

# Jersey Child Measurement Programme 2017/2018

## Introduction

This report presents information on the levels of obesity in children in Jersey in academic year 2017/18.

The heights and weights of children in Reception (Year R: 4 – 5 year olds) and Year 6 (10 - 11 year olds) are measured annually through the Jersey Child Measurement Programme (JCMP). A total of 2,034 children were measured in 2017/18 (94% of all eligible children).

Body Mass Index (BMI) can be calculated for each pupil from their height and weight measurements, and individuals are categorised into 'underweight', 'healthy weight', 'overweight' and 'obese' categories – see Notes for further information.

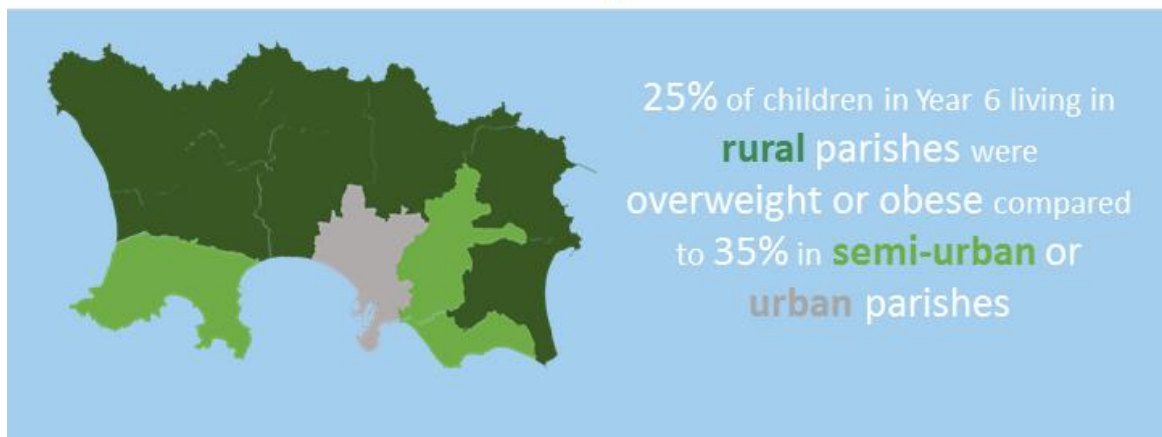
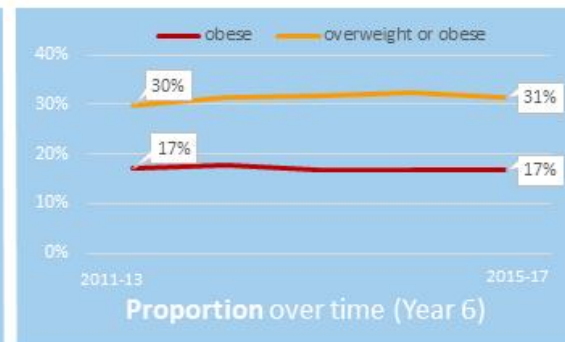
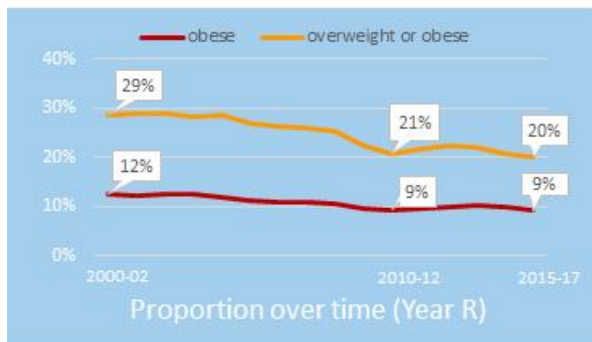
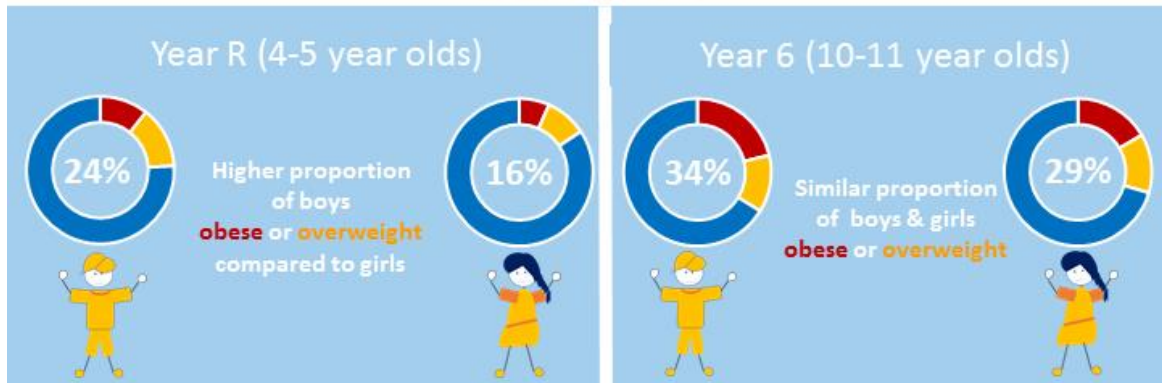
In this report, the phrase 'prevalence of obesity' is equivalent to the proportion of children classified as 'obese'.

## Summary

In academic year 2017/2018:

- one in five Year R children (20%), and around one in three children in Year 6 (32%) were overweight or obese
- a higher proportion of boys (24%) than girls (16%) were categorised as overweight or obese in Year R; the proportion of boys who were overweight or obese in Year 6 was similar to that for girls
- the proportion of Year R children classified as overweight or obese has remained at around 20% since 2010-2012, and has continued to be lower than the 29% seen in 2000-2002
- the prevalence of obesity in Year 6 has remained unchanged since 2011-2012
- most children who were a healthy weight six years previously remained a healthy weight at Year 6 (84%); one in ten (11%) of this healthy weight group had become overweight, and one in twenty (5%) had become obese
- three in ten (30%) children who were overweight six years previously were measured as still overweight; a similar proportion (32%) of this group had become obese or severely obese over the previous six years, and around four in ten (38%) had returned to a healthy weight
- over three in four children (77%) who were obese or severely obese six years previously remained obese or severely obese in Year 6
- children in Year 6 living in rural areas were less likely to be obese than those living in suburban or urban areas
- 35% of children who attended non-fee paying schools in Year 6 were overweight or obese compared to 24% of those who attended fee-paying schools
- the proportion of children in Year R categorised as obese was similar in Jersey (9%) compared to England (10%)

# Jersey Child Measurement Programme 2017/2018



## By age

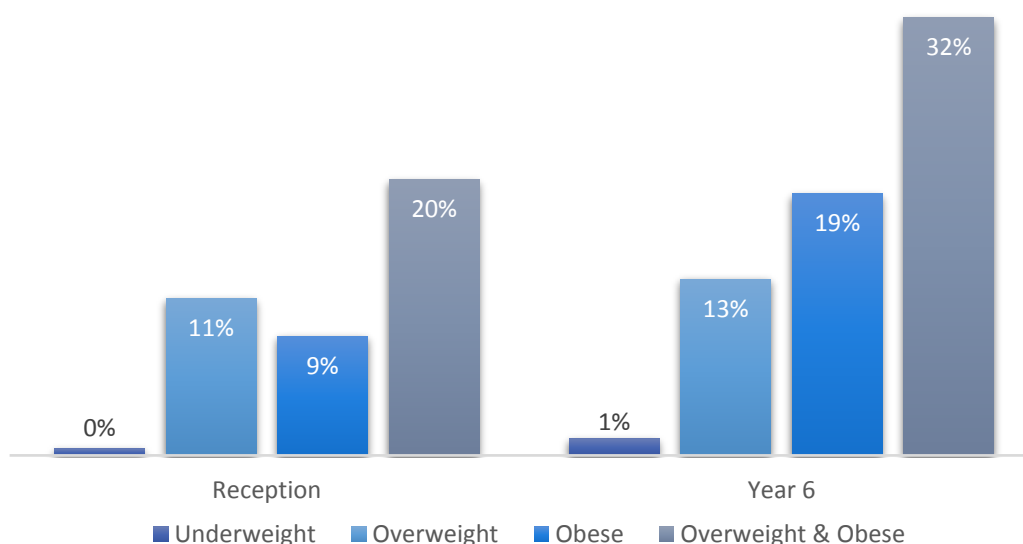
- obesity prevalence (including severe obesity) was 19% in Year 6, double that of Year R (9%), see Table 1 and Figure 1
- one in five Year R children (20%) were overweight or obese, compared to around one in three children in Year 6 (32%)
- four in five (80%) Year R children had height and weight measurements that classified them as having a healthy BMI, whilst in Year 6, two in three (67%) were of 'healthy weight'

**Table 1: BMI classifications, percentages, 2017/18**

	Year R	Year 6
<i>Underweight</i>	<1	1
<i>Healthy weight</i>	80	67
<i>Overweight</i>	11	13
<i>Obese</i>	7	15
<i>Severely Obese</i>	2	4
<b><i>Combined Obese &amp; Overweight</i></b>	<b>20</b>	<b>32</b>

*Note: percentages rounded to the nearest integer*

**Figure 1: Prevalence of underweight, overweight and obesity by age group, 2017/18**



## By age and sex

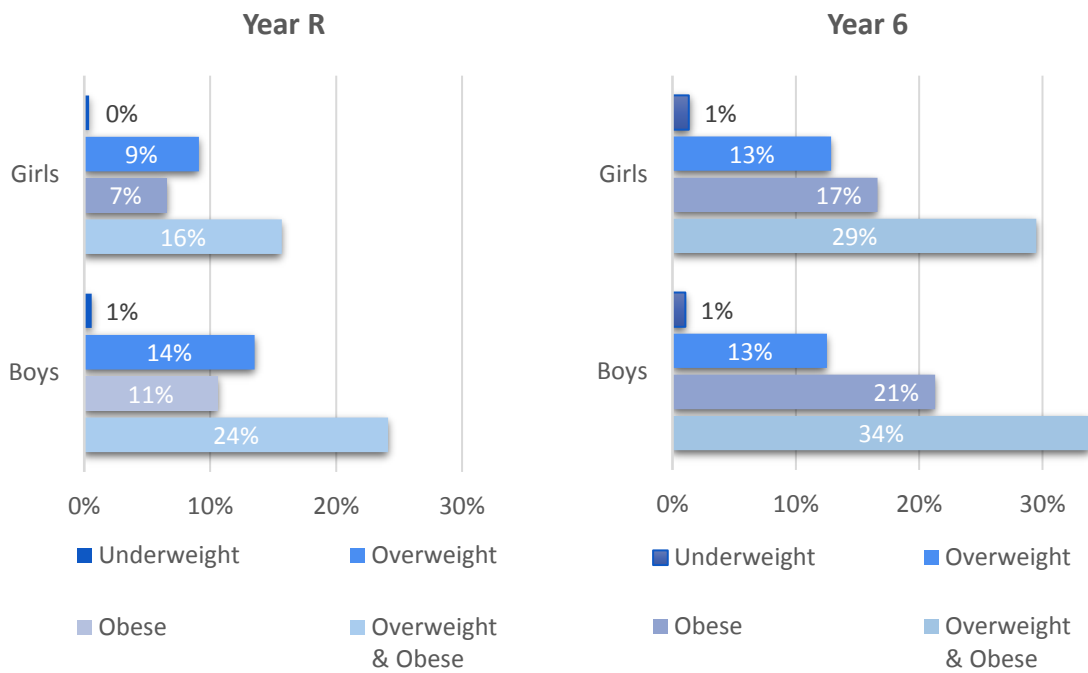
- the proportion of boys categorised as overweight or obese (24%) was higher in Year R than for girls (16%), see Table 2 and Figure 2
- the difference in the proportion of overweight or obese between boys and girls was less pronounced in Year 6

**Table 2: BMI classifications by sex, percentages, 2017/18**

	Year R		Year 6	
	Boys	Girls	Boys	Girls
<i>Underweight</i>	<1	<1	1	1
<i>Healthy weight</i>	75	84	65	69
<i>Overweight</i>	14	9	13	13
<i>Obese</i>	8	5	16	13
<i>Severely Obese</i>	2	2	5	3
<b><i>Combined Obese &amp; Overweight</i></b>	<b>24</b>	<b>16</b>	<b>34</b>	<b>29</b>

*Note: percentages rounded to the nearest integer*

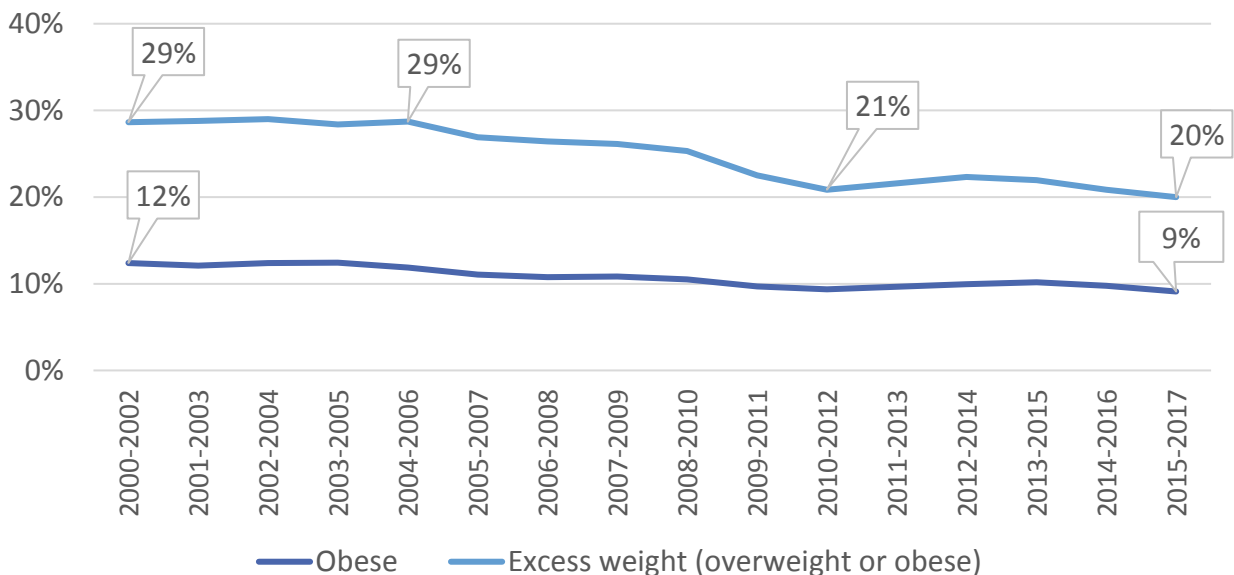
**Figure 2: Proportion of children classified as underweight, overweight and obesity by age group and sex, 2017/18**



### Changes over time – Year R

- the proportion of Year R children classified as overweight or obese has remained similar at around 20% since 2010-2012, and continues to be lower than in the period between 2000 and 2006 (29%)
- the proportion of children classified as obese in Year R has decreased marginally from 12% in 2000-2002 to 9% in 2015-2017

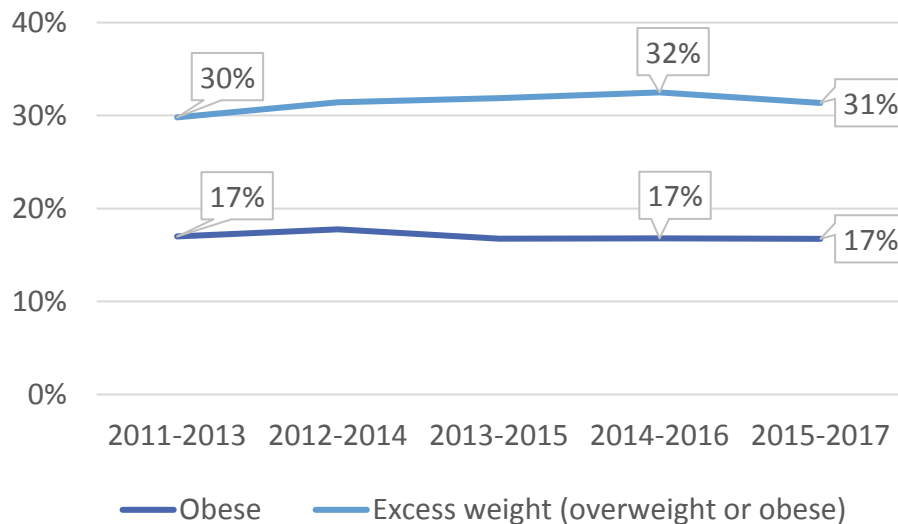
**Figure 3: BMI classifications for Year R (4-5 year olds), three year averages**



## Changes over time – Year 6

- since the JCMP was expanded to include measurement of Year 6 children in 2011/2012, the prevalence of obesity in Year 6 has remained similar, at around one in six (17%)
- the proportion of obese or overweight children has also remained at around one in three (31%) since 2011 - 2013, see Figure 4

**Figure 4: BMI classifications for Year 6 (10-11 year olds), three year averages**

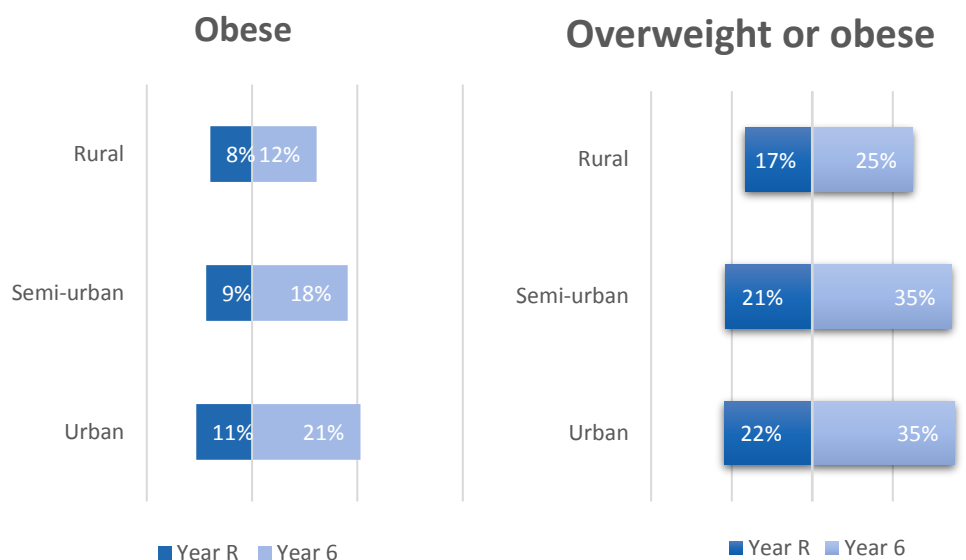


## By parish of residence<sup>1</sup>

For this section, data from the previous three years has been combined.

- a slightly lower proportion of children living in ‘rural’ parishes in Year R were overweight or obese (17%) compared to those living in ‘semi-urban’ and ‘urban’ areas (21% and 22% respectively)
- this difference was more pronounced in Year 6: the proportion of children classified as overweight or obese in ‘rural’ parishes (25%) was lower than the proportion in ‘semi-urban’ and ‘urban’ areas (35%)
- the prevalence of obesity was higher across all rural/urban areas in Year 6 when compared to similar areas in Year R

**Figure 5: BMI classifications by parish area type, 2015/16 to 2017/18 (3-year average)**



<sup>1</sup> The parish of residence of each child was classified into:

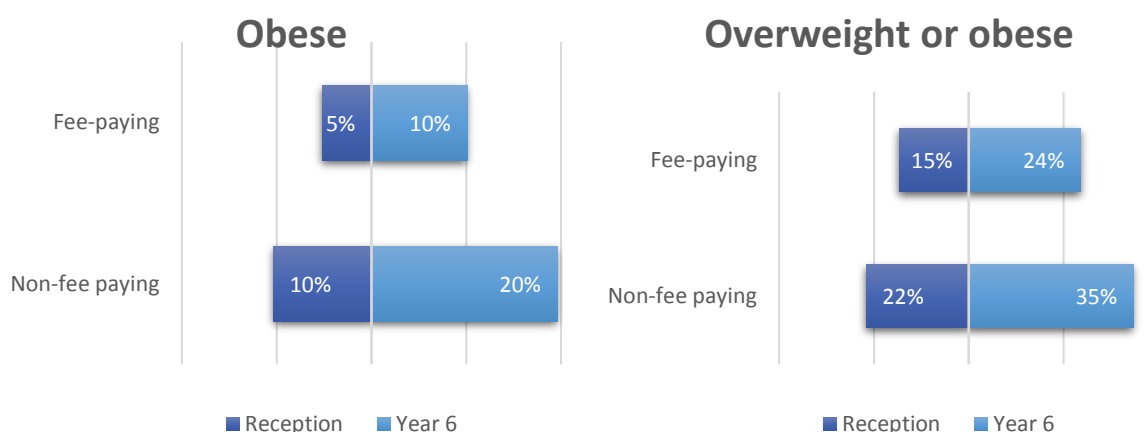
- *Urban* – St Helier
- *Semi-urban* – St Brelade, St Clement, St Saviour
- *Rural* – Grouville, St John, St Lawrence, St Martin, St Mary, St Ouen, St Peter, Trinity

## By type of school attended<sup>2</sup>

For this section, data from the previous three years has been combined.

- in both Year R and Year 6, a higher proportion of children who attended non-fee paying schools were obese (10% in Year R and 20% in Year 6), compared to children who attended fee paying schools (5% and 10% respectively)

**Figure 6: BMI classifications by school type, 2015/16 to 2017/18 (3-year average)**



## Cohort changes

Most children in Year 6 in 2017/2018 were previously measured in 2011/2012 whilst in Year R. Therefore changes in obesity prevalence for the same cohort of children over time can be examined (see Table 3):

- a similar proportion of the cohort were overweight in Year R (11%) as when in Year 6 (13%), (but they were not necessarily the same children – see ‘Longitudinal analysis’)
- the prevalence of obesity increased as the cohort aged from Year R (10%) to Year 6 (19%)
- the proportion of the cohort who were either overweight *or* obese in 2011/12 increased from 20% in Year R, to 32% in when in Year 6
- the 2017/18 Year 6 cohort had very similar weight characteristics six years previously when they were in Year R compared to the current 2017/18 Year R (see Table 3 vs Table 1)

**Table 3: BMI classifications, percentages, for a single cohort of children over time**

	2011/12 Year R	2017/18 Year 6
<i>Underweight</i>	1	1
<i>Healthy weight</i>	79	67
<i>Overweight</i>	11	13
<i>Obese</i>	7	15
<i>Severely Obese</i>	2	4
<b><i>Combined Overweight &amp; Obese</i></b>	<b>20</b>	<b>32</b>

*Note: percentages rounded to the nearest integer*

*\*Prior to 2011 underweight children were included in the healthy weight category*

<sup>2</sup> 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’s, St. John’s, St. Lawrence, St. Luke’s, St. Martin’s, St. Mary’s, St. Peter’s, St. Saviour’s, Trinity

## Longitudinal analysis

The change in weight status for individuals from Year R in 2011/12 to Year 6 in 2017/18 can also be used to analyse the movements between weight status categories. 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 more appropriate when exploring individual movements.

To ensure sufficiently robust data, the measurements from children in three cohorts were included (those in Year R in 2009/10; 2010/11; 2011/12), and their corresponding measurements from Year 6 (in 2015/16; 2016/17; 2017/18).

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

- nearly three-quarters (72%) of children were healthy or underweight in Year 6 and six years previously in Year R
- one in twenty children (5%) were obese both when they were in Year R and Year 6

**Table 4: BMI classifications, percentages, for 3-year cohort of children over time (both sexes)**

		<i>Year R in 2009/10; 2010/11; 2011/12</i>			<b>All weight categories</b>
		Healthy weight & underweight	Overweight	Obese	
<i>Year 6 in 2015/16; 2016/17; 2017/18</i>	Healthy weight & underweight	72	3	1	<b>76</b>
	Overweight	10	2	1	<b>13</b>
	Obese	4	3	5	<b>11</b>
	<b>All weight categories</b>	<b>86</b>	<b>8</b>	<b>6</b>	<b>100</b>

## Longitudinal analysis by Year R grouping

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

- most children who were healthy weight in Year R remained healthy weight six years later in Year 6 (84%), 11% of this group became overweight, and an additional 5% became obese or severely obese
- for children who were overweight in Year R six years previously, 30% remained overweight by Year 6, 32% of this group had become obese or severely obese, and around two in five (38%) had become a healthy weight
- three-quarters of children who were obese or severely obese six years previously in Year R remained obese or severely obese (77%) by Year 6; 14% of these children became overweight and around one in ten moved to a healthy weight (9%) by Year 6

**Table 5: BMI classifications, percentages, for 3-year cohort of children over time (both sexes)**

*Year R in 2009/10; 2010/11; 2011/12*

		Healthy weight & Underweight	Overweight	Obese
<i>Year 6 in 2015/16; 2016/17; 2017/18</i>	Healthy weight & Underweight	84	38	9
	Overweight	11	30	14
	Obese	5	32	77
	<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

See Tables 6 and 7 for further detail by sex. A slight difference between the sexes was noted whereby 81% of obese boys in Year R remained obese by Year 6, whereas this was true for 72% of obese girls – a higher proportion of obese girls in Year R moved to the ‘overweight’ category by Year 6 (20%) than obese boys (9%).

**Table 6: BMI classifications, percentages, for a 3-year cohort of children over time (girls only)**

*Year R in 2009/10; 2010/11; 2011/12*

		Healthy weight & Underweight	Overweight	Obese
<b>GIRLS</b>				
<i>Year 6 in 2015/16; 2016/17; 2017/18</i>	Healthy weight & Underweight	85	40	8
	Overweight	11	27	20
	Obese	3	34	72
	<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

**Table 7: BMI classifications, percentages, for a 3-year cohort of children over time (boys only)**

*Year R in 2009/10; 2010/11; 2011/12*

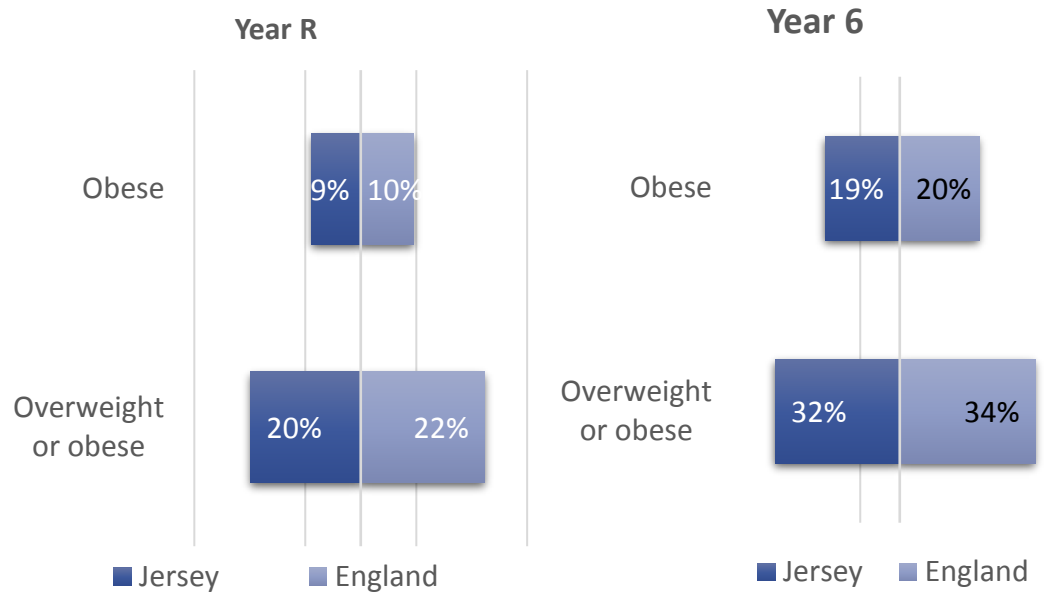
		Healthy weight & Underweight	Overweight	Obese
<b>BOYS</b>				
<i>Year 6 in 2015/16; 2016/17; 2017/18</i>	Healthy weight & Underweight	83	36	10
	Overweight	11	33	9
	Obese	6	31	81
	<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>



## Comparison to England

- for both Year R and Year 6, the proportion of obese and overweight children were similar in the two jurisdictions, see Figure 7

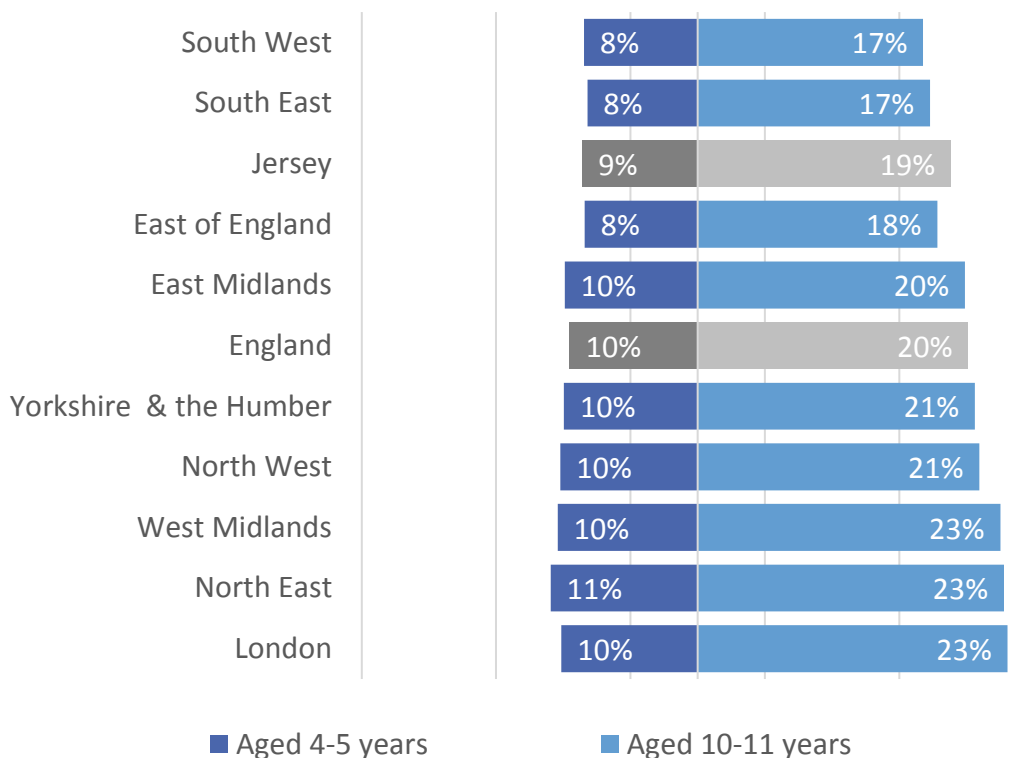
Figure 7: Prevalence of obesity, comparison to England, 2017/18



## Comparison with English regions

- obesity prevalence in Year R children was similar in Jersey compared to most English regions; the North East was significantly higher than Jersey (Figure 8)
- obesity prevalence was similar to England and most English regions for Year 6 children; there were significantly lower levels of obesity in Jersey than the North East and London

Figure 8: Prevalence of obesity Jersey and English regions, 2017/18



## 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 2011/12 academic year to include measuring the heights and weights of Year 6 children.

### BMI categories

The height and weight measurements of children are used to calculate their Body Mass Index (BMI) ( $\text{height (m)} * \text{height (m)} / \text{weight, (kg)}$ ). 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**.

There are two classification systems (clinical and epidemiological) which use slightly different BMI boundaries during the classification. The **epidemiological** definition, which uses the British 1990 growth reference (UK90)<sup>3</sup> to determine weight status according to a child's age and sex, is used for the majority of this report for summaries of whole cohort and population groups.

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. See Figures 9 and 10 for the relevant centile boundaries.

Figure 9: Centile boundaries for each weight category – epidemiological

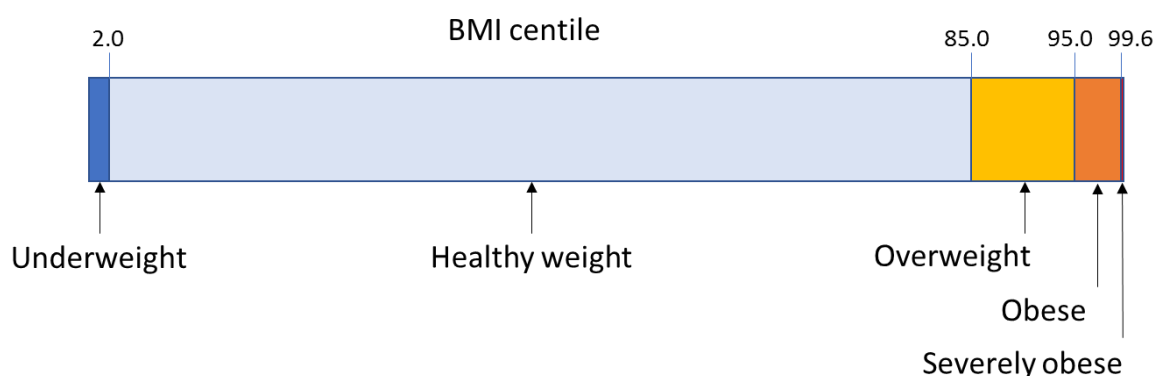
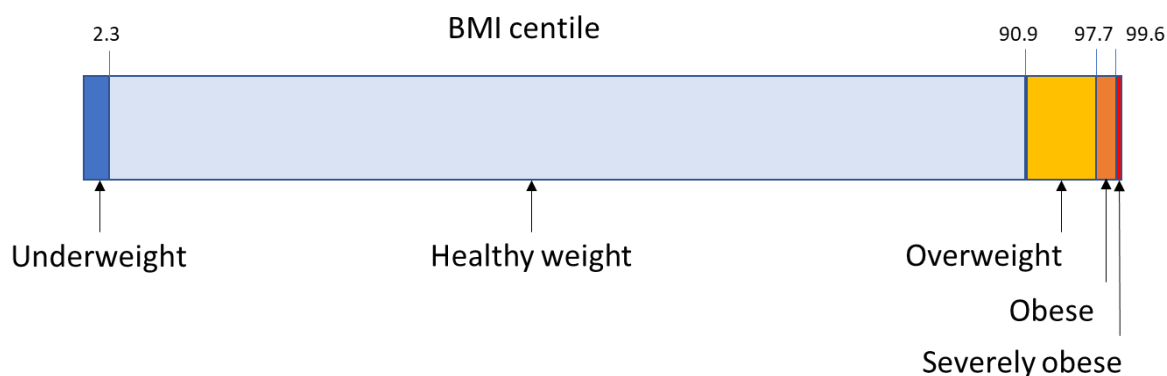


Figure 10: Centile boundaries for each weight category – clinical



### Participation

Participation in the JCMP is not compulsory and each year a small number of parents choose not to consent. Additionally, children absent from school on the day of measurement may not be included.

<sup>3</sup> '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.

A total of 2,034 children were measured in 2017/18 (94% of all eligible children), across Year R and Year 6.

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<sup>4</sup>. Therefore, any potential effect from non-response bias in the JCMP is anticipated to be of a similar magnitude given the high participation rates observed.

The number of children for whom weight status was available for the section on longitudinal analysis were:

- 2,936 children in Year R in 2009/10, 2010/11 and 2011/12
- 2,843 children in Year 6 in 2015/16, 2016/17 and 2017/18

Of these, 2,441 children could be matched as having been measured in *both* Year R and Year 6, and were included in the longitudinal analysis.

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<sup>4</sup> 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