
Subject: Jersey Child Measurement Programme 2021/2022
Date of report: 22 September 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 adulthood¹. 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 2021/2022 academic year and compares them to historical trends and to England².

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 Jersey Child Measurement Programme (JCMP). The total number of children measured in 2021/2022 was 1,961 (96% of all eligible children). The proportion of children measured was similar to that measured in the 2020/2021 programme (96%). The report contains analyses of Body Mass Index (BMI) classification rates by age, sex as well as geographic analyses.

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'. 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 proportions of Jersey's population that are of healthy weight or 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'.

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

² Data presented in this report for England 2021/2022 is provisional and based on an extract taken on 23 May 2022

Summary

- in Year R, the prevalence of obesity was statistically similar in 2021/2022 (12%) to the previous year (14% in 2020/2021); in Year 6, obesity prevalence was marginally lower in 2021/2022 (19%) than the previous year (25% in 2020/2021)
- one in four children in Year R (25%) was overweight or obese, whilst three in ten children in Year 6 (31%) was overweight or obese
- the proportion of Year R children classified as overweight or obese increased between 2018-2020 and 2019-2021, having remained at around 20% over the previous 20 years, based on the 3-year rolling average
- the prevalence of children classified as overweight or obese in Year 6 (around 33%) has remained statistically 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 similar for females and males
- children living in rural areas in Year 6 were less likely to be overweight or obese than those living in urban areas
- over a three-year-period, a higher proportion of children who attended non-fee-paying schools in Year R were overweight or obese (28% of children), as those who attended fee-paying schools (21%); a higher proportion of children who attended non-fee-paying schools in Year 6 were obese (38%) compared to those attending fee-paying schools (23%)
- the proportion of children in Year R categorised as overweight and obese was similar in Jersey (25%) as in England (23%); the proportion of children in Year 6 categorised as overweight and obese was lower in Jersey (31%) than that in England (38%)

1. By age and sex

In the 2021/2022 academic year:

- around three in four (74%) of Year R children had height and weight measurements that classified them as having a healthy weight, a marginally higher proportion than children in Year 6 where 68% were a healthy weight
- obesity prevalence in Year R (12%) was lower compared to that in Year 6 (19%), (see Table 1 and Figure 1)
- in Year 6, obesity prevalence decreased from 25% in 2020/2021 to 19% in 2021/2022
- one in four Year R children (25%) were overweight or obese, compared to three in ten children in Year 6 (31%) (see Table 1 and Figure 2)

Table 1. BMI classifications, percentages, Jersey, 2021/2022

	Year R	Year 6
Underweight	<1	1
Healthy weight	74	68
Overweight	14	12
Obese	8	14
Severely Obese	4	5
Combined Obese & Overweight	25	31

Note: percentages rounded to the nearest integer

Figure 1. BMI categories by year group, Jersey, 2021/2022

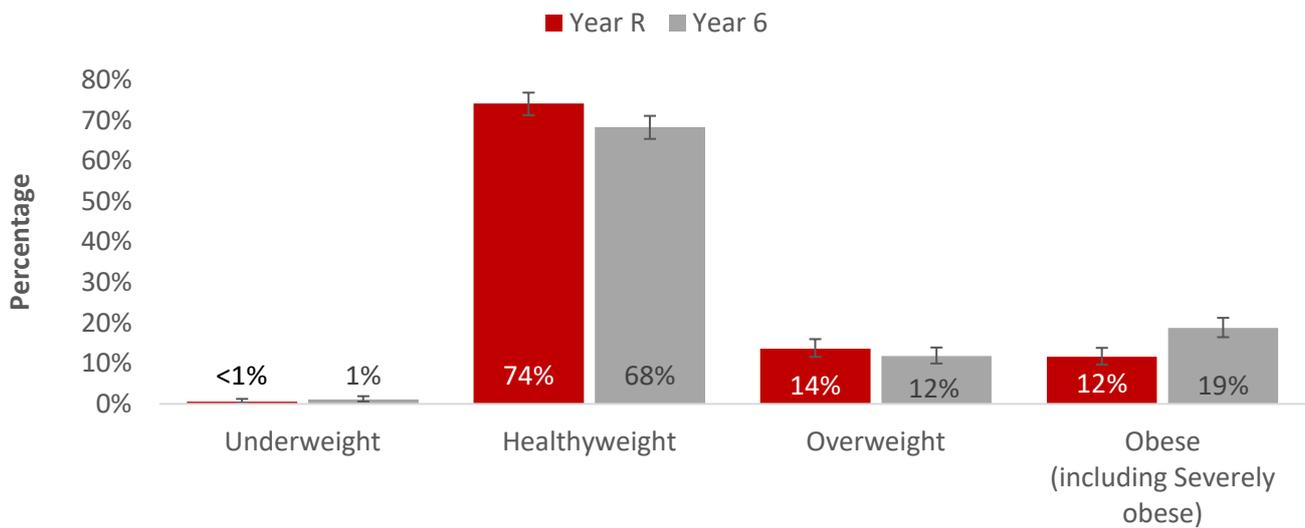
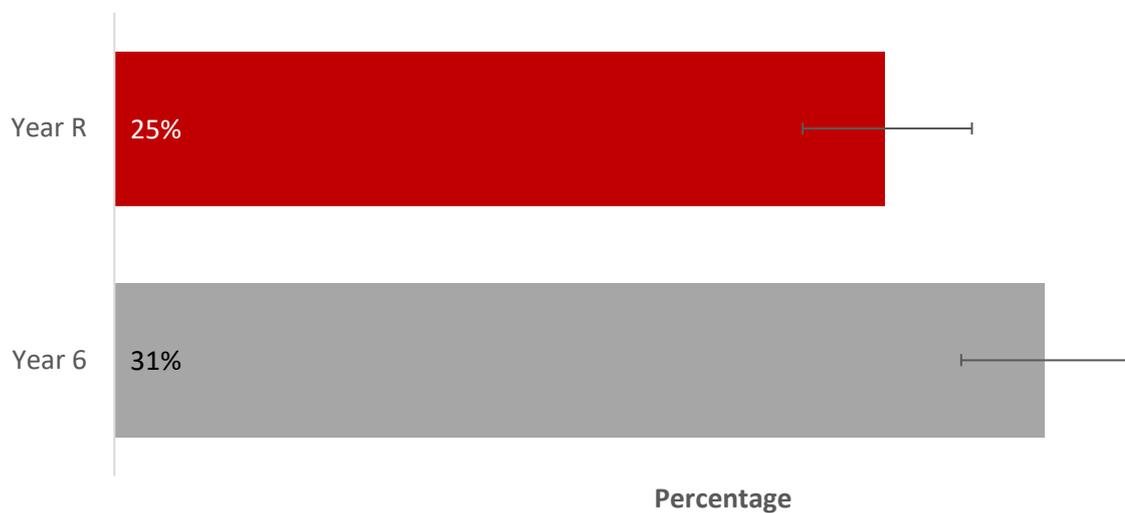


Figure 2. Prevalence of combined overweight and obesity by year group, Jersey, 2021/2022



- in Year R, 73% of boys were healthy weight, a similar proportion when compared to girls (75%); in Year 6, a similar proportion of boys (66%) were healthy weight compared to 70% of girls
- in both Year R and Year 6, the proportions of females categorised as overweight or obese were similar to males, (see Table 2)

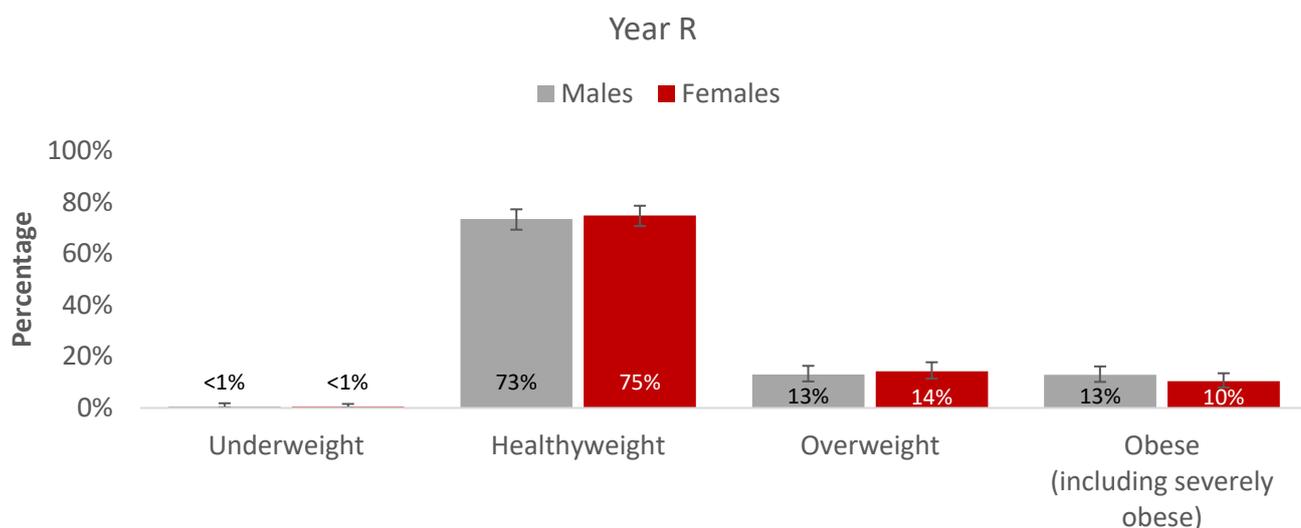
Table 2. BMI classifications by sex, percentages, Jersey, 2021/2022

	Year R		Year 6	
	Males	Females	Males	Females
Underweight	<1	<1	<1	1
Healthy weight	73	75	66	70
Overweight	13	14	12	12
Obese	8	8	14	13
Severely Obese	5	2	6	3
Combined Obese & Overweight	26	25	33	28

Note: percentages rounded to the nearest integer

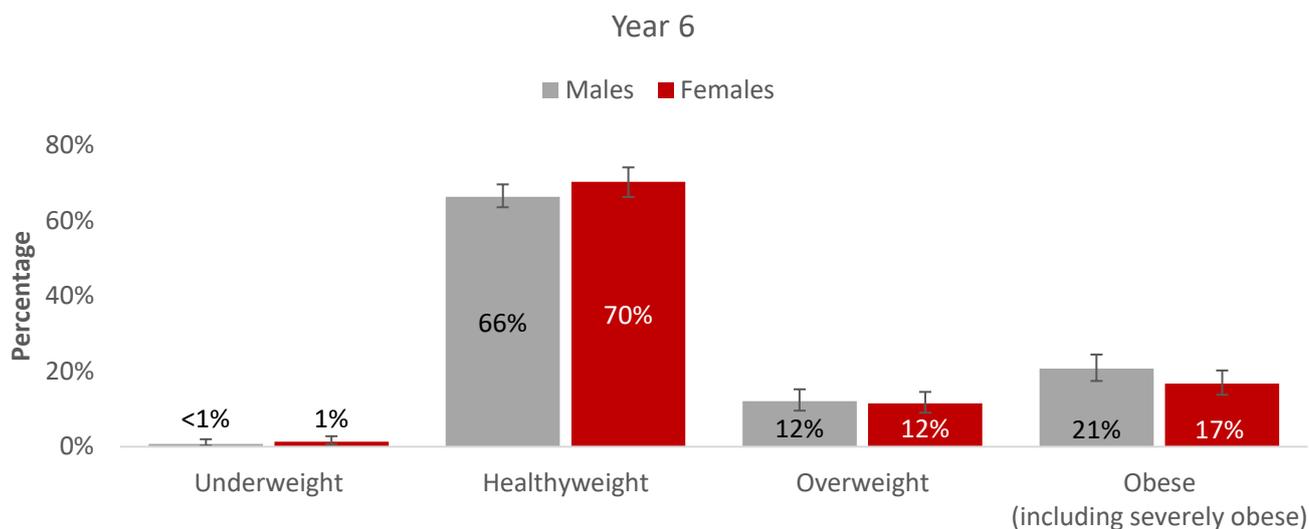
- in Year R, the proportion of females categorised as overweight or obese (25%) was similar to males (26%), (see table 2 and Figure 3)

Figure 3. Proportion of Year R children classified as underweight, overweight, and obese by sex, Jersey, 2021/2022



- in Year 6, the proportion of females categorised as overweight or obese (28%) was similar to males (33%), (see table 2 and Figure 4)

Figure 4. Proportion of Year 6 children classified as underweight, overweight, and obese by sex, Jersey, 2021/2022



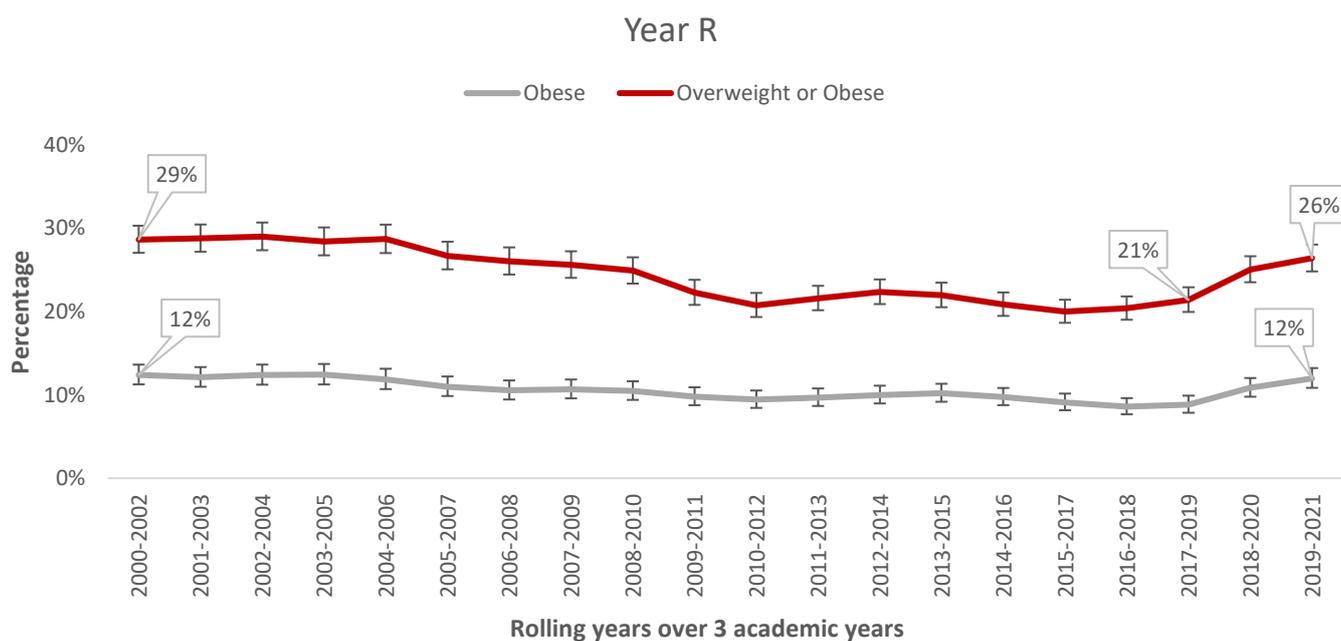
Note: In sections 2 to 4, data is considered as a rolling average over a period of three academic years, with the most recent three-year period shown being 2019-2021. The three-year combined data is more robust than a single year, and better for overall trend analysis.

2. Trends over time

Year R

- the proportion of Year R children classified as overweight or obese had been relatively stable, before a rise of 5 percentage points between 2017-2019 and 2019-2021 (from 21% to 26%)
- the proportion of children classified as obese in 2019-2021 (12%) is similar to that in 2000-2002 (12%)

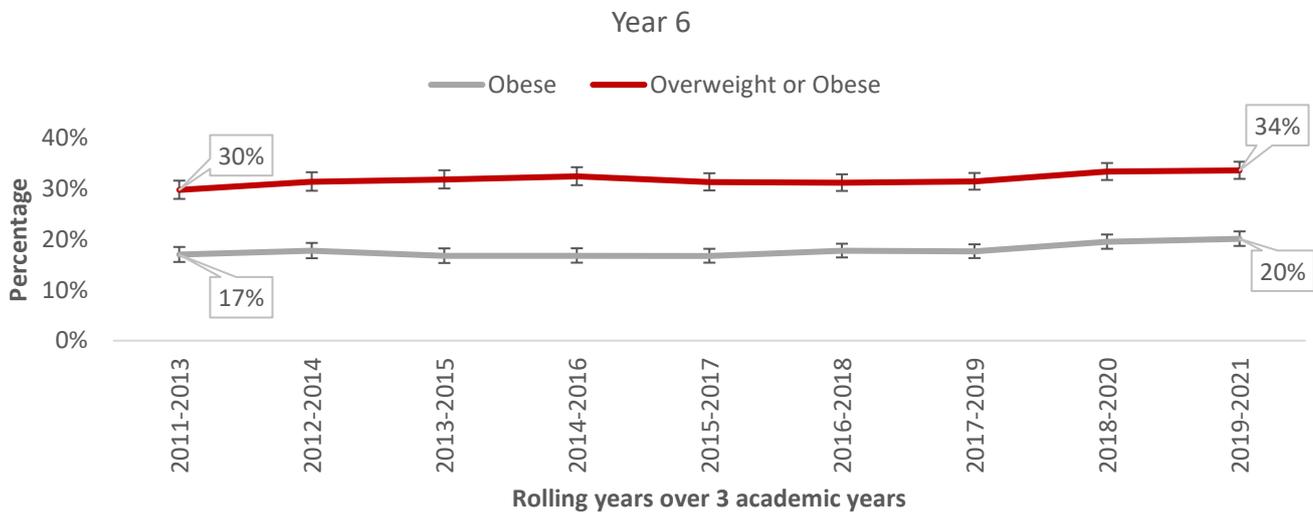
Figure 5. BMI classifications for Year R, rolling three-year averages, Jersey, 2000-2021



Year 6

- the proportion of overweight or obese children in Year 6 has increased steadily from 2011-2013 (30%) until 2019-2021 (34%)
- a higher proportion of children are obese in 2019-2021 (20%) than in 2011-2013 (17%)

Figure 6. BMI classifications for Year 6, three-year averages, Jersey, 2011-2021



3. By parish of residence

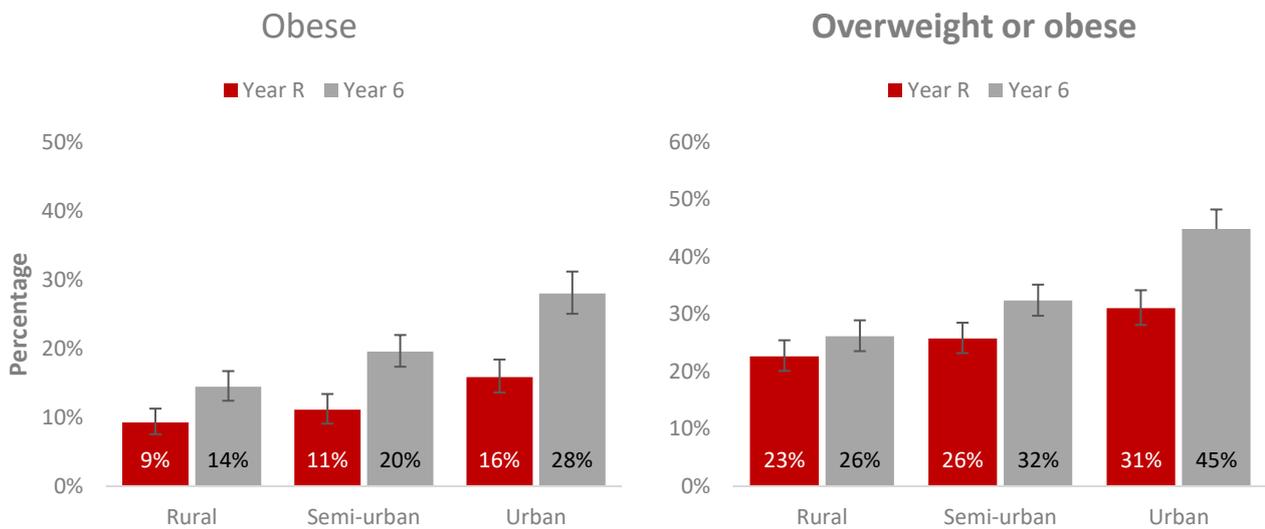
The parish of residence of each child was categorised as 'urban', 'semi-urban' or 'rural'³

- the proportion of children classified as overweight or obese in 'urban' parishes in Year R (31%) was higher than the proportion in 'rural' areas (23%)
- in 'urban' parishes in Year 6 (45%) the prevalence of children classified as overweight or obese was higher than the proportion in 'rural' (26%) and 'semi-urban' (32%) areas
- a higher proportion of children living in 'urban' parishes in Year R were obese (16%) compared to those living in 'rural' and 'semi-urban' areas (9% and 11% respectively)
- for year 6 children living in 'urban' parishes a higher proportion were obese (28%) compared to those living in 'rural' and 'semi-urban' areas (14% and 20% respectively)

³ 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

Figure 7. BMI classifications by parish type, Jersey, 2019-2021 (three-year average), based on postcode of child



4. By type of school attended

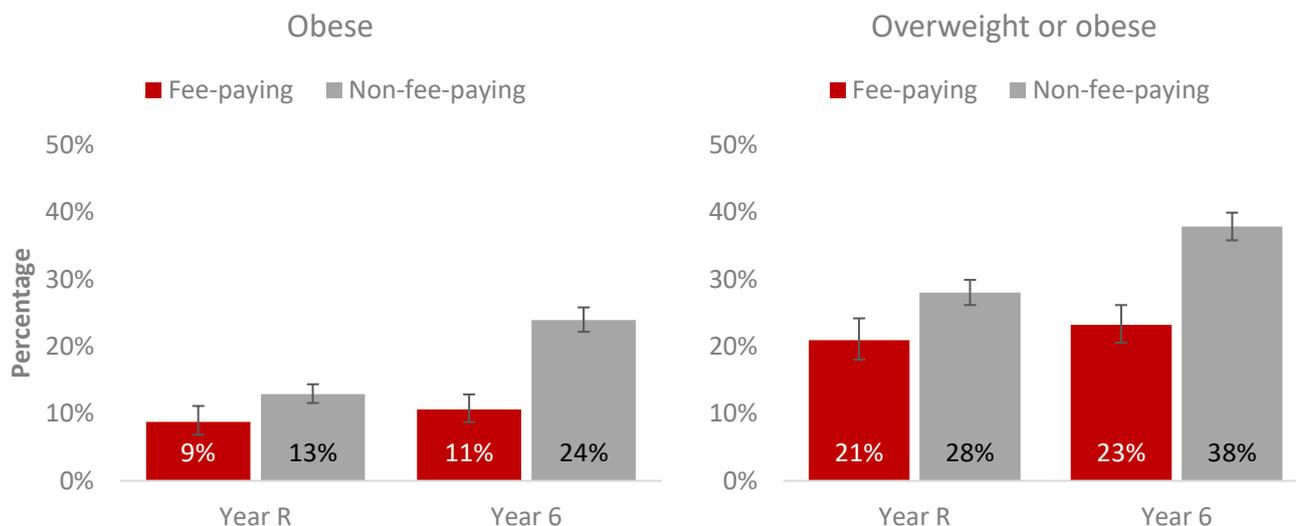
The school type of each child was categorised as 'fee-paying' or 'non-fee-paying'⁴

- in both Year R and Year 6, a higher proportion of children who attended non-fee-paying schools were overweight or obese (28% in Year R and 38% in Year 6), compared to children who attended fee-paying schools (21% and 23%, respectively) (Figure 8)
- the gap between obesity prevalence of children in Year R in fee-paying and non-fee-paying schools has not been widening over the last ten years
- the gap between obesity prevalence of children in Year 6 in fee-paying and non-fee-paying schools has decreased from 2018-2020

⁴ School attended by each child were classified into: *Fee-paying* – Beaulieu, De La Salle, FCJ, Helvetia House, JCG Preparatory, St. George's, St. Michael's, Victoria College Preparatory

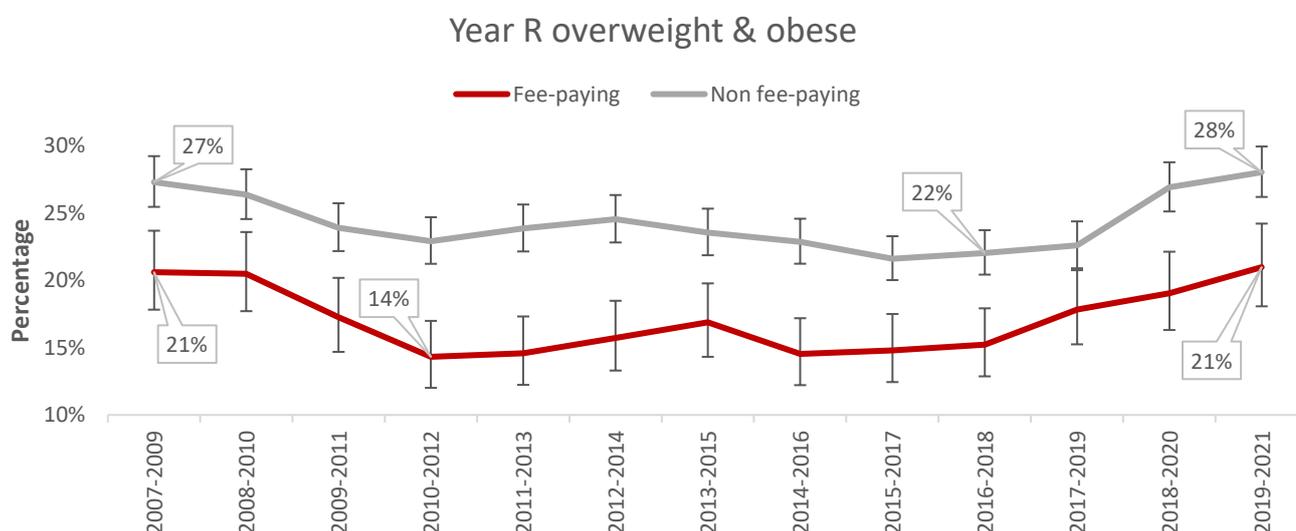
Non-fee-paying – Bel Royal, D'Auvergne, First Tower, Grands Vaux, Grouville, Janvrin, La Moye, Les Landes, Mont Nicolle, Plat Douet, Rouge Bouillon, Samares, Springfield, St. Clement, St. John, St. Lawrence, St. Luke, St. Martin, St. Mary, St. Peter, St. Saviour, Trinity

Figure 8. BMI classifications by school type, percentage, Jersey, 2019-2021 (three-year average)



- in Year R the prevalence of overweight or obese children in non-fee-paying schools had fallen from 27% in 2007-2009 to 22% in 2016-2018; there was a 6 percentage points increase in the prevalence of overweight or obese children between 2016-2018 and 2019-2021 to 28%
- over the period 2007-2019, the prevalence of children in Year R classified as overweight or obese and attending fee-paying schools fell from 21% in 2007-2009 to 14% in 2010-2012; the prevalence gradually increased to 21% in 2019-2021.

Figure 9a. Proportion of children who were overweight or obese, by school type, Jersey, 2007-2021 (three-year averages)



- in Year 6 there has been a small but statistically significant rise in the prevalence of children classified as overweight or obese in non-fee-paying schools between 2011-2013 (33%) to 2019-2021 (38%)
- the prevalence of children in Year 6 who are overweight or obese and attend fee-paying schools in Year 6 has not changed significantly between 2011-2013 and 2019-2021

Figure 9b. Proportion of children who were overweight or obese, by school type, Jersey, 20m,07-2021 (three-year averages)



5. Group changes

Children in Year 6 in the academic year 2021/2022 were previously in Year R in 2015/2016. Table 3 compares the BMI classifications for those children measured in Year R in 2015/2016 in Jersey, with those measured in Year 6 in 2021/2022 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.

- a lower proportion of the group (23%) were overweight and obese when in Year R in 2015/2016 compared to the group when in Year 6 in 2021/2022 (31%)
- the prevalence of obesity (including severely obese) was lower in the Year 6 group in 2015/2016 (11%) compared to the Year 6 group in 2021/2022 (19%)

Table 3. BMI classifications, percentages, Jersey

	2015/2016 Year R	2021/2022 Year 6
Underweight	<1	1
Healthy weight	77	68
Overweight	12	12
Obese	7	14
Severely Obese	4	5
Combined Overweight & Obese	23	31

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 (Year R, aged 4 to 5) and Year 6 (aged 10 to 11), to assess overweight and obesity levels in children within primary schools⁵.

In 2021/2022:

- findings from the provisional 2021/2022 NCMP data⁶ for England show decreases in the proportions of children who are overweight and obese compared to 2020/2021; decreases in the proportion of overweight and obese children are seen in both Year R and Year 6
- in Year R the proportion of overweight and obese children was similar in Jersey (25%) compared with England (23%), (see Figure 10)
- in Year 6 the proportion of overweight and obese children was lower in Jersey (31%) compared with England (38%), (Figure 10)

Figure 10. Prevalence of overweight and obesity, comparison Jersey to England, 2021/2022

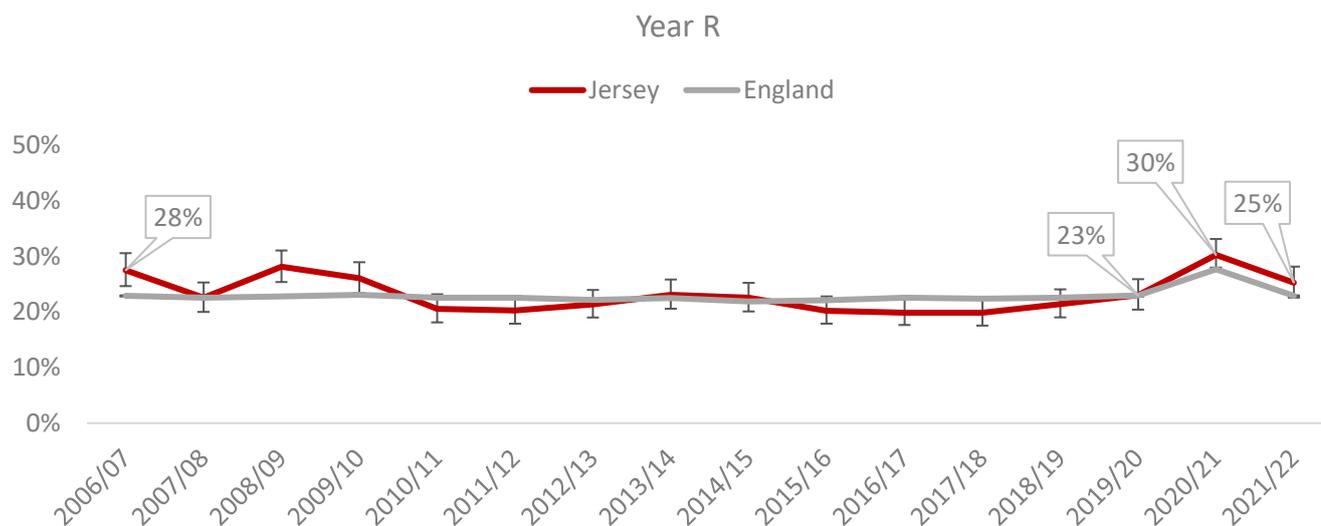


- the prevalence of overweight and obesity in Jersey for Year R children had been relatively stable since 2009/2010; there was a 7-percentage point increase from 23% in 2019/2020 to 30% in 2020/2021, the data shows this has decreased in 2021/2022, and returned to 25%; England followed a very similar trend during the period 2019/2020 to 2021-2022 (Figure 11)

⁵ [National Child Measurement Programme - NHS Digital](#)

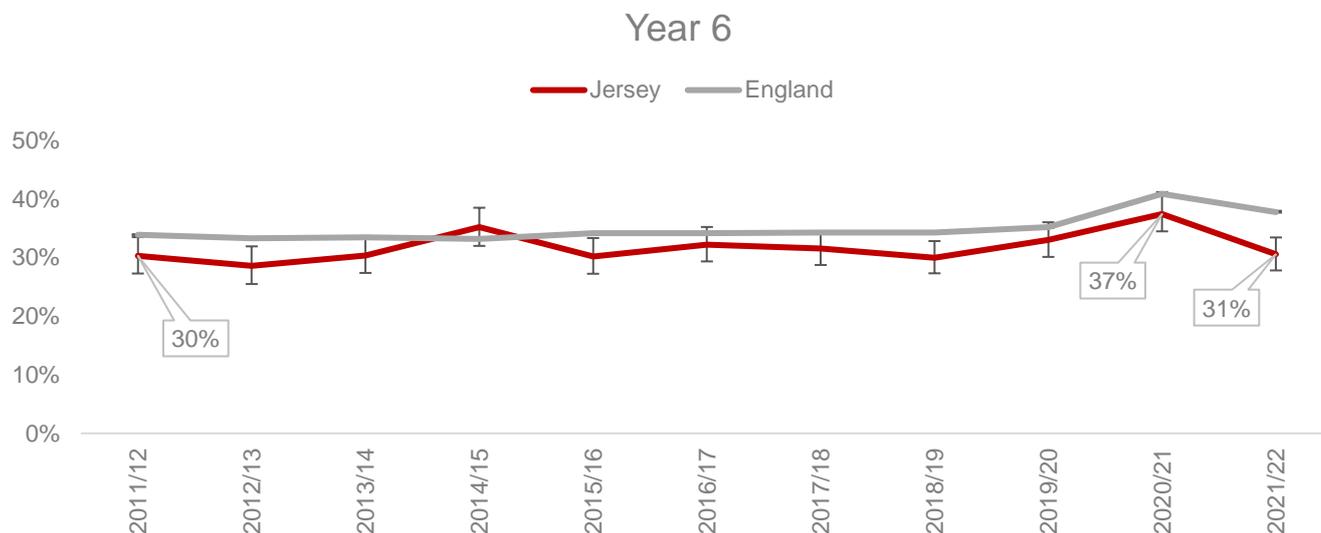
⁶ [Summary of Key Findings.pdf](#)

Figure 11. Prevalence of overweight and obesity, Year R comparison Jersey to England, 2006-2021



- for Year 6 in England, the prevalence of obesity increased slowly from 2010/2011 to 2019/2020 and then increased by 5 percentage points in 2020/2021; provisional data shows this has decreased for children in Year 6 in 2021/22
- for Year 6 in Jersey, the prevalence of obesity also remained relatively similar from 2011/2012; the prevalence of obesity reached 37% in 2020/2021, and decreased in 2021/2022 to 31%
- Jersey has been lower or similar than England for the prevalence of children who were overweight or obese in Year 6; the proportions were lower in Jersey than England in 2021/2022 (Figure 12)

Figure 12. Prevalence of overweight and obesity, Year 6 comparison Jersey to England, 2011-2021



Individuals' changes

The change in weight status for specific individuals from Year R in 2015/16 to Year 6 in 2021/22 can also be analysed. **For this individual level analysis, BMI categories were defined using clinical rather than epidemiological boundaries** (see Annex), as the clinical boundaries are child-orientated and considered more appropriate when exploring individual movements.

The measurements from children in the following cohorts were included (those in Year R in 2015/16), with their corresponding measurements from Year 6 (in 2021/22).

Table 4 gives the proportion of children in each category for Year R and Year 6:

- three fifths (57%) of children were healthy or underweight in Year 6 *and* six years previously in Year R
- 4% of children were obese both when they were in Year R and Year 6

Table 4: BMI classifications, for a cohort of children over time (both sexes), percentages

		Year R in 2015/16			All weight categories
		Healthy weight & underweight	Overweight	Obese	
Year 6 in 2021/22	Healthy weight & underweight	57	10	9	76
	Overweight	8	2	3	13
	Obese	5	2	4	12
	All weight categories	70	14	16	100

Individuals' changes by Year R grouping

Looking at each group according to their weight status in Year R (see Table 5):

- most children who were healthy weight in Year R remained a healthy weight six years later in Year 6 (82%); 11% of this group became overweight, and an additional 7% became obese or severely obese
- for children who were overweight in Year R six years previously, 15% remained overweight by Year 6, 16% of this group had become obese or severely obese, and seven in ten (69%) had become a healthy weight
- three in ten (28%) of children who were obese or severely obese six years previously in Year R remained obese or severely obese by Year 6; 18% of these children became overweight and over half (54%) had moved to a healthy weight by Year 6

Table 5: BMI classifications, for three-year cohort of children over time (both sexes), percentages

		<i>Year R in 2015/16</i>		
		Healthy weight & Underweight	Overweight	Obese
<i>Year 6 in 2021/22</i>	Healthy weight & Underweight	82	69	54
	Overweight	11	15	18
	Obese	7	16	28
	Total	100	100	100

See Tables 6 and 7 for further detail by sex. A higher proportion of females than males in Year R remained Healthy weight by Year 6 (87% and 77% respectively); 19% of overweight females in Year R, and 11% of males remained overweight in Year 6; a similar proportion of females (27%) and males (30%) remained obese between 2015/16 and 2021/22.

Table 6: BMI classifications, for a three-year cohort of children over time (females only), percentages

		<i>Year R in 2015/16</i>		
FEMALES		Healthy weight & underweight	Overweight	Obese
<i>Year 6 in 2021/22</i>	Healthy weight & underweight	87	73	52
	Overweight	8	19	21
	Obese	5	8	27
	Total	100	100	100

Table 7: BMI classifications, for a three-year cohort of children over time (males only), percentages

		<i>Year R in 2015/16</i>		
MALES		Healthy weight & underweight	Overweight	Obese
<i>Year 6 in 2021/22</i>	Healthy weight & underweight	77	66	55
	Overweight	14	11	14
	Obese	10	23	30
	Total	100	100	100

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)

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

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 take into account 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** definition is used for the majority of this report for summaries of whole cohort and population groups.

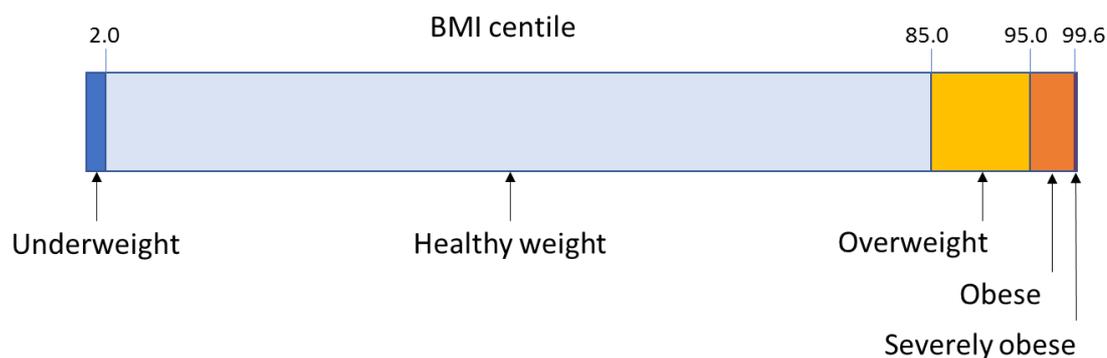
The **epidemiological** classification system uses the British 1990 growth reference (UK90)⁷ to determine weight status according to a child's age and sex and is used for this report for summaries of whole cohort and population groups.

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"

⁷ 'Growth monitoring with the British 1990 growth reference'. Cole *Arch Dis Child*.1997; 76: 47-49 as used by ONS in the National Child Measurement Programme.

Figure 13: Centile boundaries for each weight category – epidemiological

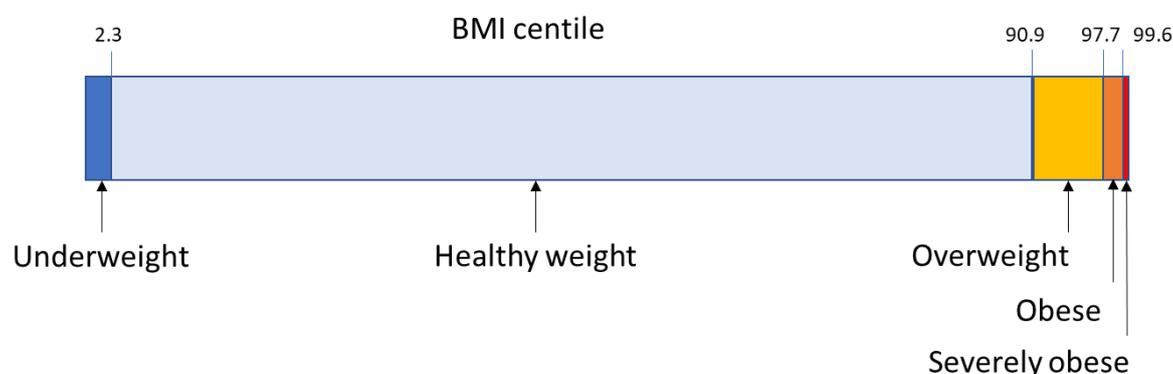


The section of the report which focuses on individual movements of children in terms of their BMI category from Year R to Year 6 uses the clinical boundaries for classification. The clinical boundaries are child-orientated and more appropriate when exploring individual movements.

The **clinical** definition is as follows:

- BMI centile ≤ 2.3 : Underweight
- BMI centile > 2.3 and < 91 : Healthy weight
- BMI centile ≥ 91 and < 98 : Overweight
- BMI centile ≥ 98 : Obese
- BMI centile ≥ 99.6 Severely obese. Note: "Severely obese" is a subset of "Obese". Children with a BMI centile of between 998 and 100 are classified as "Obese" and those with a BMI centile of between 99.6 and 100 are classified as "Severely obese"

Figure 10: Centile boundaries for each weight category – clinical



Participation

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

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 increased⁸. Any potential effect from non-response bias in the JCMP is anticipated to be of a similar magnitude given the high participation rates observed.

⁸ For a participation rate of 80 per cent in 2006/2007, 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 2007/2008, the underestimate of obesity prevalence reduced to 0.8 pp

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.

Ethnicity

Ethnicity is not used as a variable of analysis in this report, as the ethnicity data held is not currently of suitable quality. The lack of standardized, 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 that all mandatory data items have been provided and data validation rules have been met.

- Records with missing data items are rejected.
- Invalid data items (e.g., children’s height and weight measured at different times) are rejected.
- Unexpected data items (e.g., “extreme” heights) generate warning flags that require FNHC confirmation.

Measuring data quality can help the JCMP identify potential data errors that need to be resolved in future. By chance 10% of height and weight measurements would be expected to be whole numbers. The height should be recorded in centimetres to the first decimal place, that is the nearest 0.1cm (for example 120.4cm). There is some evidence of the rounding of heights to whole numbers, as in Jersey 18% of heights were whole numbers in 2021/2022.