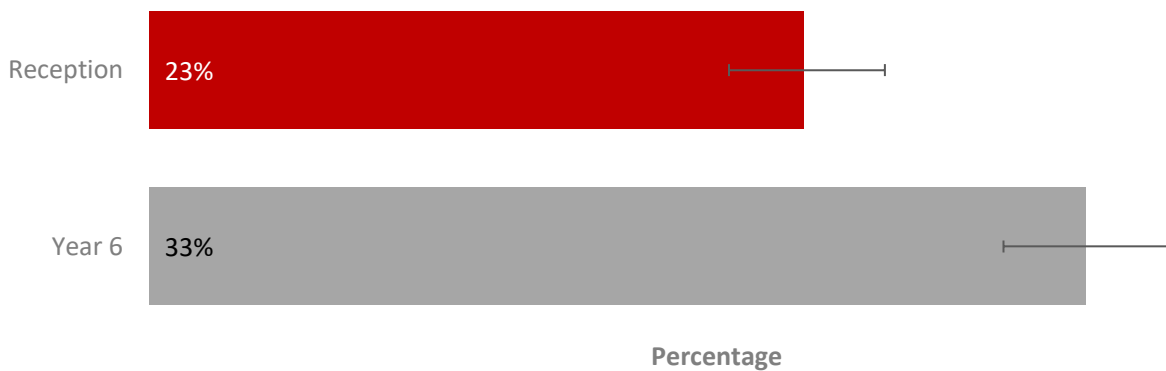Legend: Year R, Year 6, 95% Confidence Interval

BMI category	Year R	Year 6
Underweight	0%	1%
Healthy weight	77%	66%
Overweight	13%	16%
Obese (including Severely obese)	10%	17%

Figure 2. Prevalence of combined overweight and obese combined by year group, Jersey, academic year 2019/2020

	Percentage
Reception	23%
Year 6	33%

- in both Year R and Year 6, the proportion of females categorised as overweight or obese was statistically similar to males (Table 2)

Table 2. BMI category prevalence by sex, percentages, Jersey, academic year 2019/2020

	Year R		Year 6	
	Males	Females	Males	Females
Underweight	<1	<1	<1	2
Healthy weight	73	80	65	67
Overweight	15	11	16	16
Obese	9	6	14	11
Severely Obese	2	2	5	3
Combined Overweight and Obese	*27*	*20*	*35*	*31*

Note: percentages rounded to the nearest integer

Figure 3. Proportion of Year R children classified as underweight, overweight, and obese by sex, Jersey, academic year 2019/2020
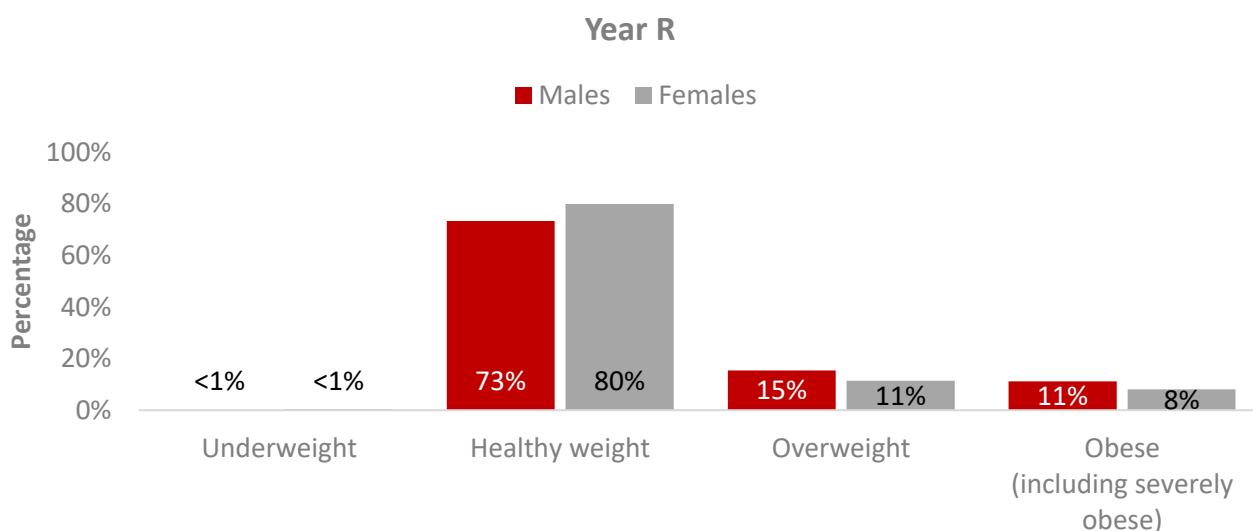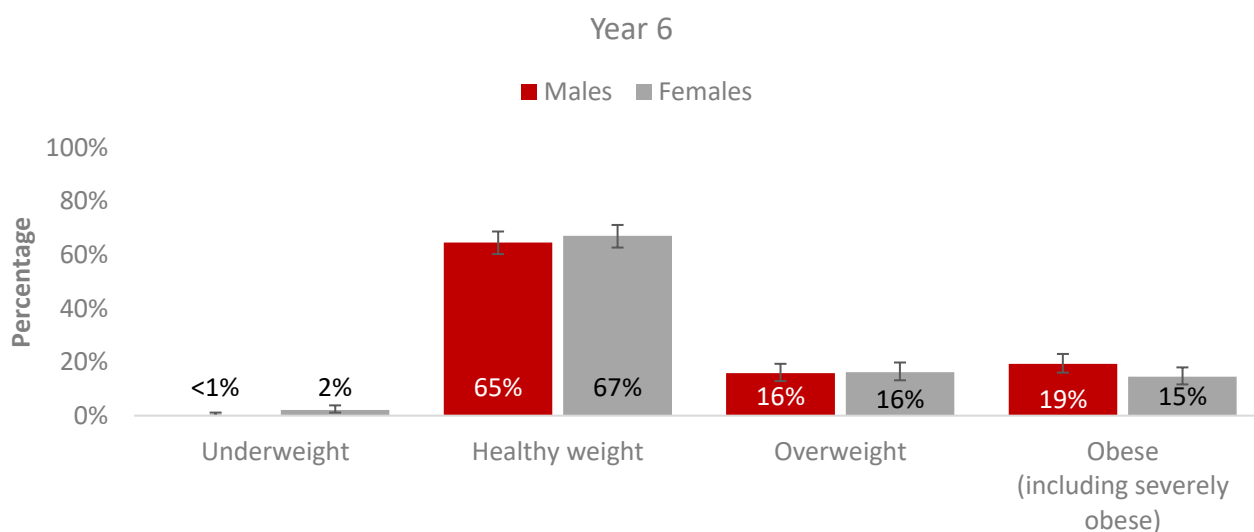

Figure 4. Proportion of Year 6 children classified as underweight, overweight, and obese by sex, Jersey, academic year 2019/2020

Note: In sections 2 to 4, data is considered as a rolling average over a period of three academic years, with the most recent three-year period shown being 2017-2019. The three-year combined data is more robust than a single year, and better for overall trend analysis.

2. Trends over time

Year R

- the proportion of Year R children classified as overweight or obese has not changed significantly since the 2009-2011 period

- the proportion of children classified as obese in Year R has decreased marginally from 12% in 2000-2002 to 9% in 2017-2019, and has remained similar since 2005-2007

Figure 5. BMI classifications for Year R, Jersey, three-year averages (2000-2019)
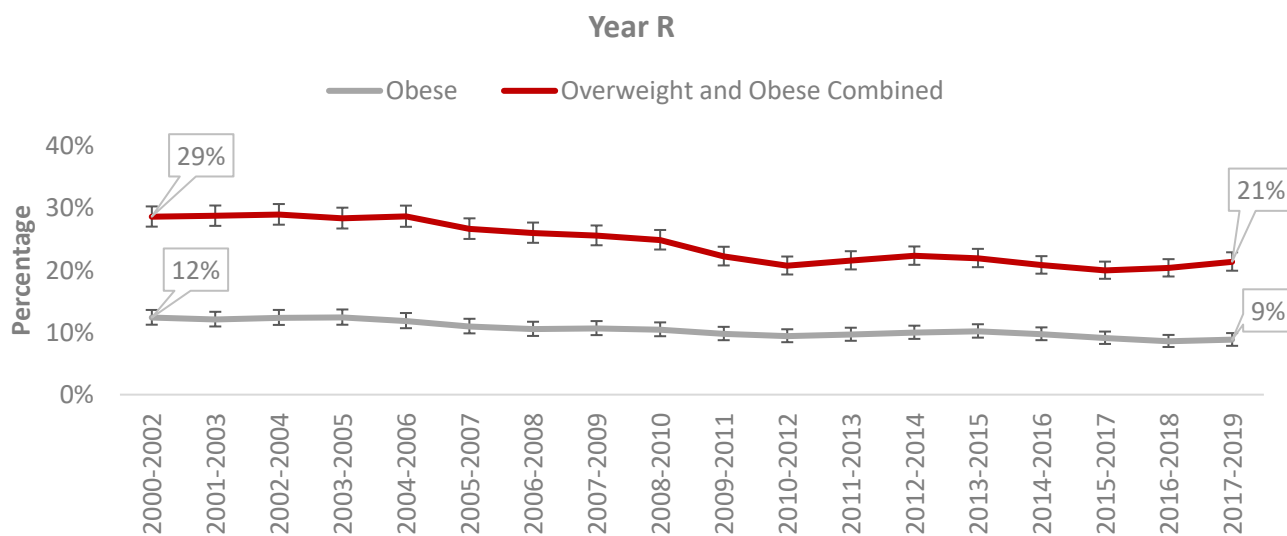
Year 6

- since the Jersey Child Measurement Programme was expanded to include measurement of Year 6 children in 2011, the proportion of overweight or obese children has remained at a little under one in three (31% in 2017-2019)

- the prevalence of obesity in Year 6 has not changed significantly since 2011-2013, remaining at around one in six (18% in 2017-2019), (Figure 6)

*Figure 6. BMI classifications for Year 6, Jersey, three-year averages (2011-2019)*
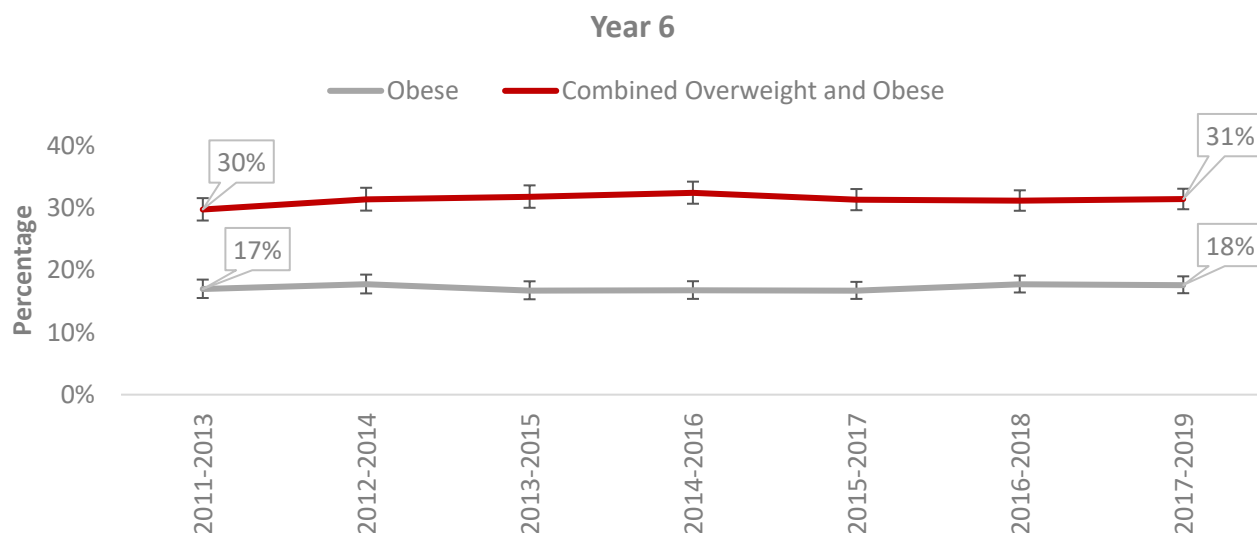
3. By Parish of residence

The parish of residence of each child was categorised as 'urban', 'semi-urban' or 'rural'.[2]

- a higher proportion of children living in 'urban' parishes in Year R were obese (12%) compared to those living in 'rural' and 'semi-urban' areas (7% respectively)

- the proportion of children classified as overweight or obese in 'rural' parishes (25%) in Year 6 was lower than the proportion in 'semi-urban' (33%) and 'urban' areas (39%)

Figure 7. BMI classifications by parish type, Jersey, three-year averages (2017-2019)
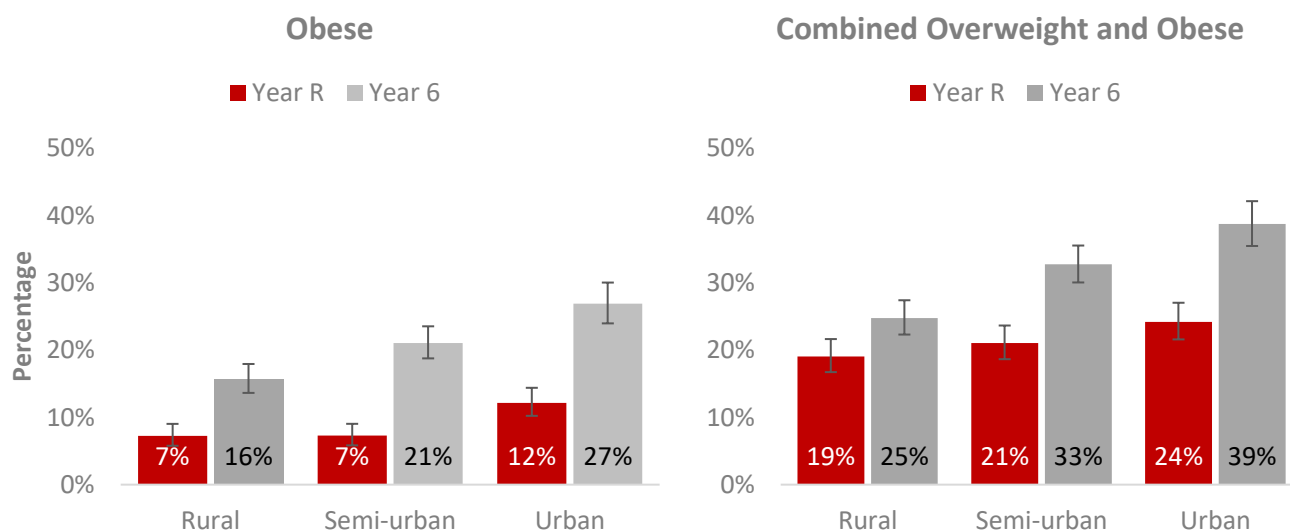
[2] The parish of residence of each child was classified into:

- *Urban* – St Helier
- *Semi-urban* – St Brelade, St Clement, St Saviour
- *Rural* – Grouville, St John, St Lawrence, St Martin, St Mary, St Ouen, St Peter, Trinity

4. By type of school attended

The school type of each child was categorised as 'fee-paying' or 'non-fee-paying'.[3]

- a marginally higher proportion of children who attended non-fee-paying schools in Year R were overweight or obese (23%), than those who attended fee-paying schools (18%) (Figure 8)

- in Year 6, a higher proportion of children who attended non-fee-paying schools were overweight or obese (35%), compared to children who attended fee-paying schools (23%) (Figure 8)
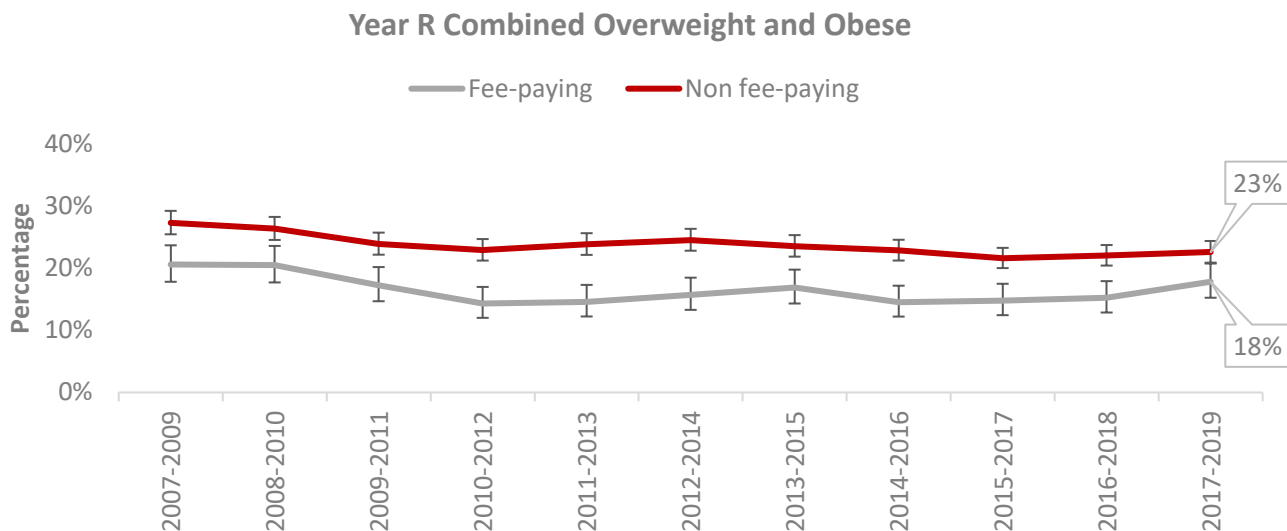
Figure 8. BMI classifications by school type, Jersey, three-year averages (2017-2019)
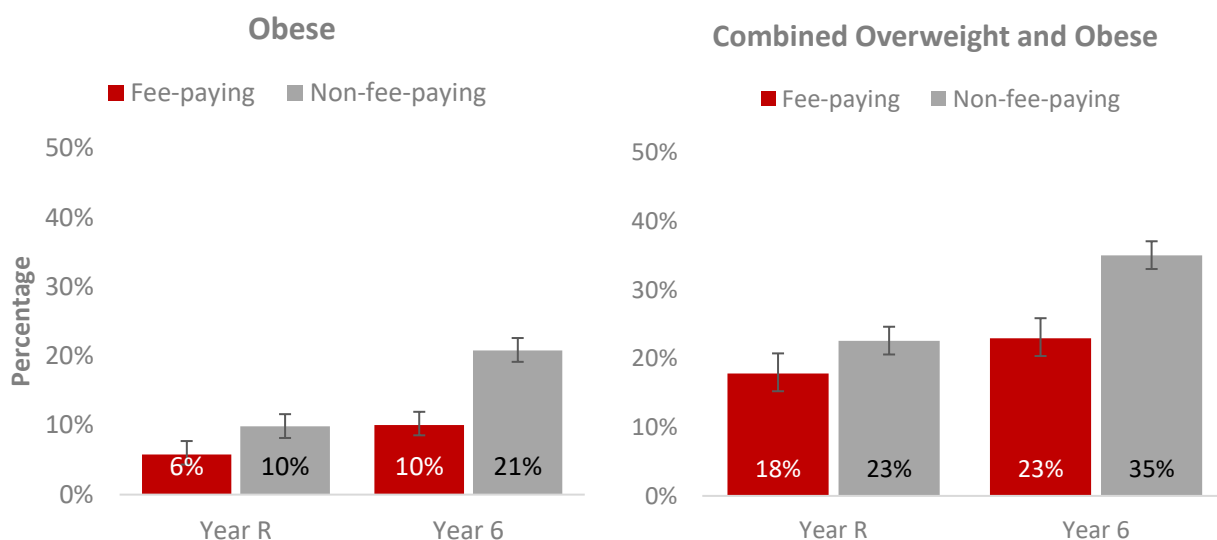
- in Year R the prevalence of overweight or obese children has remained at similar proportions in both fee-paying and non-fee-paying schools since 2009-2011 (Figure 9a)

- between 2012-2014 and 2017-2019 the gap between obesity prevalence for children attending in Year R attending non-fee-paying schools and fee-paying schools had reduced from 9% to 5%

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[3] School attended by each child were classified into: *Fee-paying* – Beaulieu, De La Salle, FCJ, Helvetia House, JCG Preparatory, St. Christophers, St. George's, St. Michael's, Victoria College Preparatory
Non-fee-paying – Bel Royal, D'Auvergne, First Tower, Grands Vaux, Grouville, Janvrin, La Moye, Les Landes, Mont Nicolle, Plat Douet, Rouge Bouillon, Samares, Springfield, St. Clement, St. John, St. Lawrence, St. Luke, St. Martin, St. Mary, St. Peter, St. Saviour, Trinity

Figure 9a. Proportion of children who were Combined Overweight and Obese, by school type, Jersey, three-year averages (2017-2019)

Year R Combined Overweight and Obese

- in Year 6 the prevalence of overweight or obese children has remained at similar proportions in both fee-paying and non-fee-paying schools since 2011-2013 (Figure 9b)
- between 2012-2014 and 2017-2019 the gap between obesity prevalence for children in Year 6 attending non-fee-paying schools and fee-paying schools increased from 9% to 12%

Figure 9b. Proportion of children who were overweight or obese, by school type, Jersey, three-year averages (2017-2019)

Year 6 Combined Overweight and Obese
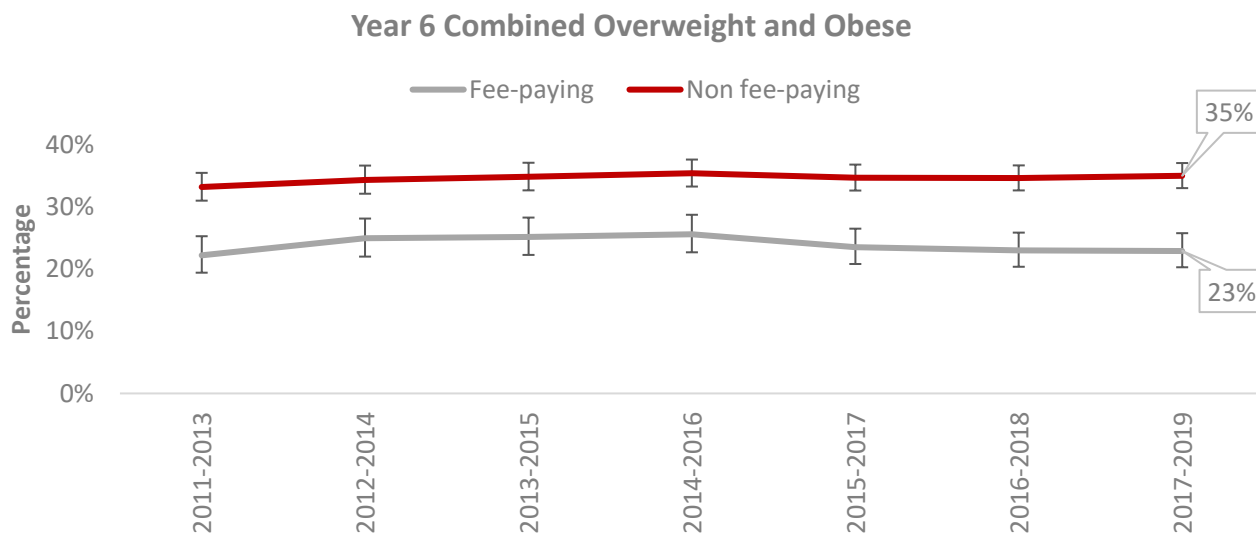
5. Group changes

Children in Year 6 in the academic year 2019/2020 were previously in Year R in 2013/2014. Table 3 compares the BMI classifications for those children measured in Year R in 2013/2014 in Jersey, with those measured in Year 6 in 2019/2020 in Jersey. Due to inward and outward migration between the two time points, not all of the same children in Year 6 will be included in the Year R data, and vice versa. The data has not been linked at individual level.

- a higher proportion of the group (33%) were overweight and obese when in Year R in 2019/2020, compared to the group when in Year R in 2013/2014 (23%)

- the prevalence of obesity (including severely obese) was higher in the Year 6 group in 2019/2020 (17%) compared to the Year R group in 2013/2014 (10%)

Table 3. BMI classifications, percentages

	2013/2014 Year R	2019/2020 Year 6
Underweight	<1	1
Healthy weight	76	66
Overweight	13	16
Obese	7	13
Severely Obese	3	4
Combined Overweight and Obese	*23*	*33*

Note: percentages rounded to the nearest integer
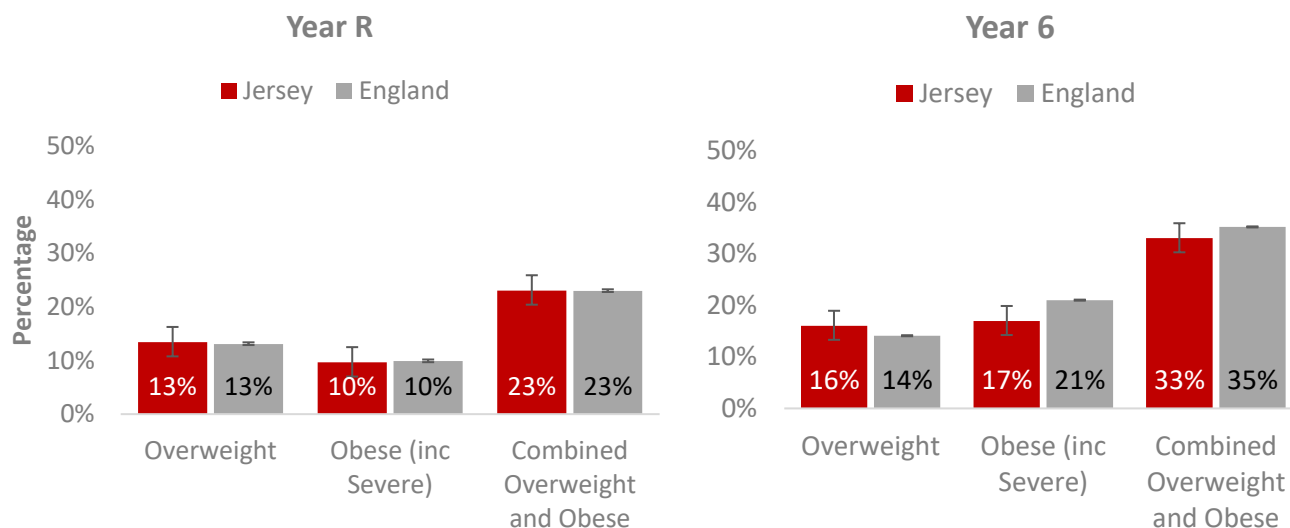
6. Comparison to England

The National Child Measurement Programme (NCMP) in England also measures the height and weight of children in Reception class (aged 4 to 5) and year 6 (aged 10 to 11), to assess overweight and obesity levels in children within primary schools.[4]

In the academic year 2019/2020:

- in Year R the proportion of overweight and obese children was similar in Jersey compared with England (23%), (Figure 10)

- in Year 6, Jersey had a similar proportion of overweight and obese children (33%) as England (35%)

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[4] National Child Measurement Programme - NHS Digital

Figure 10. Prevalence of overweight and obese, comparison Jersey to England, 2019/2020


- the prevalence of children in Jersey and England who were overweight or obese in reception has been similar since 2009/2010 (Figure 11)

Figure 11. Prevalence of Combined Overweight and Obese, Year R comparison Jersey to England, 2006-2019
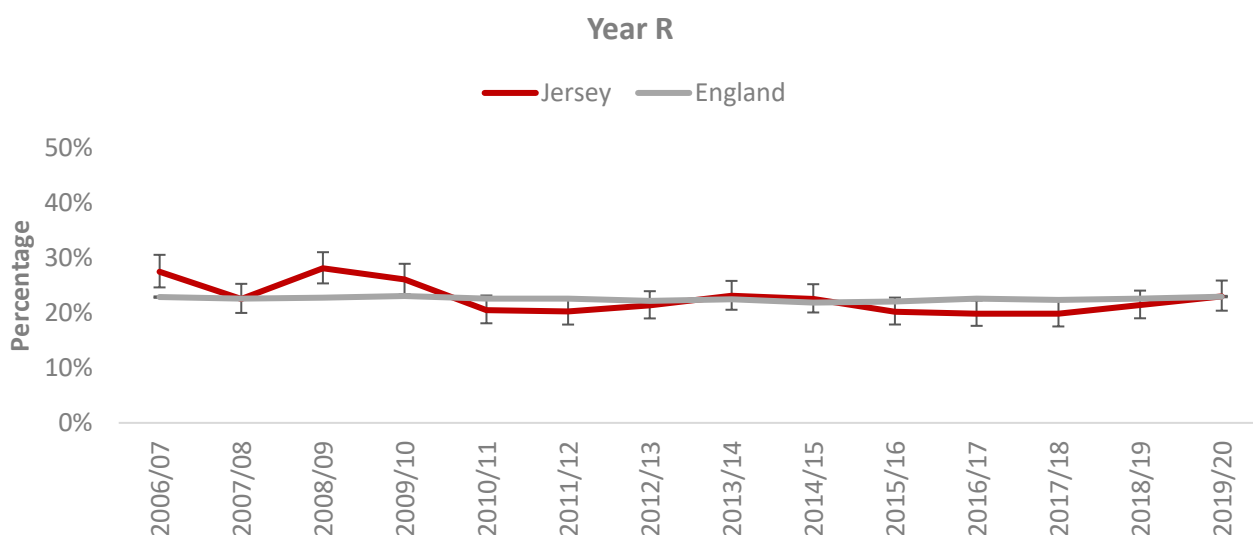
- while Jersey has on occasion been lower than England for the prevalence of children who were overweight or obese in Year 6, the proportions have remained relatively similar since 2011/12 (Figure 12)

Figure 12. Prevalence of Combined Overweight and Obese, Year 6 comparison Jersey to England, 2011-2019

Year 6
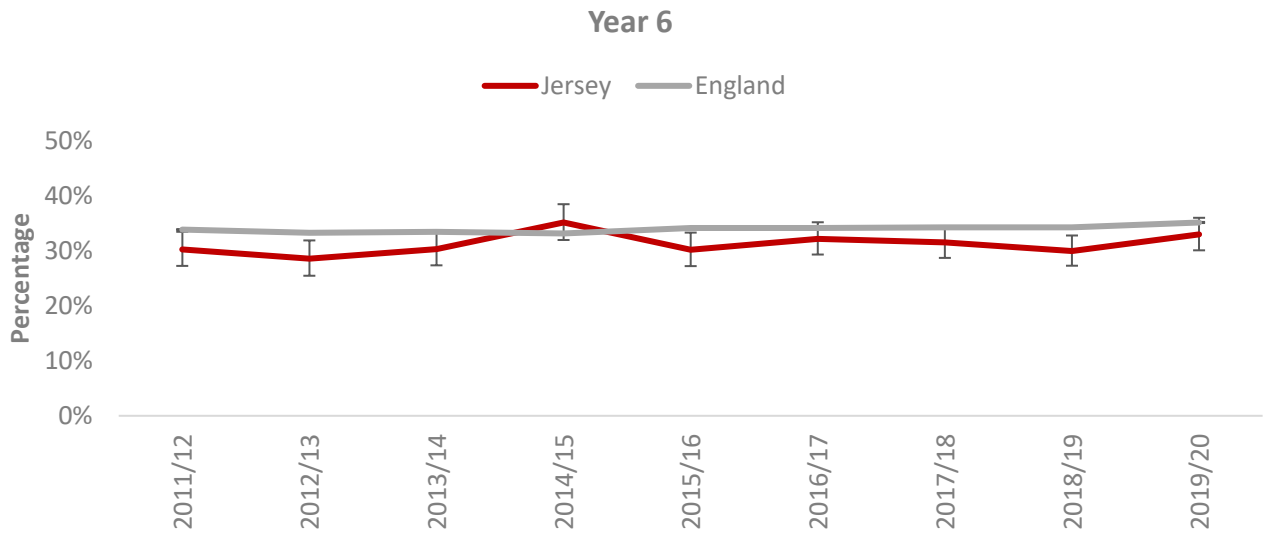
Notes

The Jersey Child Measurement Programme began in 1995, measuring the heights and weights of children attending Jersey schools in Year R. It was extended in the 2011/2012 academic year to include measuring the heights and weights of Year 6 children. Children who attend independent and special schools are excluded. The children are measured during the school year with the programme running between September and August each year to coincide with the academic year.

BMI categories

The height and weight measurements of children are used to calculate their Body Mass Index (BMI) as follows:

$$\text{BMI} = \frac{\text{weight (kg)}}{\text{height (m) } \times \text{height (m)}}$$

The BMI is then converted into a centile, which can be used to classify each child into **underweight, healthy weight, overweight, obese, or severely obese**.

This calculation uses age and sex as well as height and weight to consider different growth patterns in boys and girls at different ages. A child's BMI centile is a measure of how far a child's BMI is above or below the average BMI value for their age and sex in a reference population. The JCMP 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).

The **epidemiological** classification system uses the British 1990 growth reference (UK90)[5] to determine weight status according to a child's age and sex and is used for this report for summaries of whole cohort and population groups.

The **epidemiological** definition is as follows:

- BMI centile <=2: Underweight
- BMI centile >2 and <85: Healthy weight
- BMI centile >=85 and <95: Overweight
- BMI centile >=95: Obese
- BMI centile >=99.6 Severely obese. Note: "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"

Figure 13. Centile boundaries for each weight category – epidemiological
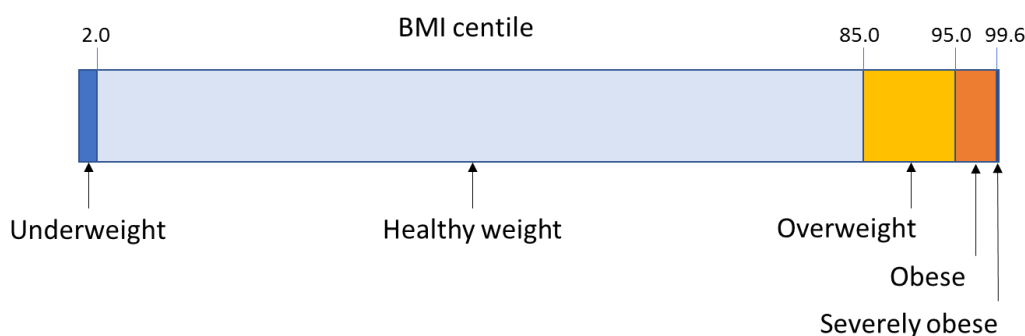
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Participation

Participation in the JCMP is not compulsory and each year a small number of parents chose for their children not to take part on behalf of their children.

Potential bias due to non-participation was investigated for the English National Child Measurement Programme by NHS Digital, who found that obesity prevalence was underestimated by around 1 percentage point. This bias was found to decrease as the participation rate increased.[6] Any potential effect from non-response bias in the JCMP is anticipated to be of a similar magnitude given the high participation rates observed.

Impact of COVID-19 on National Child Measurement Programme (NCMP)

In March 2020, schools in England were closed to the majority of children in response to the COVID-19 pandemic. With schools closed and school nursing teams being deployed to support the pandemic response, NCMP measurements could not take place.[7] Results letters for parents and proactive follow-up of children who had already been measured and identified as being outside the healthy weight range were also recommended to be deprioritised.

NHS Digital were no longer expecting data to be uploaded to the NCMP IT system at that time. However, the system remained open as usual should local authorities and associated provider trusts have the resources to continue submitting data which had already been collected. Where possible local authorities were asked to finalise their data submissions to NHS Digital by Wednesday 5th August 2020.

Statistical weighting was applied to all the data collected (to retain the most measurements) to produce a dataset representative of the population measured by NCMP in England in previous years. Estimates of body mass index (BMI) classification rates, e.g. the proportion who are obese, are broadly comparable to previous years.

Only a small number of local authority data tables were produced for 2019/2020, therefore, comparison between most local authorities with Jersey is not possible.

Confidence intervals, significance, and disclosure control

Confidence intervals are quoted in the publication and included in the tables to indicate this variation.

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". When a comparison does not show a statistically significant difference, this will be described using terms such as "similar to" or "the same as".

In the statistical publication text and Excel tables, percentages are rounded. Differences are calculated from the rounded figures in the excel tables and then shown in the text.

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[6] For a participation rate of 80 per cent in 2006/7, it was estimated that the obesity prevalence was underestimated by 1.3 percentage points (pp); and for a participation rate of 88 per cent in 2007/08, the underestimate of obesity prevalence reduced to 0.8 pp

[7] National Child Measurement Programme, England 2019/20 School Year - NHS Digital

Ethnicity

Ethnicity is not used as a variable of analysis in this report, as the ethnicity data held is not of suitable quality. The lack of standardised, self-identified race and ethnicity is a critical limitation of the available data.

Data Validation

The accuracy and reliability of the dataset underpinning the analyses in the report is ensured by a validation procedure.

Submitted records are checked to ensure that all mandatory data items have been provided and data validation rules have been met:

- duplicates are rejected; duplicates are defined as records with the same reference and/or first name, surname, sex and Date of birth
- valid date of birth ranges are set each year as part of collection year set up, these ranges ensure that only children aged 4, 5, 10 or 11 years of age can be included in the JCMP
- records with missing data items are rejected
- invalid data items (e.g. children's height and weight measured at separate times) are rejected
- unexpected data items (e.g. "extreme" heights) generate warning flags that require FNHC confirmation
- measurements should not be rounded to the nearest whole or half kilogram or whole or half a centimetre; the proportion of records where the recorded height is exactly a centimetre or half a centimetre should not exceed 20%

Contact details - Please forward any comments or feedback to the Public Health Intelligence Team: healthintelligence@gov.je