

# Kent Child Weight Health Needs Assessment

October 2020



---

**Produced by**

Wendy Jeffreys: Consultant in Public Health, KCC

Zara Cucci: Senior Public Health Analyst, KCC

Kirstie Lau: Dentist - Public Health Placement, 2018/19, KCC

Jomana Abdelhali: Medical Student - Public Health Placement, KCC

Correspondence to: [phbusinesssupport@kent.gov.uk](mailto:phbusinesssupport@kent.gov.uk)

## | Contents

<b>1. Executive Summary .....</b>	<b>4</b>
1.1 Call to Action .....	4
1.2 Tables and Graphs .....	6
<b>2. Defining the Issues .....</b>	<b>7</b>
<b>3. Influences on child weight .....</b>	<b>9</b>
3.1 Childhood development .....	9
3.1.1 Food insecurity and obesity .....	10
3.2 Cultural .....	10
3.3 Environmental .....	11
3.3.1 Accessibility to food and drink .....	12
3.3.2 Calories from sugar .....	15
3.3.3 Sugar and oral health .....	16
3.4 Physical environment and physical activity .....	16
3.4.1 Increasing opportunities for active travel .....	19
3.5 Mental health and weight .....	19
3.6 Learning disability and weight .....	19
3.6.1 Medications and weight .....	20
<b>4. Findings: The scale of the problem.....</b>	<b>21</b>
4.1 Sources of data.....	22
4.2 Epidemiological findings .....	22
4.2.1 National overview .....	22
4.3 Weight through childhood – a view of Kent .....	25
4.3.1 Weight at birth .....	25
4.3.2 Weight in early childhood .....	26
4.3.3 Weight in children 4-11 years .....	28

4.3.4	Weight in older children 12-18 years .....	33
4.4	Exploring the NCMP three-year average of excess weight and obesity .....	33
4.4.1	Exploring the NCMP at a smaller geography .....	34
4.5	Dental Health .....	35
4.6	Child weight and inequalities .....	38
<b>5.</b>	<b>Services and Interventions: What works? .....</b>	<b>39</b>
5.1	Support available in Kent.....	41
5.1.1	Exclusive breast feeding .....	41
5.1.2	Healthy start vouchers .....	41
5.1.3	Local campaign .....	41
5.1.4	National PHE campaign .....	42
5.2	Interventions .....	42
5.3	Specialist services.....	42
5.4	Training programmes accessed by local stakeholders.....	43
<b>6.</b>	<b>Consultation .....</b>	<b>44</b>
6.1	Views of stakeholders .....	44
6.2	External insights .....	45
<b>7.</b>	<b>Conclusion .....</b>	<b>47</b>
<b>Appendix A</b>	<b>.....</b>	<b>48</b>
<b>Appendix B</b>	<b>.....</b>	<b>49</b>
<b>Appendix C</b>	<b>.....</b>	<b>50</b>
<b>Appendix D</b>	<b>.....</b>	<b>51</b>
<b>Appendix E</b>	<b>.....</b>	<b>52</b>

**Appendix F.....57**

**Appendix G .....60**

**Appendix H .....61**

**Appendix I .....62**

**References .....63**

## | 1. Executive Summary

Childhood weight is widely discussed and observed. In recent years childhood obesity has been recognised as a major public health challenge and has a wide-ranging impact on health and wellbeing.

The causes of childhood obesity are complex, they include biology and individual behaviour, but this is set within the cultural, social, and economic environment in which we live. This complexity means that even on a local level, working as a single agency is less likely to be effective in reducing childhood obesity than working in partnership with other bodies.

Nearly a third of children aged 2 to 15 are overweight or obese<sup>1</sup> and younger generations are becoming obese at earlier ages and staying obese for longer. The burden of excess weight is falling hardest on those children from low-income backgrounds. Obesity rates are highest for children from the most deprived areas and this is getting worse. Children aged 5 and from the poorest income groups are twice as likely to be obese compared to their most well-off counterparts and by age 11 they are three times as likely. Obesity amongst children is observed disproportionately in some ethnic groups.

Food insecurity is identified as a significant issue affecting at least 1 in 10 households although recent economic changes may suggest this is underestimated. Children from food insecure households are more likely to eat past satiation.

### 1.1 Call to Action

#### Immediate

- Work with medicine management and prescribers to review the prescribing of antibiotics and anti-reflux medication for infants. CCG and KCC
- Raise awareness in partnership with medicines management and through campaign activity about the impact and use of specific medicines in infants and those with learning disabilities on excess weight. CCG and KCC
- Commission an evidence-based tier 3 service which is responsive to need and demand CCG
- Identify recommendations from PHE Changing behaviour in families- Behaviour change techniques for healthy weight services to support families with children aged 4-11 years for local implementation. CCG and KCC
- Complete a rapid review of the local levels of food insecurity and a system wide plan to support and redress. KCC

## Medium term

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Develop and co-produce messaging that talks to different populations about formula feeding to:</li> <li>✓ Improve the of knowledge of parents and health professionals about the volume of formula feed given from the day of birth to avoid overfeeding of infants</li> <li>✓ Provide advice and guidance to the wider family and new parents about feeding formula fed babies on demand and not encouraging infants to finish the bottle</li> <li>✓ Highlight the proportion of sugar in follow up milks</li> </ul> | <p>KCC, KCHFT,<br/>CCG,<br/>Maternity</p> |
| <ul style="list-style-type: none"> <li>• Establish systematic processes for identifying and recording ACE as part of clinical weight management including eating disorders.</li> </ul>   | <p>CCG and KCC</p>                        |
| <ul style="list-style-type: none"> <li>• Identifying, recording, and monitoring weight amongst those with SEND as part of the annual health checks programme and/or as part of medicine reviews.</li> </ul>  | <p>CCG</p>                                |
| <ul style="list-style-type: none"> <li>• Focus attention and activity to increase awareness of what constitutes a healthy weight through pictorial visualisation [including 3 D] in pregnancy, infancy, early childhood and adolescence taking into account different cultures.</li> </ul>   | <p>CCG and KCC</p>                        |
| <ul style="list-style-type: none"> <li>• Systematically prioritise and implement the BAME insight recommendations highlighted in chapter 5 and presented in Appendix I</li> </ul>  | <p>KCC</p>                                |
| <ul style="list-style-type: none"> <li>• Evaluate the impact of all services and interventions as an ongoing aspect of practice, providing publication of the same.</li> </ul>   | <p>All providers and commissioners</p>    |

## Longer term

- |  |                      |
|--|----------------------|
| <ul style="list-style-type: none"> <li>• Enable the community, health professionals and non-health professionals to have meaningful conversations about unhealthy weight with appropriate and accessible training and ‘tools’</li> </ul> | <p>ICS</p>           |
| <ul style="list-style-type: none"> <li>• Promote the benefits of breast feeding for up to 6 months and workplace infrastructure to support women returning to work.</li> </ul>   | <p>KCC and ICS</p>   |
| <ul style="list-style-type: none"> <li>• Develop and co-produce messaging on portion sizes and sugars for children, young people and families</li> </ul>   | <p>KCC</p>           |
| <ul style="list-style-type: none"> <li>• Commission and contribute to research which builds the evidence base for tier 2 services for children under 4 years, 5-11 years, and 12-18 years.</li> </ul>                                    | <p>KCC and KCHFT</p> |

## 1.2 Tables and Graphs

Figure 1:	Food and drink environment
Table 1:	Fast food outlets and deprivation by local authority, 2016
Table 2:	Fast food outlets in coastal wards and position of ward in district re: deprivation
Table 3:	Fast food outlets by district, 2017
Table 4:	Vehicle access and deprivation by lower super output area [LSOA]
Figure 2:	Recommended maximum daily sugar intake
Figure 3:	Greenspace accessibility by decile of deprivation
Figure 4:	Percentage of 5- 16year olds activity for 60 minute or more per day
Table 5:	Childhood physical activity, 2017/18 England
Table 6:	Childhood physical activity by gender. 2017/18 England
Table 7:	Proportion of state funded primary, secondary, special school with SEN statement or EHCP, or pupils with SEN support by primary need and ethnic group, England, January 2019
Table 8:	Child BMI classification definitions for population monitoring
Figure 5:	Effects of obesity on children’s physical and mental health
Figure 6:	Overview of childhood weight, England
Table 9:	Numbers of hospital admissions for eating disorders by age and gender, England 2013/14 -2017/18
Table 10:	Number of hospital admissions for eating disorders amongst 10-24year olds by age and gender in England, 2017/18
Table 11:	The proportion of live births at 37 weeks and over gestation with a low birth weight
Table 12:	Proportions of birth weight across weight ranges in England and South East, 2018
Table 13:	Prevalence of child obesity amongst year R in the South East, 2018/19
Table 14:	Prevalence of child obesity amongst year 6 in the South East, 2018/19
Table 15:	Prevalence of overweight and obese in Year R, 2014/15-28/19 in Kent
Table 16:	Prevalence of obesity in Year R, 2014/15- 2018/19 in Kent
Table 17:	Prevalence of overweight and obesity in Year 6, 2014/15- 2018/19 in Kent
Table 18:	Severe obesity prevalence in England by deprivation decile 2018/19
Table 19:	Obesity prevalence in England by deprivation decile 2018/19
Table 20:	Prevalence of underweight in reception aged children, Kent, 2008/9-2018/19
Table 21:	Prevalence of underweight in year 6 aged children, Kent, 2008/9-2018/19
Table 22:	The proportion of children aged 5 years with decayed, filled, missing teeth 2018/19 in Kent and England
Table 23:	Three year rolling average, excess weight, and obesity in year R and 6, by district 2016/17 – 2018/19
Table 24:	The average number and proportion of children aged 5 years with decayed, filled, missing teeth, 2014/15- 2018/19 in Kent, South East and England
Table 25:	Average number of decayed, filled missing teeth amongst 5-year-old children 2016/17 - 2018/19
Table 26:	The percentage of children at age 5 within the survey sample who experienced dfmt by district 2016/17 & 2018/19
Table 27:	Average number of dentinally decayed filled missing teeth amongst five-year olds with any decay experience d3mft (d3mft>0) in Kent 2018/19
Figure 6:	Three interventions for preventing tooth decay
Table 28:	Tiers of weight management services for children and young people in Kent

## | 2. Defining the issue

Childhood weight is widely discussed and observed. In recent years childhood obesity has been recognised as a major public health challenge and has a wide-ranging impact on health and wellbeing.

Children who are obese are more likely to have asthma and other respiratory problems, skin infections, type 2 diabetes, and some cancers. Obesity in childhood is also linked to psychological disorders including poor self-esteem, eating disorders and anxiety. In the longer-term, obese children are more likely to be obese in adulthood, carrying with them the increased risk of disease, disability, and premature mortality.

**The national ambition is to halve childhood obesity and significantly reduce the gap in obesity between children from the most and least deprived areas by 2030.**

The causes of childhood obesity are complex, they include biology and individual behaviour, but this is set within the cultural, social, and economic environment in which we live. Our environment provides us with access to cheap energy dense foods and less active ways of living.<sup>1</sup> Eating healthily and being active are not the most accessible ways for people to live their lives. Only focussing on changing individual behaviour is unlikely to lead to any large reduction in the prevalence of obesity. This was reflected in Making Obesity Everyone's Business – A Whole Systems Approach to Obesity (2017).<sup>2</sup> This report highlighted the importance of local authorities adopting a Whole Systems Approach to tackling obesity. Referring to the Obesity Systems Map<sup>3</sup>, the report argues that the complexity of the obesity issue makes it a difficult problem to tackle one component at a time.

This complexity means that even on a local level, working as a single agency is less likely to be effective in reducing childhood obesity than working in partnership with other bodies who have access to other levers which might help reduce and prevent obesity.

Nearly a third of children aged 2 to 15 are overweight or obese<sup>1</sup> and younger generations are becoming obese at earlier ages and staying obese for longer<sup>2</sup>. The burden of excess weight is falling hardest on those children from low-income backgrounds. Obesity rates are highest for children from the most deprived areas and this is getting worse. Children aged 5 and from the poorest income groups are twice as likely to be obese compared to their most well-off counterparts and by age 11 they are three times as likely.

Obesity is a complex problem with many drivers, including our behaviour, environment, genetics, and culture. However, at its root obesity is caused by an energy imbalance: taking in more energy through food than we use through activity. Physical activity is associated with numerous health benefits for children, such as muscle and bone strength, health and fitness, improved quality of sleep and maintenance of a healthy weight. There is also evidence that physical activity and participating in organised sports and after school clubs is linked to improved academic performance.

Evidence suggests that portion sizes of meals have been increasing over the past 20 years - leading to higher calorie intakes. Other studies<sup>4,5</sup> illustrate the link between food insecurity

where children from food insecure households were more likely to eat past satiation and in the absence of hunger and in older children associated with a number of unhealthy dietary behaviours such as skipping breakfast in females, consuming sugary drinks and snacks in males.

A healthy weight in childhood is important because it:

- reduces the risk of some cancers such as bowel cancer, cardiovascular disease, type 2 diabetes and hypertension experienced in adulthood and increasingly in childhood.
- is more likely to be associated with good mental health.
- increases the chance of having a healthy weight through adulthood.

### Summary

- Childhood obesity is a major public health challenge
- Complex causes, biology, societal and cultural influence, individual behaviour, and environment
- Focus on individual behaviour will not have large scale impact
- Utilise a whole system approach

### | 3. The scale of influences on child weight

This chapter aims to illustrate the breadth of individual and multi factors including the socially determined and socially constructed, which influence or determine weight in childhood.

#### 3.1 Childhood development

Now more than ever before, younger generations are experiencing greater exposure to overweight, obesity and risk factors across their lives. This can be evidenced from an analysis of birth cohort studies carried out since 1946 where researchers found that more recent generations are firstly more likely to become overweight or obese and, that this is more likely to occur at younger ages than in previous generations.<sup>6</sup>

The incumbent CMO in her annual report in 2014 stated that ‘In women obesity can affect the outcomes of any pregnancies they have and impacts on the health of any future children they may have. In pregnant women, the developmental environment can affect the foetus and its germline cells, e.g. their eggs (primary oocytes) and so a woman’s health whilst she is pregnant also impacts on the health of her children and grandchildren’<sup>7</sup>

Elsewhere in her report the changes to the origins of health and disease are seen from the environment in which the foetus and new-born are exposed. It is suggested whilst not obvious at birth these environments influence the long-term risk of obesity and disease. ‘This novel trans generational mode of disease ‘inheritance’ from parents to children is likely to account for a greater proportion of risk in the population than fixed genetic effects.’<sup>8</sup>

Other research has found that alterations in gut microbiota are associated with obesity.<sup>9</sup> There are factors which affect the intestinal microbiota colonisation ante and postnatally including diet. Similarly, some medications have ‘microbiota altering effects’

Maternal obesity at the time of the ante natal booking appointment or rapid weight gain in a short period are risk factors for childhood obesity. Regression analysis of an observational cohort study of mother and child pairs found that an excess pregnancy weight gain was associated with an increased risk of an overweight child at age 3. The impact was greatest amongst those with a high BMI.<sup>10</sup>

A prospective cohort study in California found a positive association between women who had exceeded the gestational weight gain recommendations and childhood obesity. These women gave birth to larger children and were 46% more likely to have an overweight/obese child at 2-5 years old compared to women who met the gestational weight gain.<sup>11</sup>

‘Adverse childhood experiences and low income interact and independently predict obesity risk in early adolescence.’<sup>12</sup> A large USA study found a strong association in adolescents who had experienced ACEs and overweight and obesity compared to those with no ACEs.<sup>13</sup>

Experiencing childhood trauma is reported amongst patients with eating disorders. However, a French study<sup>14</sup> using a retrospective self-reporting childhood traumatism

questionnaire, found that emotional abuse and emotional neglect had the most specific impact on eating disorders [anorexia nervosa, bulimia nervosa and binge eating disorder].

In one systematic review<sup>15</sup> sleep deprivation, measured as short sleep by age, has concluded that for infants, children and adolescents a risk factor for the development of obesity is sleep of a short duration.

### 3.1.1 Food insecurity and obesity

1.5 million children are eligible for free school meals and 4 million children are living in poverty in the UK.<sup>16</sup> Food insecurity has been linked to a number of adverse medical and psychosocial outcomes, including obesity. Food security is achieved when 'all members of a household have access to adequate food at all times for a healthy, active lifestyle'<sup>17</sup> A UNICEF report in 2017 estimated that 10% of children in the UK lived in households affected by severe food insecurity<sup>18</sup> One American study found that the odds of childhood obesity were 5 times higher amongst food insecure households than food secure households.<sup>19</sup>

Malnutrition is associated with an impaired immune system and some diseases such as cystic fibrosis.

## 3.2 Cultural

Whilst the central cause of obesity is high energy intake and low levels of physical activity, there are a wide range of factors that influence obesity, which have been outlined within '*Tackling Obesities: Future Choices*'.<sup>20</sup> In addition to the evidence relating to maternal weight and childhood weight, Public Health England<sup>21</sup> have outlined the main risk factors for children depending on the households they are born into and grow up in, including;

- the prevalence of overweight and obesity is high in adults<sup>22</sup> and in women of childbearing age<sup>21</sup> with 6 in 10 adults and approximately 1 in 2 pregnant women in Kent.
- parents who are overweight or obese have children with a higher risk of obesity<sup>23</sup>
- it can be challenging for parents to identify that their child is overweight or obese<sup>24</sup> Most perceive that their child is a healthy weight, but this can be inaccurate for up to 52.2% of obese children.<sup>25</sup>
- children who are overweight or obese are more likely to remain overweight or obese as an adult.<sup>26</sup>

Embedding behaviours to minimise overeating include delaying the introduction of solid food until 6 months of age and introducing food using appropriate portion sizes and healthy foods.

Encouraging movement in the early months through the understanding the importance of awake tummy time from birth in preparation for crawling, eyes need to move too and chatter matters. The intention is to increase activity from birth with and setting habits around activity for the rest of childhood.

Food maybe an expression of cultural identity. Not only this it may support preservation of unity in a community and family.<sup>27</sup>

### 3.3 Environmental

The living environment and the interactions within it form our relationship with food as does the family environment in having a significant influence on children.

The incumbent CMO in 2019 stated that ‘a child’s likelihood of developing obesity and overweight is influenced by the environment in which they live and grow up in and to a lesser extent their genes.’<sup>28</sup>

The influences on everyday patterns of eating such as portion size foods available, the environment of eating, types of food and drink offered and consumed. ‘The calorie intake increase is thought to be the most significant influence accounting for this rise, caused by a range of environmental factors.’<sup>29</sup>

Learnt behaviour is copied often from families and/or peers which sometimes is seen as different eating behaviours depending upon the setting. An example is the eating of fruit and vegetables.<sup>30</sup> In 2018, 18% of children aged between 5 and 15 ate the recommended five or more portions of fruit and vegetables a day. The trend has largely remained stable since 2014. The proportion is similar for boys and girls.<sup>31</sup>

Figure 1: Food and drink environment

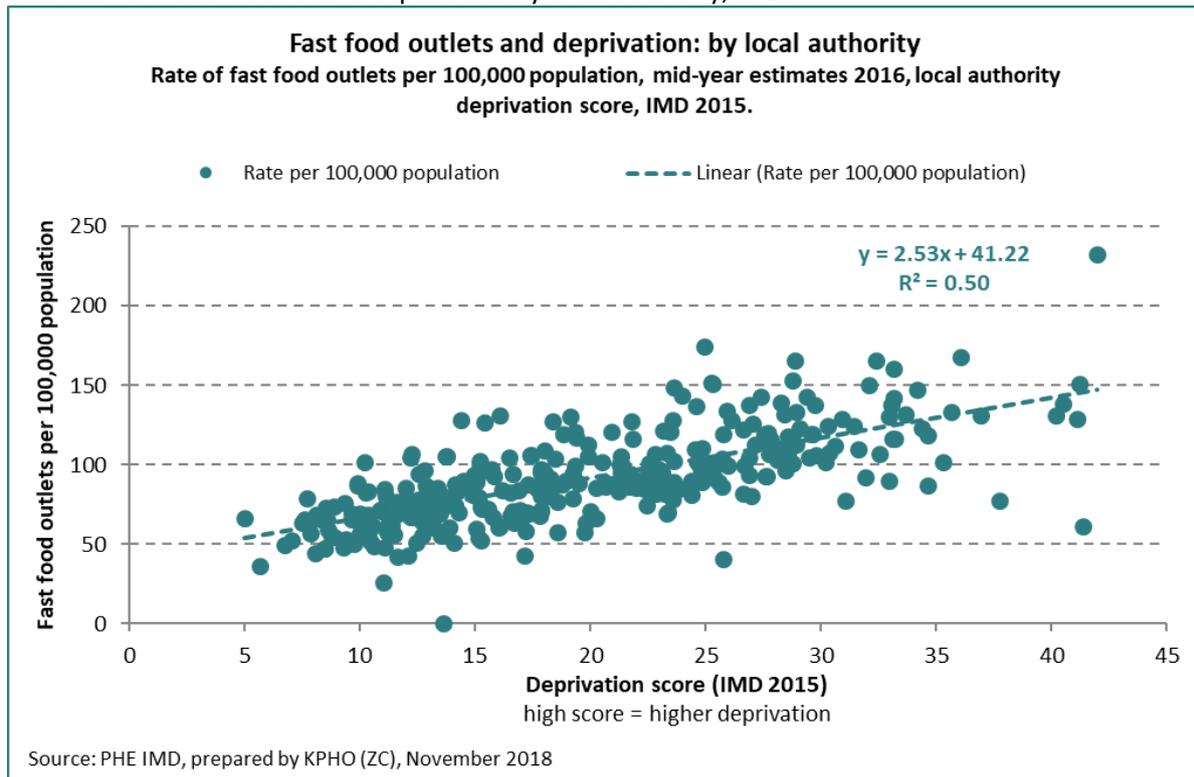


Source: PHE

### 3.3.1 Accessibility to food and drink

There is a known association between density of fast food outlets and deprivation.<sup>32</sup> Across England the highest rate of food outlets per 100,000 population can be seen in local authorities in areas of deprivation, ward level mapping has been included within Appendix B. The definition for food outlets analysis used by PHE referred to ‘energy dense fast food that is available quickly’<sup>33</sup> and included pizza outlets, chip shops, burger bars, chicken, and kebab shops.

Table 1: Fast food outlets and deprivation by local authority, 2016



The link between food outlets and food choice is not yet fully understood, systematic review explored food outlets around schools but focuses on the home residential environment.<sup>34</sup> A more recent study has focused on the daily route of travel that young people take to and from school, and how some aspects of the surrounding environment have become an extension of the ‘school’, specifically outlets of fast food which may provide socially acceptable, affordable places after school.<sup>35</sup>

In analysis by PHE fast food referred to *energy dense food that is available quickly, therefore it covers a range of outlets that include, but are not limited to, burger bars, kebab and chicken shops, chip shops and pizza outlets*. The information from this analysis is presented as a rate per 100,000 population and across England these ranged from 26 to 232 per 100,000 population. In Kent the range is smaller from 42 to 110.1 per 100,000 population reflecting the variation in deprivation levels across the county. This is presented on a map in appendix C. The density of fast-food outlets in Kent is observed to be higher in the coastal area wards and where there is greater deprivation.

Table 2: Fast food outlets in coastal wards and position of ward in district re: deprivation

District	Ward	No. of fast-food outlets	Deprivation - 10% most deprived LSOAs by IMD2019
Canterbury	Heron	31	1st
Dover	North Deal	16	not top 10%
Folkestone & Hythe	Folkestone central	27	2nd
Swale	Sheerness	27	1st
Thanet	Margate central	23	1st

Source: PHE<sup>36</sup>

The table below illustrates that Kent had two districts with higher rates per 100,000 population than England: Thanet and Folkestone & Hythe.

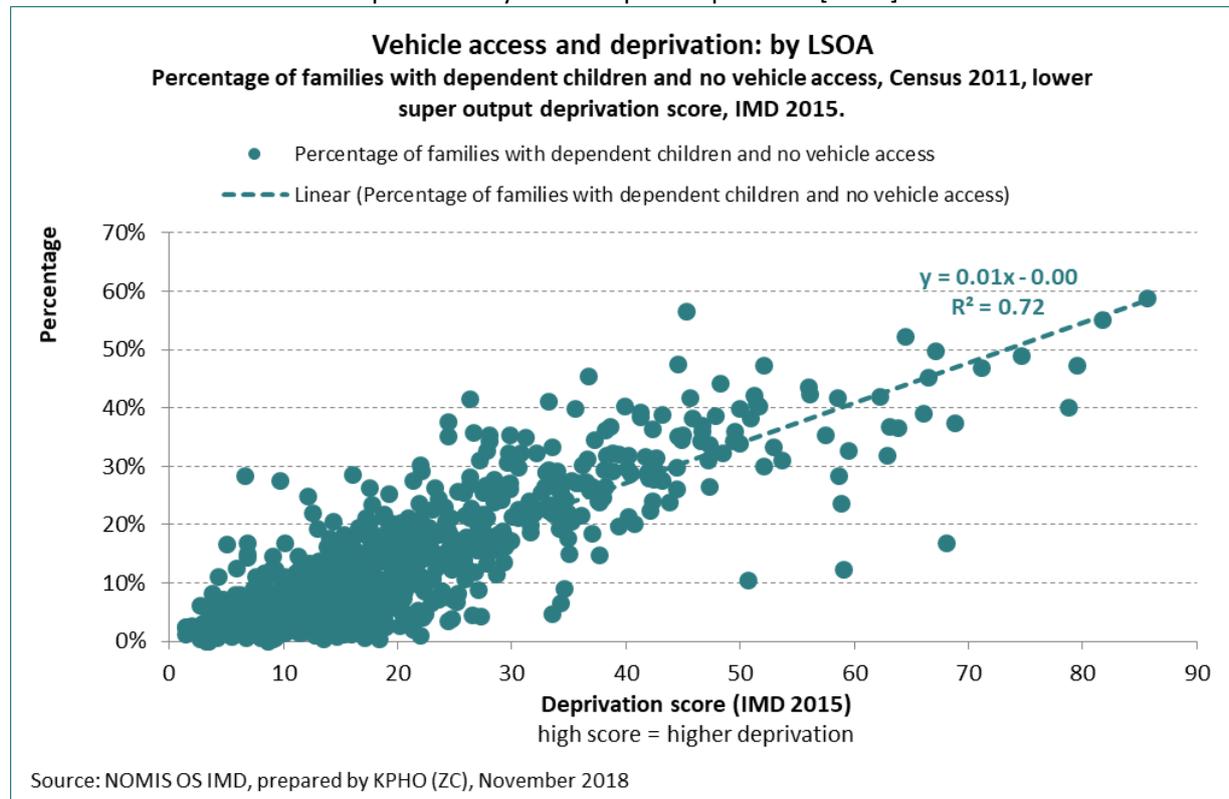
Table 3: Fast food outlets, by district, December 2017

LA name	Count of outlets	Rate per 100,000 population
Ashford	87	69.1
Canterbury	137	84.3
Dartford	100	95.1
Dover	104	90.8
Folkestone & Hythe	119	107.2
Gravesham	92	86.6
Maidstone	120	72.4
Sevenoaks	50	42.0
Swale	125	86.3
Thanet	155	110.1
Tonbridge and Malling	79	62.1
Tunbridge Wells	85	72.4
England		96.1

Source: PHE<sup>37</sup>

There is a known association between living in areas of deprivation and transport poverty as illustrated below.<sup>38</sup>

Table 4: Vehicle access and deprivation by lower super output area [LSOA]



The relationship between access to supermarkets, food choice and excess weight is unclear. There has been a commonly accepted belief that residents within poor urban areas cannot buy affordable healthy food. However, research has been unable to evidence this across the UK, due to the few studies that are often small and localised.

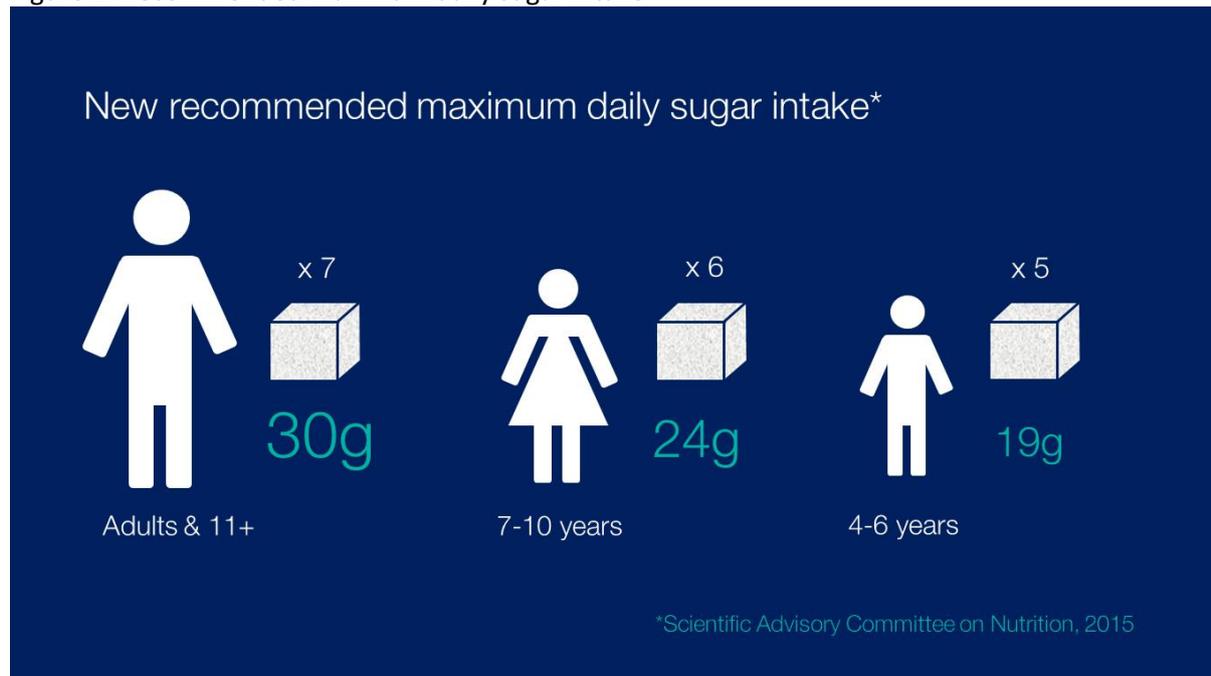
The factors that guide food choice are likely to be complex, but there may be some influence from distance to good quality food retailing, alongside car availability or use of public transport. Across Kent the highest percentage of families with dependent children and no vehicle access can be seen in lower super output areas of deprivation. Although, there is no known inequity in the location of supermarkets in terms of deprivation. Local analysis<sup>39</sup> showed higher odds of excess weight within pupils resident in areas with lower supermarket access, as well as, within pupils resident in areas closer to a food outlet (within 1200m). However, area deprivation and the urban/ rural environment helps explain this association.

Local planning and policies can shape change. The food and drink industry's use of upselling to encourage consumers to purchase a larger portion size or something additional has been linked to increased calorie consumption contributing to weight gain, overweight and obesity.<sup>40</sup> Their recommendations include; business rates relief for businesses that try to improve the public's health.

### 3.3.2 Calories from sugar

In 2015 SACN reported ‘that random controlled trials conducted in children and adolescents indicate that consumption of sugars-sweetened beverages, as compared with non-calorically sweetened beverages, results in greater weight gain and increases in body mass index’.<sup>41</sup> Research has found that sugars are the most significant factor in the increase seen in levels of obesity. Currently on average children are consuming up to 3 times more of the recommended levels of sugar.<sup>42</sup>

Figure 2: Recommended maximum daily sugar intake



The consumption of calories by children is too high, much of it, sugars. This is particularly seen in the consumption of sweetened drinks with one survey finding teenagers in England to consume the most sweetened drinks in Europe.<sup>43</sup> One report suggests that ‘on average overweight and obese children are consuming up to 500 extra calories per day’.<sup>44</sup> Much of current national policy is seeking to reduce sugar content in prepared foods, promote and publicise the calorie content of foods on packaging and menus on out of home food outlets.

The introduction and taste preference for sugar is experienced differently. Infants may receive greater quantities with manufactured milks such as growing-up and toddler milks which have been identified as containing ‘almost twice as much sugar per 100ml as cows’ milk.’<sup>45</sup>

The latest National Diet and Nutrition Survey collected from 2014/15-2015/16<sup>46</sup> provide details on free sugar consumption:

- free sugar makes up 13.5% of 4-10-year-olds and 14.1% of teenagers (11-to18-year-olds) daily calorie intake respectively,
- whilst free sugar consumption has decreased since 2008/09-2009/10, the official recommendation is to limit sugar to no more than 5% of total energy intake,

- for teenagers, sugary drink intake is more than double that of younger children, providing 22% and 10% of total energy intake respectively

'Inequalities in the levels of experience of dental decay in 5-year-olds living in different parts of the country and in different life circumstances persist. The consumption of sugary drinks is also associated with other issues of public health concern in children, for example, childhood obesity and increased risk of Type 2 diabetes.

### 3.3.3 Sugar and oral health

The impact of sugar in the diet is also seen in oral health. The recurrent exposure to teeth from free sugars, is the main cause of dental decay. One report states that 'lactose free milk has a greater potential to cause dental caries'<sup>47</sup> as it contains glucose.

Local policy aims to promote access to a dentist before the age of one [Dby1] through promotion amongst new parents and improving oral health amongst vulnerable groups specifically increasing awareness of who is exempt from dental treatment charges. In support the proposed Early years foundation stage [EYFS] reforms<sup>48</sup> include 'oral health' within the safeguarding and welfare requirements of the framework.

Tooth decay is more evident when a mouth receives a steady supply of sugar. Links between dental decay as seen in decayed filled missing teeth in children is observed locally to be in the same areas as those where children measured are identified as having excess weight. The detail is shown in chapter 3.

A recent study has looked at the data from the NCMP at year R and dental survey of 5 year olds and found that 'Dental caries prevalence was significantly higher among children with very overweight (26.8%, n=1,600) and with underweight (27.5%, n=163) than children with healthy weight (22.5%, n=11,677)'.<sup>49</sup> This also found that 'The associations between dental caries and body mass index remained after controlling for deprivation, exposure to fluoridated water and ethnicity. The odds ratios showed that the likelihood of having dental caries was significantly higher for children with overweight and with very overweight.' The analysis of the 5-year-old dental survey suggested that it is the 'frequent exposure of teeth to free sugars, most commonly through eating and drinking sugary foods and drinks, is the main cause of dental decay.'<sup>50</sup>

## 3.4 Physical environment and physical activity

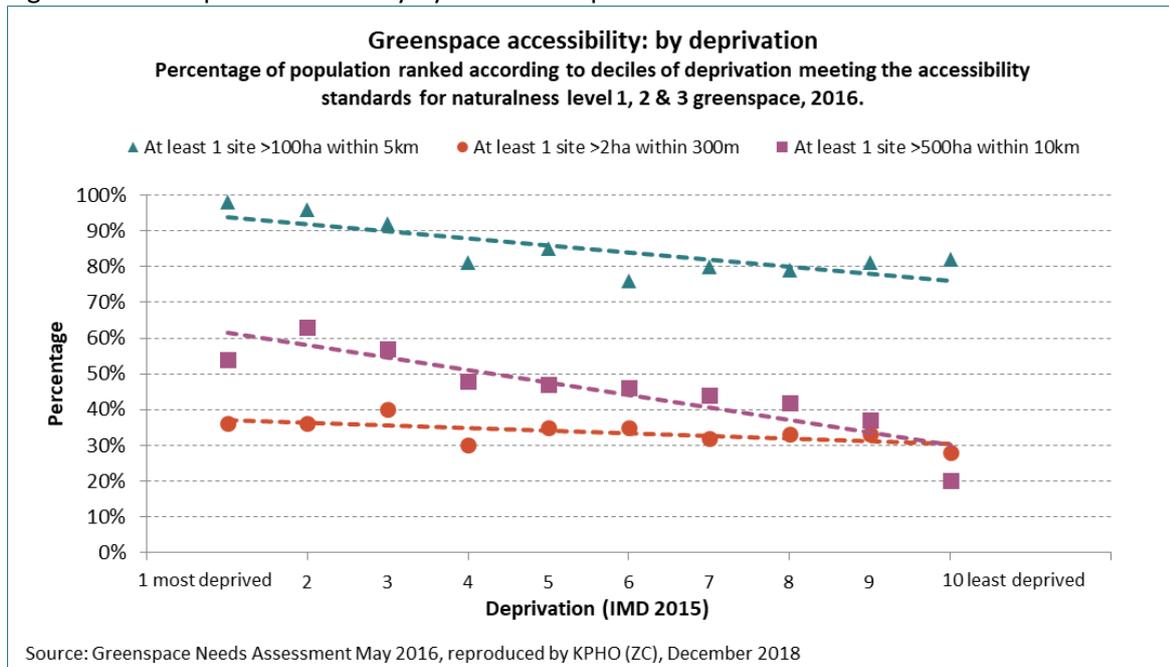
Evidence shows that a reduction in weight is best achieved by changing dietary habits and behaviour. That said the benefits of physical activity to maintain a healthy weight and improve mental health are well documented.<sup>51</sup> This section aims to illustrate the breadth of opportunities and some challenges to accessing green space across the county.

Research has found lower numbers of indoor and outdoor physical activity facilities within the most deprived areas in comparison to the least deprived.<sup>52</sup> Structured activity and sports facilities do not exclusively provide opportunity for physical activity, it is important to recognise unstructured activity and play.<sup>53</sup> Further, the factors that guide use of greenspace

and/ or sports facilities are likely to be complex. Possible mediating influences could include perception of acceptability, fear of crime, as well as the walkability of the local environment with influences from road connectivity, land use, residential density, and traffic exposure.

Local analysis shows lower odds of excess weight within pupils' resident in areas with lower greenspace access and longer distances to nearest sports facility. However, area deprivation and the urban/ rural environment helps explain this association as illustrated below.

Figure 3: Greenspace accessibility by decile of deprivation



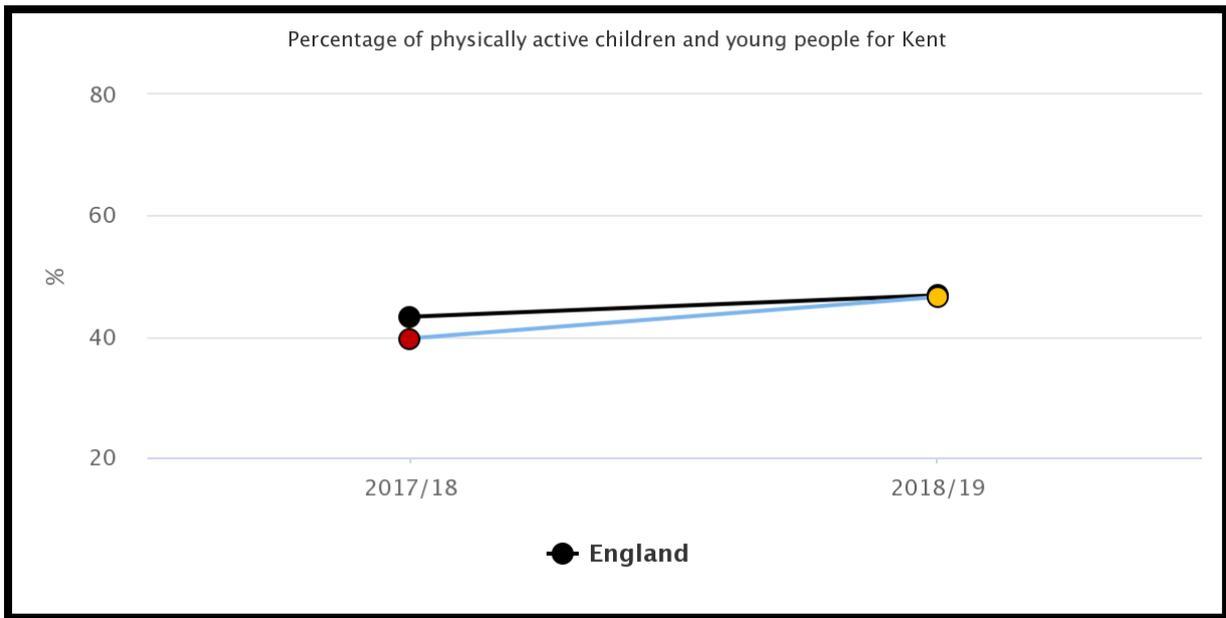
Whilst there is a clear theoretical basis for greenspace and health, the evidence has been unclear<sup>54</sup> and proximity does not determine usage. A large nationally representative study found a counterintuitive relationship between greenspace and obesity.<sup>55</sup> A Kent greenspace needs assessment found that more deprived areas were more likely to meet greenspace accessibility standards.<sup>56</sup> However, the definition for greenspace included the following categories:

- Level 1 – conservation areas, nature reserves, woodland and remnant countryside
- Level 2 – farmland, rivers & canals, grassland, country parks & open access land
- Level 3 – allotments, church yards, cemeteries and formal recreation space

There is evidence to suggest that younger children (ages 9-13) are more likely to be active than older children (ages 13-16).<sup>57</sup>

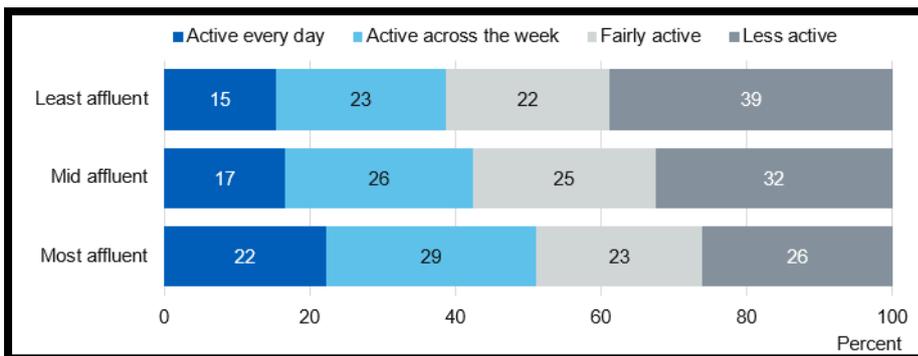
Measuring levels of physical activity to improve health outcomes was highlighted in 2019 in new guidance.<sup>58</sup> The intention is to help all children and young people aged 5-18 years accumulate and average of at least 60 minutes physical activity per day across the week. Activity of 60 minutes or more every day has increased significantly in children and young people aged 5-16 years from 2017/18 – 2018/19 by 4.2%

Figure 4: Percentage of 5- 16-year olds activity for 60 minute or more per day



Source: PHE fingertips

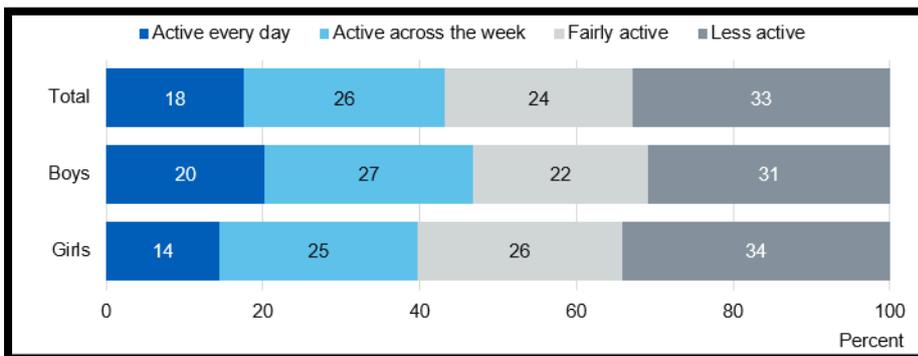
Table 5: Childhood physical activity, 2017/18 England



Source: NHS digital 2019<sup>59</sup>

For children aged 1-5 years the guidance advises that every movement counts with an aim for at least 180 minutes of movement per day.

Table 6: Childhood physical activity by gender. 2017/18 England



Source: NHS digital 2019<sup>60</sup>

### 3.4.1 Increasing opportunities for active travel

Active travel was identified within a briefing paper by PHE as an area of focus for action.<sup>61</sup> In this PHE state that *“creating an environment where people actively choose to walk and cycle as part of everyday life can have a significant impact on public health”* (p.4). It has also been demonstrated that free bus passes have been associated with greater active travel within older adults,<sup>62</sup> although, this does not change the level of active travel in younger people.<sup>63</sup> Overall, an internal Kent analysis in 2016 of school travel plan data found that over 20% of pupils were travelling by car, with similar percentages walking, whereas around 5% travelled by bus and 2% cycle.

### 3.5 Mental health and weight

Mental health and emotional wellbeing have a significant impact on our relationship with food. Not only are obese people more likely to get physical health conditions like heart disease, but they are also more likely to be living with conditions like depression. Some studies<sup>64</sup> suggest there are higher levels of poor mental health amongst those who are obese or underweight.

A recent UK longitudinal study<sup>65</sup> of healthy adolescents aged 11-13 years to early adulthood looked at the association between weight misperception and psychological symptoms. This suggested that regardless of ethnicity, **misperception of weight amongst young people, was a key determinant of increased psychological symptoms.** Importantly an accurate perception of ‘normal weight’ status [which refers to not being underweight, overweight or obese] being protective. Other research concludes that it is not obesity but perceived weight which increases the risk for depression in adolescents.

One study<sup>66</sup> has highlighted that adolescents with any trauma had higher BMI or percentile measurements than expected. However, **the proportion exposed to domestic violence and bullying who reported higher than expected body weight was significantly higher compared to those without any trauma.**

In addition are those who having had excess weight and who on losing weight become mentally unwell.

### 3.6 Learning disability and weight

There are many potentials, but different comorbidities from having excess weight or having a weight which is identified as underweight. The national child measurement programme {NCMP} which measures children in reception and year 6 does not include the weighing and measuring of children in special schools so longitudinal data for this cohort is not known. The NCMP has found in England and is replicated in Kent that overweight and obesity prevalence is generally higher within Black and Asian ethnic groups<sup>67</sup> and in those living within the most deprived areas.<sup>68</sup>

Table 7: Proportion of state funded primary, secondary, special school with SEN statement or EHCP, or pupils with SEN support by primary need and ethnic group, England, January 2019<sup>69</sup>

Ethnic group	% SEN statement or EHCP	% SEN support	% SEN statement or EHCP	% SEN support	% SEN statement or EHCP	% SEN support	%SEN statement or EHCP	% SEN support
	SLCN		SEMH		moderate LD		severe LD	
White	14.4%	21%	15.1%	18.6%	12.3%	22.6%	0.3%	11.5%
Traveller Irish heritage	15%	23.1%	22.4%	13.8%	16.1%	34.3%	0.7%	11.5%
Traveller gypsy roma	22.1%	16.9%	19.2%	12.9%	16.3%	38.9%	0.6%	12.6%
Mixed	14.9%	23.8%	16.4%	22.6%	9.3%	20.4%	0.3%	10.9%
White & black Caribbean	13.5%	18.5%	24.9%	26.6%	10.3%	22.7%	0.3%	8.4%
Asian	17.7%	35.4%	2.5%	9.8%	10%	28.1%	0.4%	15.2%
Black	16.9%	33%	9.2%	19.2%	8%	20.5%	0.4%	12.3%
Chinese	21.2%	44.9%	2.3%	10.8%	5.4%	12.7%	0.1%	12.7%
Unclassified	14%	21.9%	13.2%	20%	10.7%	21%	0.5%	10.2%
All	15%	23.4%	13.3%	18.1%	11.5%	22.8%	0.3%	11.9%

Source: School census data

Data presented in the figure above illustrates the differences in primary need showing that moderate and severe learning disability is not distributed evenly across ethnic groups. It is possible that higher excess weight is also seen in the same ethnic groups. There are prescribed medications which may be used in the treatment, management and care of those with SEND which exacerbate or cause weight gain and similarly those which may cause weight loss and these are shared in appendix D.

### 3.6.1 Medications and weight

One retrospective large cohort study in the USA<sup>70</sup> has found that commonly prescribed antibiotics and anti-reflux medication to infants before the age of 2 years have a dose response effect stronger association with obesity. To note not all potential confounders such as maternal BMI at booking were considered. These medications have ‘microbiota altering effects’<sup>71</sup> and as referenced earlier these alterations to gut microbiota are associated with obesity.

#### Summary

- Birth weights are increasing
- Overfeeding in infancy is impacting on weight in early childhood
- Addressing inequalities fundamental to changing childhood weight status
- Multiplicity of consideration

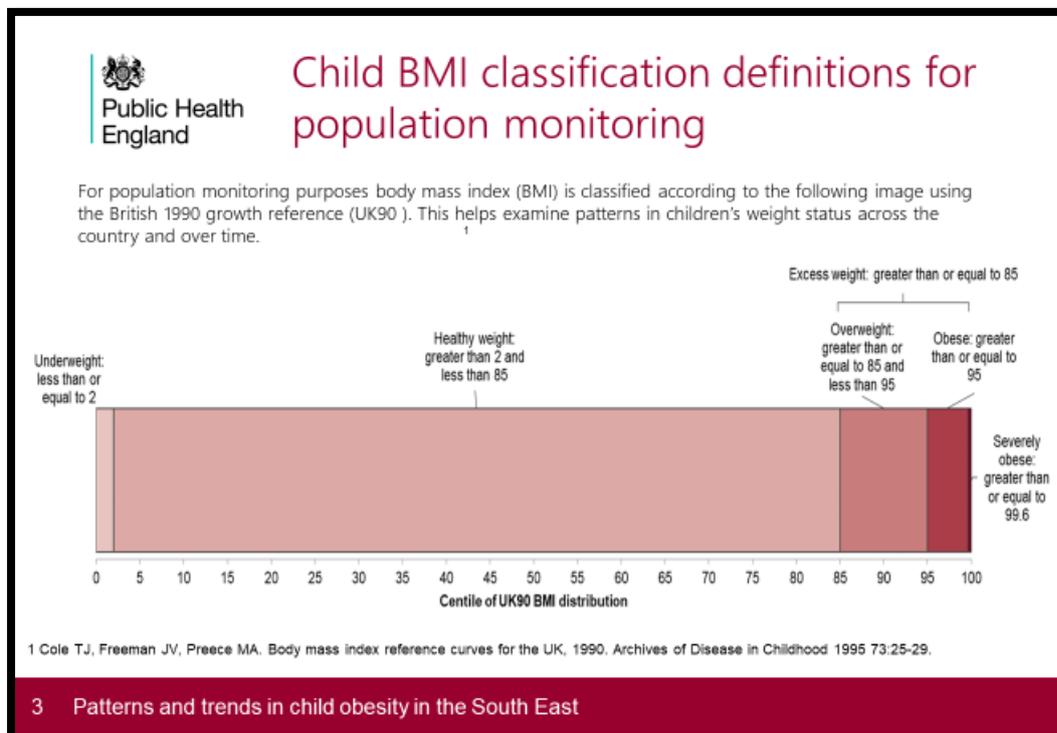
## 4. Findings – The scale of the problem

The presentation of childhood weight in the population of Kent is provided through an overview of the epidemiological picture, the views of health and non-health staff and local insights research. Kent has a diverse population in terms of socio-economic challenges, ethnicity and culture, rural and urban communities, seaside towns, high numbers of unaccompanied asylum seeking children [UASC], which present differing challenges in the aim to support individuals to have a healthy weight. The data shown is the most up to date available at the time of analysing.

Assessing the BMI of children is more complicated than for adults because a child’s BMI changes as they mature. Growth patterns differ between boys and girls, so age and gender are taken into account when estimating whether a BMI is too low or too high. These differences are reflected in the presentation of the UK90 percentile chart where identification is reported<sup>72</sup> as:

- Underweight: 2nd centile for population monitoring and clinical assessment
- Overweight: 85th centile for population monitoring and 91st centile for clinical assessment
- Obese: 95th centile for population monitoring
- Severely obese: 98th centile for clinical assessment

Table 8: Child BMI classification definitions for population monitoring



## 4.1 Sources of data

The collection of childhood weight through the national childhood measurement programme [NCMP] is a mandated local authority responsibility. This is populated by the commissioned provider and analysis undertaken and published by Public Health England [PHE].

The annual Health in England survey which captures a range of behaviours is conducted and reported through NHS digital. Health episodes data [HES] is populated by hospital trusts but can include minor injury units and community hospitals data. Activity from these is collated and presented on PHE fingertips tools<sup>73</sup> and on NHS Digital which are in the public domain.

The biannual epidemiological oral health survey of 5 years olds is a longitudinal surveillance programme. The provider, trained to follow the specific survey protocols, populates the data fields which PHE analyse.

Local primary care activity is taken from the Kent integrated data set [KID].

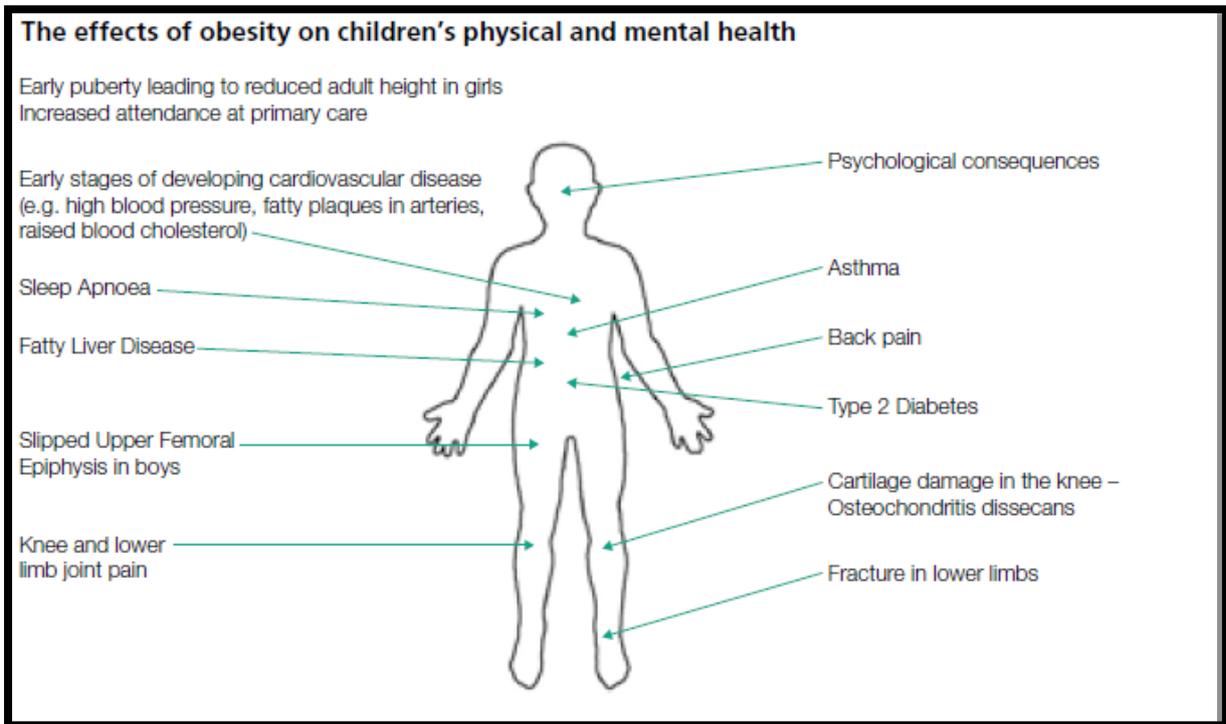
## 4.2 Epidemiological findings

Nationally, the prevalence of overweight and obesity (above the 85<sup>th</sup> UK National BMI centile for population monitoring<sup>74</sup>) among children aged 2 to 15 years, as measured by the Health Survey for England,<sup>75</sup> increased from 25% in 1995 to 34% in 2005 but since then the trend has decreased.

### 4.2.1 National overview

One study has estimated that there are 1.2 million children with clinical obesity and requiring a weight management service in England. Using the prevalence rate reported in this study, and crudely applying to the population of Kent, estimates some potential 40,370 children (0-18-year olds, inclusive) with clinical obesity. However, currently there are no services available to treat obesity in children and adolescents and their health implications related to obesity.<sup>76</sup> The health effects of obesity are well documented but less articulated to highlight the impacts and effects on child health.

Figure 5: Effects of obesity on children’s physical and mental health



Source: CMO report 2018

- In 2018, 13% of children aged between 2 and 15 were overweight and 15% were obese, with a combined prevalence of 28%. Overweight and obesity prevalence is different across boys and girls; 30% versus 26% respectively.
- In 2018 the Health Survey for England found that ‘children’s overweight and obesity was associated with that of their parents’<sup>77</sup>

Figure 6: Overview of childhood weight, England

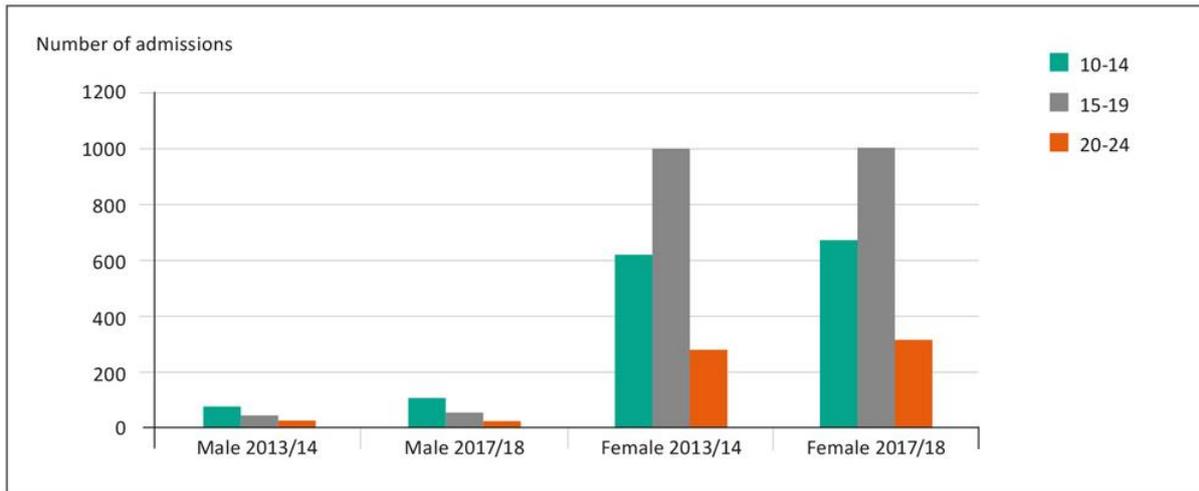


Source: PHE

The consequences of eating disorders amongst children and young people include physical, social and psychological often alongside other mental health needs such as depression or anxiety.

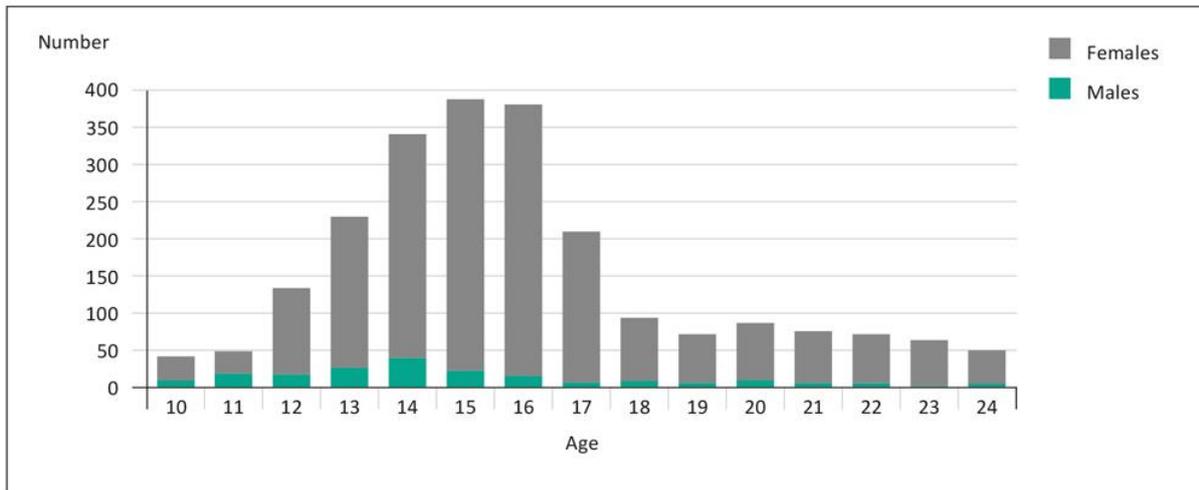
The following slides from the association for young people’s health report<sup>78</sup> suggests that there has been a small increase in hospital admissions amongst 10-14-year olds comparing 2013/14 to 2017/18. Anorexia accounts for most of the eating disorder admissions.

Table 9: Numbers of hospital admissions for eating disorders by age and gender, England 2013/14-2017/18



Source: Public Health England Fingertips: Hospital Episode Statistics 2017/18

Table 10: Number of hospital admissions for eating disorders amongst 10-24year olds by age and gender in England, 2017/18



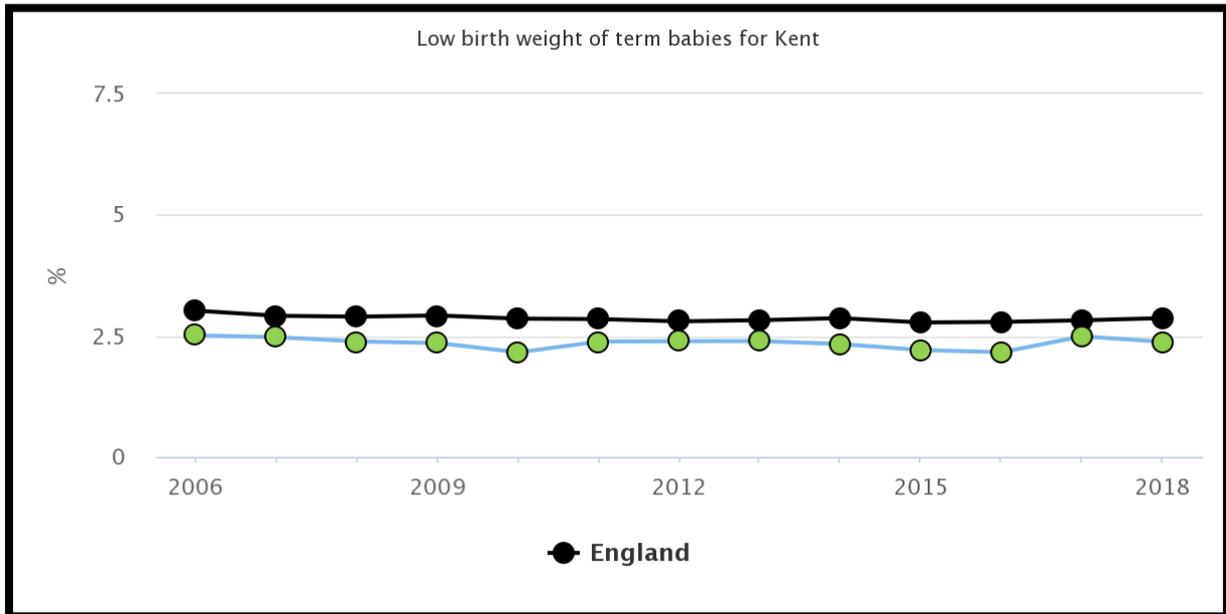
Source: Public Health England Fingertips: Hospital Episode Statistics 2017/18

### 4.3 Weight through childhood – a view of Kent

#### 4.3.1 Weight at birth

Birth weight trends are difficult to identify at a local level as some reporting of ONS analyse has changed. Term babies refers to those of 37 weeks and over gestation.

Table 11: The proportion of live births at 37 weeks and over gestation with a low birth weight, Kent



Source: PHE fingertips

Lower level analyse show that the trend in the number of live births at 37 weeks gestation and over with a low birth weight in Kent has been stable over a long period from 2006-2018. Importantly low birth weight per say is associated with increased risks of infant mortality, problems with childhood development and poorer health outcomes.

Further exploration identifies that the population with very low birth weights [under 1500grams] are consistently in Dartford, Gravesham Swanley CCG which maybe a reflection of differences in ethnicity, maternal age or deprivation.

One study<sup>79</sup> suggests that the birth weight in England and Wales has increased over recent decades which reflects the changes in age at which women give birth. This maybe a reflection of and contributing factor of higher BMI seen in more pregnant women and the associated risk of gestational diabetes.

Analysis of 2018 ONS birth weight suggests that the proportions of infants with a higher birth weight are seen in the South East compared to England with slightly higher proportions of birth weight greater than 4kg [8.8lb]. This is likely to reflect the socio demographics in the South East- but to note the weight not being recorded may skew these observations.

Table 12: Proportions of birth weight across weight ranges in England and South East, 2018

birth weight in grams	under 1500g	1500-1999g	2000-2499g	2500-2999g	3000-3499g	3500-3999g	4000-4499g	4500-4999g	5000g +	weight not stated
England	0.94%	1.26%	4.74%	16.62%	35.52%	28.73%	8.74%	1.15%	0.10%	2.16%
South East	0.84%	1.06%	4.11%	14.94%	34.88%	29.82%	9.56%	1.33%	0.11%	3.29%

Source: ONS

The first days of life have an emphasis on weight which helps in part to identify that a baby is thriving. This does not necessarily involve weighing the baby although facilities are available in children centres.

There is evidence<sup>80</sup> which suggests that breast feeding can help prevent excess weight and obesity with greatest protection for babies breast fed for 6 months. The prevalence of breastfeeding is recorded through collection of the feeding status at the 6-8 weeks mandated health visiting service contact. In 2018/19 the local analysis of the prevalence of infants fully or partially breastfed at 6-8 weeks in Kent was 44.7%. Further breastfeeding data is for Kent is included in appendix F.

A breastfed baby is less likely to overfeed but rather be satisfied and end feeding. Formula feeding guidance provided by the manufacturer includes volume of feed to be prepared by age. Over concentration of feed could lead to dehydration and excess weight. Recommendation is to formula feed on demand and not encourage the finishing of the bottle.<sup>81</sup> A study in Chicago<sup>82</sup> looked at the number of times a full term babies was overfed [more than 30 mls] formula feed on the first day of life and the weight of these children at age four. This study showed that 'overfeeding on the first day of life is an independent risk factor for the development of overweight and obesity.' This reflects the suggestion that early overfeeding damages the development of the brain to understand when the stomach is full.

#### 4.3.2 Weight in early childhood

Universal healthy weight interventions for 0-5's are provided by the Health Visiting Service. This offer is developing and includes health promotion messages given at the 5 mandated contacts information and support on infant feeding including introduction to solids, portion size and at other opportunities where they arise. Body mass index assessment forms part of the 2-2.5-year reviews, using the latest quarters available data for 2018/19 none of the districts achieve greater than 70% coverage.

A published study<sup>83</sup> by a local health visitor which explored use of a healthy weight discussion tool reiterates the challenges of addressing infant weight with families but illustrated its potential benefits to reduce weight centiles in overweight infants.

The CMO report 'Time to solve childhood obesity'<sup>84</sup> highlighted that **1 in 4 babies gain too much weight in the first 18 months of life**. This was identified through a study completed in 2016 but indicates the importance of supporting families to develop their awareness about

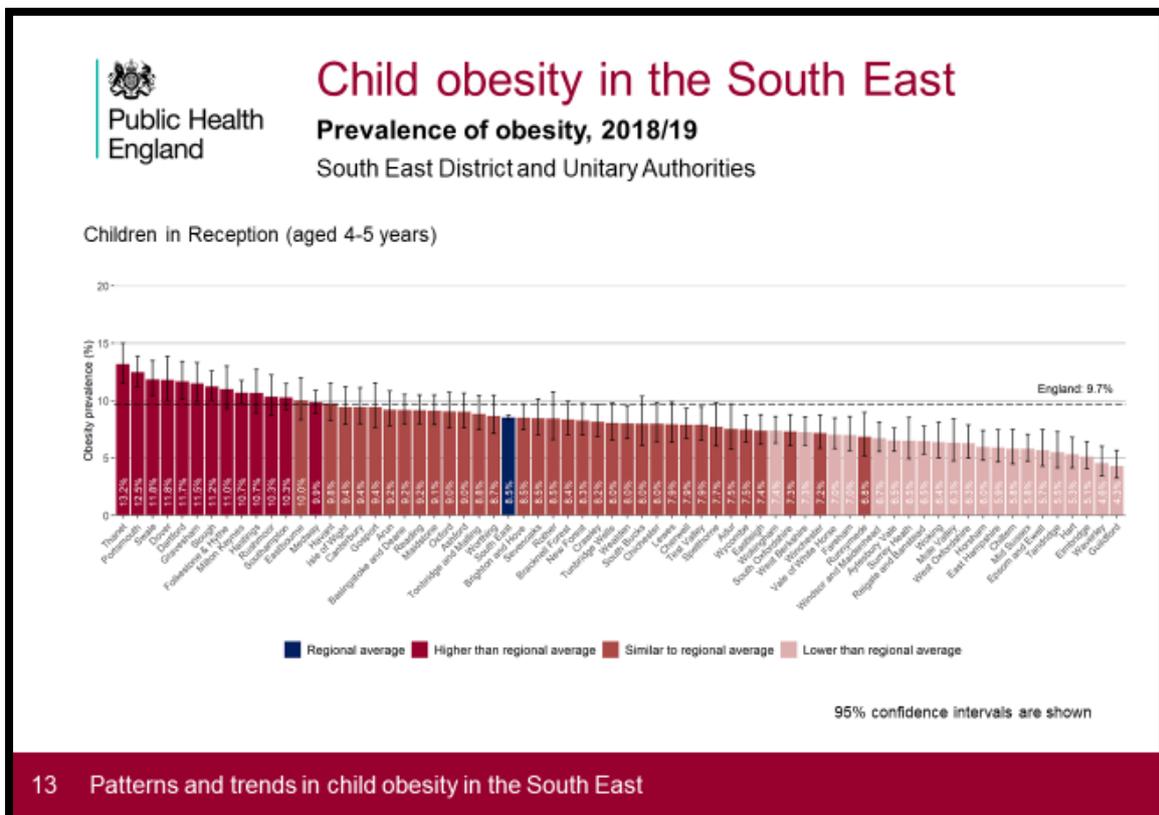
the role of food in early child development. A study<sup>85</sup> in the USA reports that over the last three decades there has been a 60% increase in the prevalence of obesity infants less than 2 years old.

The causes of childhood obesity are considered to be complex. Behaviours and response to food can be influenced in infancy which continue and are sustained through the life course.

The National Child Measurement Programme<sup>86</sup> annually measures height and weight to provide data on the levels of overweight and obesity in reception (ages 4-5) and year six (ages 10-11) across state-maintained schools in England.<sup>87 & 88</sup>

Analysis of the 2018/19 NCMP across the South East by PHE highlighted that the prevalence of obesity in Kent amongst year R in 2018/19 was first, third, fourth, fifth, and sixth highest in the districts of Thanet, Swale, Dover, Dartford and Gravesham respectively. These are statistically significant when compared to the England average. [Detail in Appendix C]

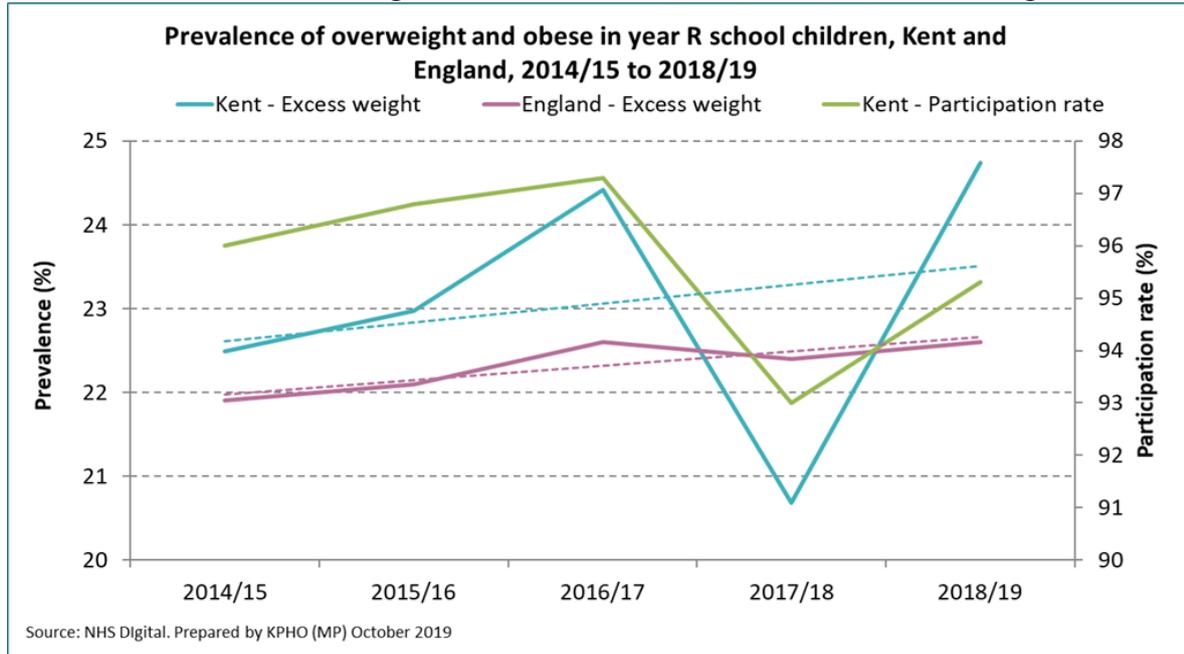
Table 13: Prevalence of child obesity amongst year R in the South East, 2018/19



Analysis of the 2018/19 NCMP across the South East by PHE highlighted that the prevalence of obesity in Kent amongst year 6 in 2018/19 was second and fifth highest in two local districts Dartford and Swale respectively. Of these compared to the England average Dartford is statistically significant. [detail in Appendix C]



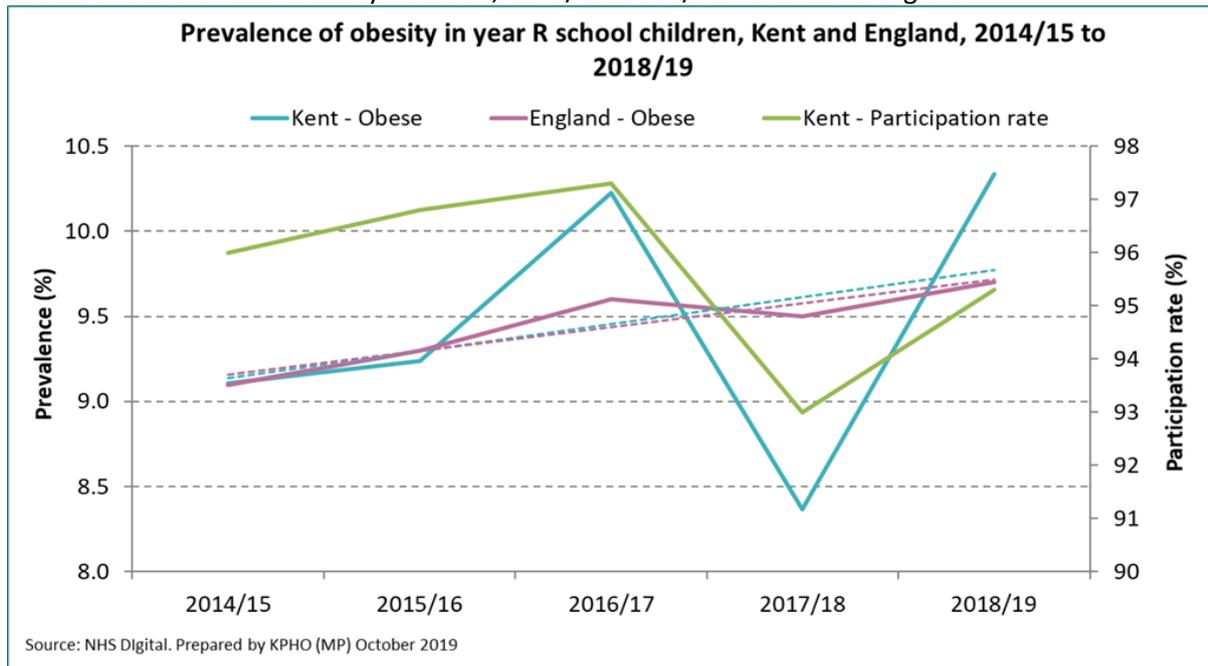
Table 15: Prevalence of overweight and obese in Year R, 2014/15-28/19, Kent and England



In Kent those in Year R measured as obese and overweight & obese **has increased significantly from 2017/18** and were also significantly higher than the England average. Using a slope calculation which is an indication of the average rate of change for each data point along the time series presented 2014/15 – 2018/19. This suggests that the annual rate of change in excess weight identified in year R children is 80, a 1.96% increase. This change is illustrated in the district level data for 2018/19 which identifies the prevalence of obesity in year R children in the South East by local authority to include five Kent districts in the highest six. These were: Dartford [11.7%], Dover [11.8%], Gravesham [11.5%], Swale [11.8%] and Thanet [13.2%].

The change is being driven by increasing obesity trends identified in the districts of Dartford, Folkstone & Hythe and Thanet and the increasing excess weight trend identified in the districts of Dover, Gravesham, Swale and Thanet amongst year R children.

Table 16: Prevalence of obesity in Year R, 2014/15- 2018/19 in Kent and England



In 2018/19 32.2% of Year 6 were measured as overweight or obese, in Kent compared to the England average of 34.3%. In the same year 18.4% of year 6 in Kent were measured as obese, compared to the England average 20.2% as shown below.

Table 17: Prevalence of overweight and obesity in Year 6, 2014/15- 2018/19 in Kent



Source: PHE fingertips

There have been no significant changes in obese or overweight year 6 in Kent for the past 5 years, with rates significantly lower than England, but significantly higher than the South East.

However, looking at **severe obesity only** amongst year 6 in Kent presents a different picture looking over the same time period. In 2018/19 the proportion of year 6 identified with severe obesity was 3.9%, higher than the South East average 3.2% and lower than the England average 4.4%. A slope calculation provides indication of the average rate of change for each data point along a time series, here identified as 2014/15 – 2018/19. Using the slope calculation shows that the average annual rate of increase in severe obesity amongst year 6 in Kent is 36 [5.5%].

A recent national annual report<sup>89</sup> also highlighted the increase in severe obesity amongst girls in reception and in boys and girls in year 6. A presentation<sup>90</sup> by PHE looking at patterns and trends in child obesity further illustrates the stark increase in difference by deprivation decile and thereby inequalities in obesity and severe obesity levels amongst children measured as part of the NCMP in 2018/19. Child severe obesity prevalence is closely associated with socioeconomic status. More deprived populations tend to have higher severe obesity prevalence.

This is illustrated in the next two tables.

Table 18: Severe obesity prevalence in England by deprivation decile 2018/19

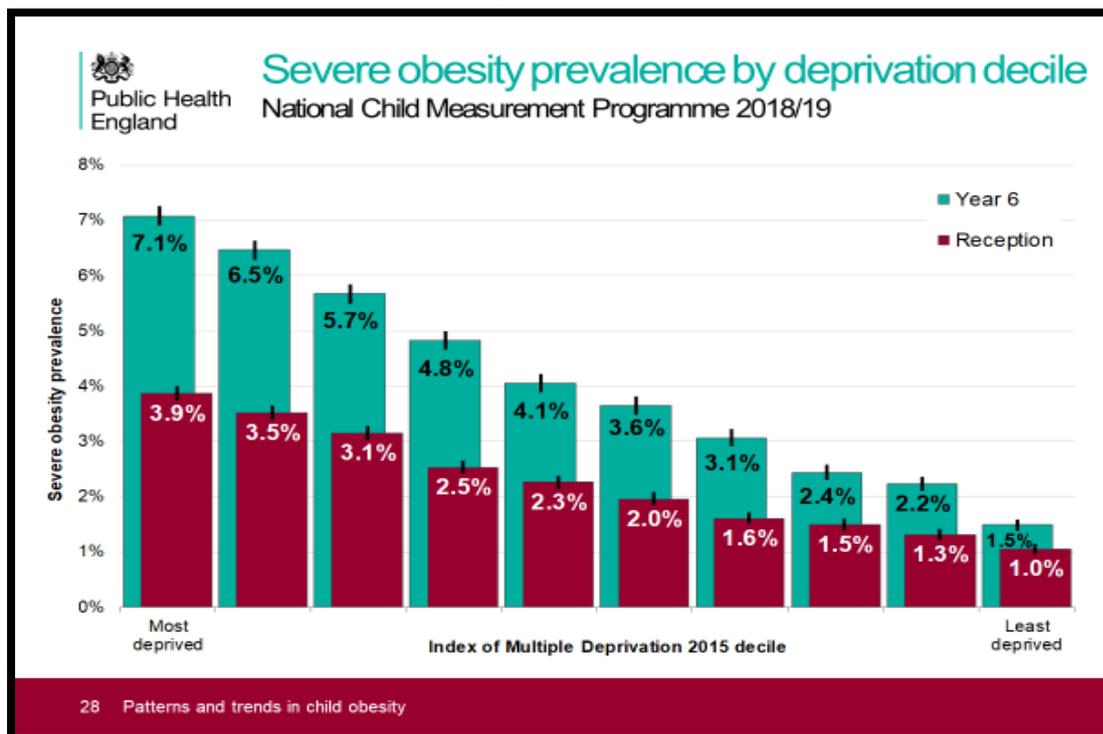
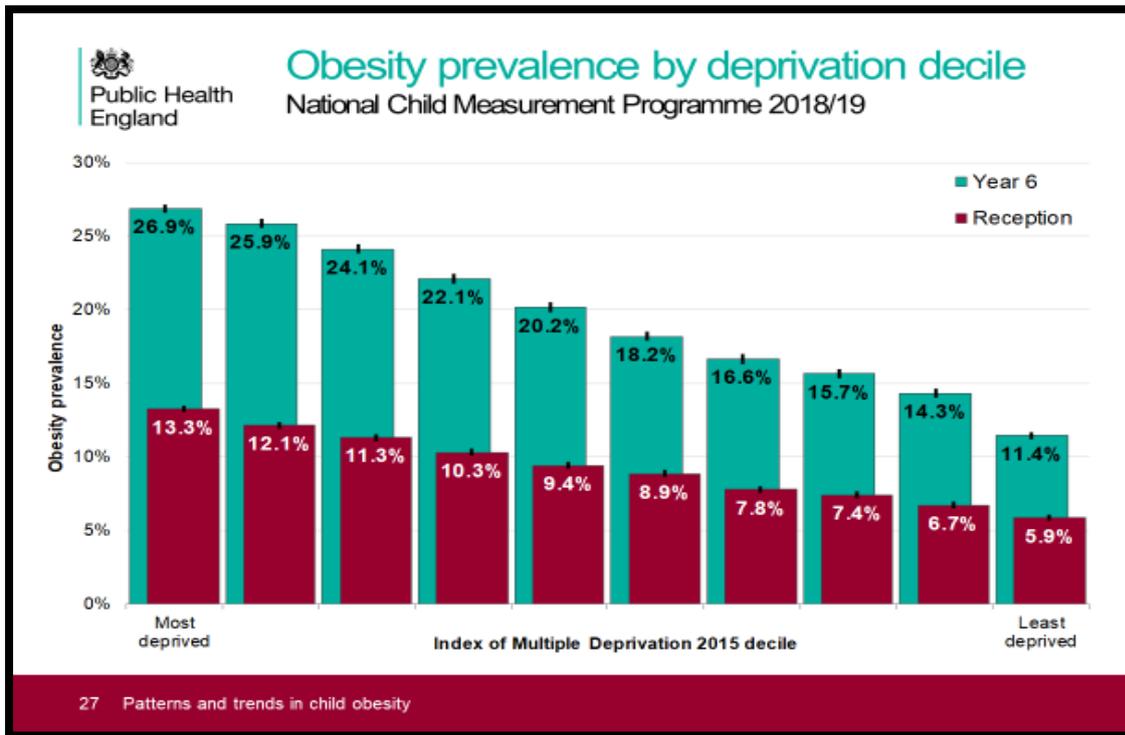


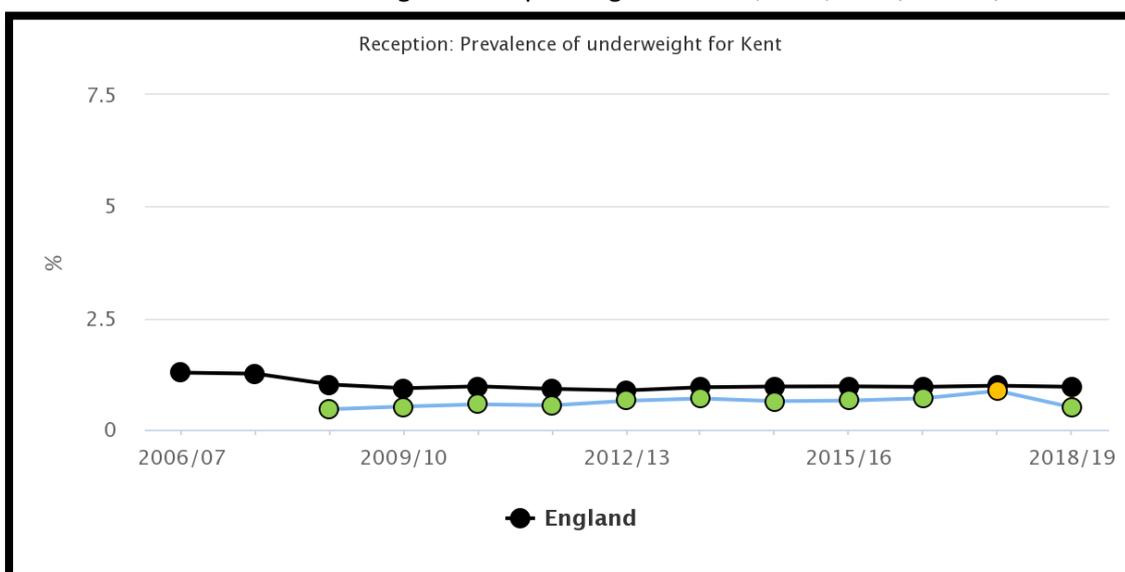
Table 19: Obesity prevalence in England by deprivation decile 2018/19



Nationally, the most deprived decile is more than double as likely to be obese in year R (13.3% vs 5.9%) and in year 6 (26.9% vs 11.4%). The gap between most and least deprived is widening over time.

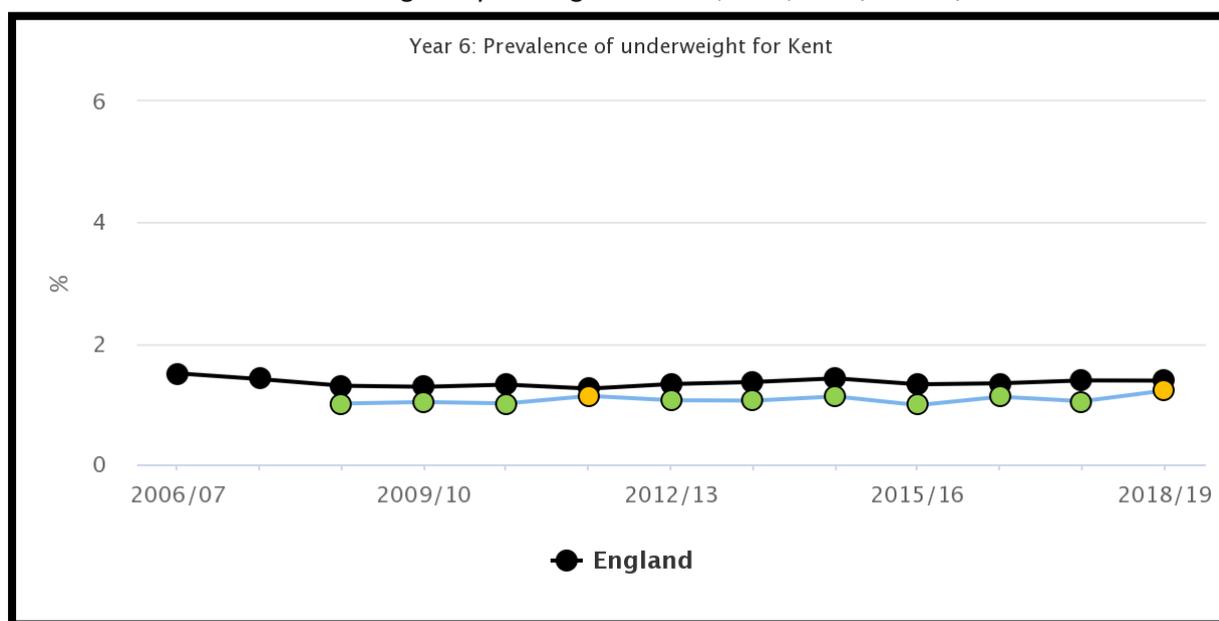
The NCMP can also show some insight into those children who are identified as underweight. As the next two tables illustrate, the proportions of the population in years R and year 6 identified as underweight over a ten-year period from 2008/9 to 2018/19 have remained stable.

Table 20: Prevalence of underweight in reception aged children, Kent, 2008/9-2018/19



Source: PHE fingertips

Table 21: Prevalence of underweight in year 6 aged children, Kent, 2008/9-2018/19



Source: PHE fingertips

#### 4.3.4 Weight in older children 12-18 years

In 2018, 16% of children aged between 11 and 15 years were overweight and 18% were obese, with a combined prevalence of 34%. Overweight and obesity prevalence in this age group is different across boys and girls; 36% versus 32% respectively.<sup>91</sup>

One UK study found the income gradient also influences adolescent overweight and obesity<sup>92</sup> Not articulated well through relationships and sex education [RSE] but puberty may begin earlier amongst those who are obese. This will affect further height growth.<sup>93</sup>

#### 4.4 Exploring the NCMP three-year average of excess weight and obesity

The three-year rolling average excess weight and obesity for Kent and England shows that Kent are lower than England with the exception of excess weight in reception where the proportion is higher.

Table 22: Three year rolling average, excess weight and obesity in year R and 6, 2016/17 – 2018/19

	Excess weight		Obese	
	Yr R	Yr 6	Yr R	Yr 6
<b>Kent</b>	23.3	9.7	32.8	18.6
<b>England</b>	22.5	9.6	34.3	20.1

Source: PHE fingertips

This highlights the differences in these two-year groups and the need to stop the tide of excess weight into year R is illustrated.

A more localised overview presented through a three-year rolling average of excess weight and obesity in year R and year 6 highlights a density and consistency of childhood weight. This is illustrated in the next table and shown through colour coding where red is much higher than the England average and amber slightly higher. Contrasts are observed in districts which align with variances in population in terms of deprivation and ethnicity.

Table 23: Three year rolling average, excess weight and obesity in years R and 6, by district 2016/17 – 2018/19

Three year rolling average	Ashford	Canterbury	Dartford	Dover	Folkestone & Hythe	Gravesham	Maidstone	Sevenoaks	Swale	Thanet	Tonbridge & Malling	Tunbridge Wells
obese children year R	Amber	Amber	Red	Red	Amber	Red	Green	Green	Amber	Red	Green	Green
excess weight children year R	Amber	Green	Red	Red	Amber	Red	Amber	Green	Red	Amber	Green	Green
obese children year 6	Green	Green	Red	Amber	Amber	Red	Green	Green	Amber	Red	Green	Green
excess weight children year 6	Green	Green	Red	Amber	Amber	Red	Green	Green	Amber	Red	Green	Green

Source: PHE fingertips

#### 4.4.1 Exploring the NCMP at a smaller geography

The figures in Appendix D provide another presentation of a three-year average from 2016/17-2018/19 of excess weight and obesity. This is shown amongst reception aged children and year 6 children through the NCMP by district middle layer super output areas [MSOA]. These illustrate the density of excess weight in smaller geographical areas, and the importance of understanding the needs in specific communities, which could be achieved by using place-based approach to solutions.

- 14 MSOAs with a red three-year rolling average of obese children in year R. These are in the districts of Dartford [3] Dover [1] Gravesham [4] Sevenoaks [1] Swale [2] Thanet [4].
- 21 MSOAs with a red three-year rolling average of excess weight children in year R. These are in the districts of Dartford [4] Dover [2] Folkestone & Hythe [3], Gravesham [2] Maidstone [1] Sevenoaks [2] Swale [1] Thanet [5].
- 19 MSOAs with a red three-year rolling average of obese children in year 6. These are in the districts of Canterbury [1] Dartford [4] Dover [3] Folkestone & Hythe [1] Gravesham [5] Swale [2] Thanet [1].

- 18 MSOAs with a red three-year rolling average of excess weight children in year 6. These are in the districts of Canterbury [1] Dartford [4] Dover [2] Folkestone & Hythe [3] Gravesham [8] Swale [1] Thanet [3].

Of the 186 MSOAs in Kent 39 [21%] MSOAs have a red three-year rolling average of obese or children with excess weight in year R or year 6. The known common factors amongst those districts with greater number of red MSOAs are higher levels of deprivation, higher proportion of populations of Asian and Black heritage and lower prevalence of breast feeding at 6–8 weeks.

Across Kent in both reception and year six, children living in the most deprived areas were more likely to be obese than those living in the least deprived areas. Exploration of the data through MSOAs provides illustration of the impact of deprivation but also reiterates that these may also reflect those areas with higher black and Asian communities.

Analysis<sup>94</sup> of the 2018/19 NCMP found children from reception and year six, in Kent of Black ethnic origin were more likely to be obese than their White classmates. This also included children of Asian origin in year six. That said, reception year children of White origin are more likely to be overweight than their Black and Asian classmates whereas year six children of Black origin are more likely to be overweight than their White classmates.

#### 4.5 Dental health

In 2018 PHE advised that ‘breastfeeding up to 12 months of age is associated with a decreased risk of tooth decay’<sup>95</sup>

Kent schools are involved in the PHE biannual 5-year-old oral epidemiological survey, which the following information is taken from. The first figure provides an overview of the findings from the last three surveys, showing that the oral health of 5-year-old children in Kent has declined. It has been shown ‘that children who are above a healthy weight are more likely to have dental decay in all deprivation categories.’<sup>96</sup>

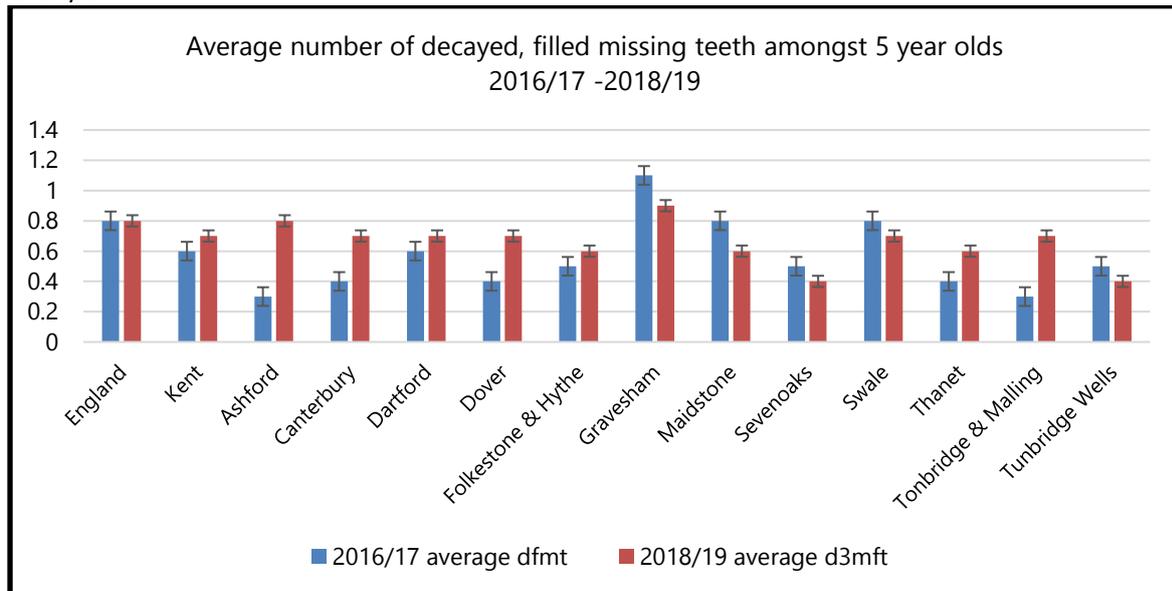
Table 24: The average number and proportion of children aged 5 years with decayed, filled, missing teeth, 2014/15- 2018/19 in Kent, South East and England

	Average d3mft			% d3mft >0			Mean d3mft (d3mft>0)		
	2014/15	2016/17	2018/19	2014/15	2016/17	2018/19	2014/15	2016/17	2018/19
<b>Kent</b>	0.5	0.6	0.7	16.2%	16.3%	19.9%	3.3	-	3.3
<b>South East</b>	0.6			20%	16.4%	17.6%	3.2	-	
<b>England</b>	0.8	0.8	0.8	24.7%	23.3%	23.3%	3.4	-	3.4

Source: PHE

Further exploration identifies that the average number of dentinally decayed filled missing teeth [dfmt] is lower in Gravesham than in 2016/17 but still the highest in Kent at 0.9 are higher than the South east and England average. This may be seen as a substantial proportion of plaque and or incisor caries.

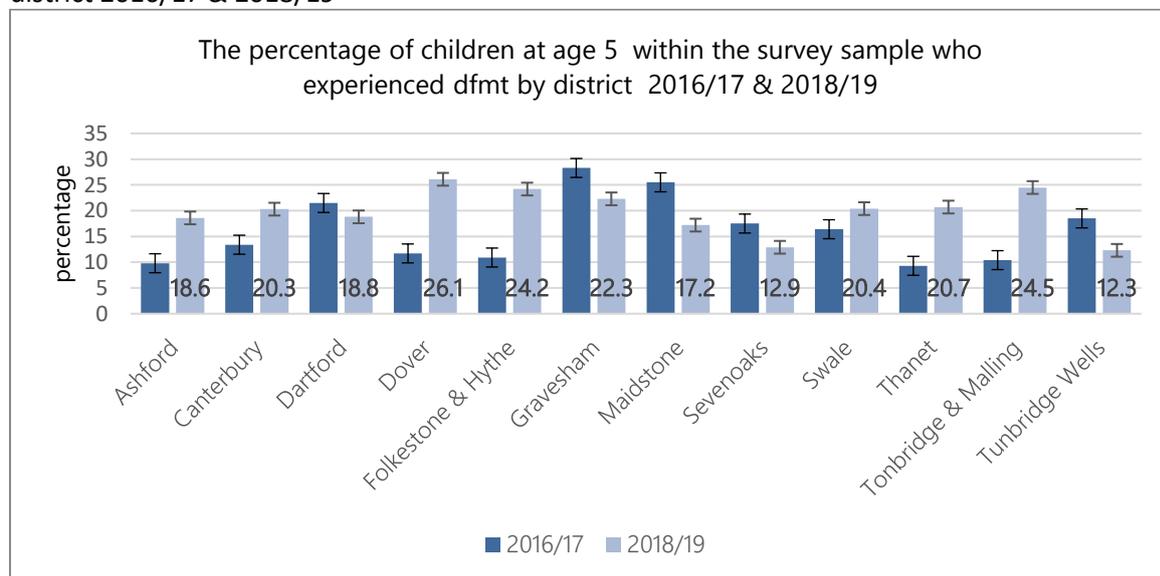
Table 25: Average number of decayed, filled missing teeth amongst 5-year-old children 2016/17 - 2018/19



Source: PHE

The next table shows that in 2018/19 Dover district has the highest proportion [26.1%] of individuals aged 5 years with decayed filled or missing teeth – Tonbridge and Malling [24.5%] Folkestone and Hythe 24.2%. The findings of these three districts may relate to access or perceived access to dentist services and requires further investigation.

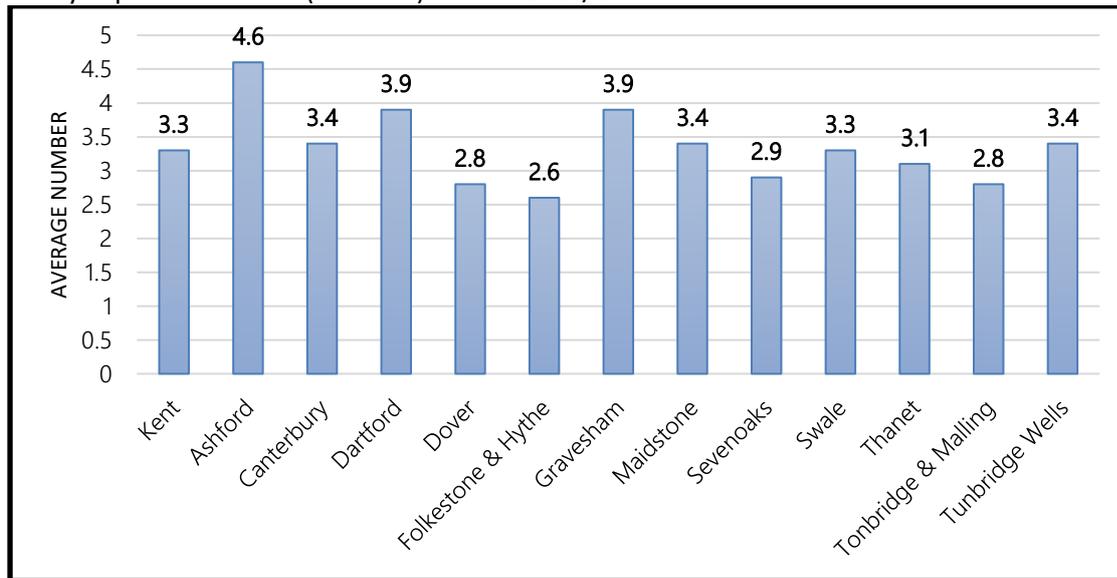
Table 26: The percentage of children at age 5 within the survey sample who experienced dfmt by district 2016/17 & 2018/19



Source: PHE

In 2018/19 the districts with the average number of dentinally decayed filled or missing teeth **amongst those with any decay experience** suggests that dental decay is of a greater concern in the districts of Ashford, Dartford and Gravesham. The areas with higher numbers of average dentinally decayed filled or missing teeth are not the same as those with the higher proportion of decayed filled missing teeth.

Table 27: Average number of dentinally decayed filled missing teeth amongst five-year olds with any decay experience d3mft (d3mft>0) in Kent 2018/19



Source: PHE

Dental decay left untreated can result in pain and discomfort on chewing, drinking and speaking, appearance and wellbeing potentially impacting on children’s growth & development and complicating pre-existing health conditions such as diabetes.

Figure 6: Three interventions for preventing tooth decay

Public Health England | Healthmatters Preventing tooth decay

**Top 3 interventions for preventing tooth decay**

- Reduce the consumption of foods and drinks that contain sugars**
- Brush teeth twice daily** with fluoride toothpaste (1350-1500ppm), last thing at night and at least on one other occasion. After brushing, spit don't rinse
- Take your child to the dentist when the first tooth erupts**, at about 6 months and then on a regular basis

Under 3s should use a smear of toothpaste

3 to 6 year olds should use a pea sized amount

Parents/carers should brush or supervise tooth brushing until their child is at least 7

## 4.6 Child weight and inequalities

Inequalities and child weight are documented throughout this document. To add the Health Survey for England found that children's overweight and obesity was associated with that of their parents.<sup>97</sup> Therefore it is important to note that across Kent it is estimated that 64.2% of those aged 18 and over are classified as overweight or obese, equating to nearly 800,000 persons resident within Kent in 2018/19 according to self-reported height and weight from the Active People Survey. This is higher than the England average 62.3%

A PHE report<sup>98</sup> on ethnic inequalities found that the proportion of children with excess weight was significantly higher in year 6 children in almost all minority ethnic groups compared to England as a whole.

Nationally, the ethnicities found to be obese are (year R Black 15.4%, mixed 10.1%, Asian 9.8%, White 9.3%) (Year 6 Black – 28.9%, Asian 25.2%, mixed 22.4%, White 18.4%).

The most recent 5-year-old dental survey found that the prevalence of experience of dental decay was higher in children from more deprived areas (34.3%) than in children from less deprived areas (13.7%). There was variation in prevalence of experience of dental decay by ethnic group and this was significantly higher in the 'Other Ethnic Groups' (44.3%) and the Asian/Asian British ethnic group (36.9%) than other ethnic groups.<sup>99</sup>

### Summary

- Be cognisant of the influences that lead to excess weight amongst infants under 2 years
- There is increased prevalence **of severe obesity** in reception and year 6 pupils in Kent
- Poor dental health observed in areas with increased weight
- Burden of unhealthy weight seen in specific areas

## | 5. Services and interventions: What works?

Much of the rhetoric and policy from government set out in 2016<sup>100</sup> to help reduce childhood obesity focused on: access to green spaces and green travel; curriculum change to increase physical activity; fiscal measures such as the tax on sugar in some foods and drinks with the expectation of providing healthier foods; improved information through clear labelling alongside empowering professionals to talk about obesity which in and of themselves will not illicit a change in the prevalence of childhood obesity. Publication in May 2020<sup>101</sup> saw further publication of guidance from government as action on child obesity.

It has been recommended that identification of infants at risk of developing childhood obesity is accompanied by appropriate evidence-based intervention. That said, despite the emergence of the need for prevention of overweight/obesity during infancy there is limited information about effective interventions, especially in a UK setting.<sup>102</sup>

A systematic review<sup>103</sup> of level 2 weight management programmes for children under the age of 11 years identified three features which were important for successful weight management. These were: how to rather than what to change, having the whole family committed and making peer social support possible.

HENRY is a family weight management programme with an evidence base<sup>104</sup> and one that has been commissioned in Kent previously to support families to live healthy lifestyles in the early years. The HENRY programme can work at a number of levels including equipping all the early years workforces with the skills, knowledge and confidence to have discussion with families about their lifestyle issues and/or provide more targeted support through group workshops for those families needing more intensive support.

NICE guidelines for child weight<sup>105</sup> are limited in their approach partly because there is not a robust evidence base. NICE<sup>106</sup> recommendation for tier 2 child weight management programmes is that commissioners consult with target populations to understand their service needs.

A pilot partnership family weight management programme for families of year 6 children in two districts in 2019 evaluated by the University of Kent illustrated the challenges of targeting a service without stigmatising others. There were improvements in the time children were engaged in moderate to vigorous physical activity [MVPA] which were accompanied by an increase in healthier eating habits. These included an overall increase in the consumption of both fruit and vegetables with a decrease in fried food, high-fat dairy and sugary snacks but to note the sample size was small. An overview from parents was that they recognised a need to reconsider family eating behaviours and address inactivity; but prior to engaging in the programme did not feel they had the knowledge and understanding on how to make changes.

New guidance from PHE<sup>107</sup> advises that behaviour change techniques (BCTs), should feature in approaches to support families with primary school-aged children (4-11 years) on a healthy weight journey.

Guidance about referral to tier 3 and 4 specialist weight management services have been produced by the British Obesity and Metabolic Surgery Society [MOBS] with the support of many other specialist organisations. This guidance<sup>108</sup> advises that GPs have discussion about referral for those children/adolescents with a 'BMI > 98th. centile and:

- Known comorbidities
- Potential red flags for possible secondary causes of obesity, including short stature for parents, kinky red hair and dysmorphisms
- Strong family history of cardiovascular disease or type 2 diabetes
- Syndromic obesity if not already under specialist care
- Refer those with more extreme obesity, regardless of other factors, generally regarded as BMI  $\geq$  99.86th. centile.'

Weight management support may be required at different levels depending on need. The table provides overview of the service provision in Kent.

Table 28: Tiers of weight management services for children and young people in Kent

	Model	Service	Commissioned by	Provided by	Identified gap
<b>Tier 1</b>	Prevention programme and campaigns	campaigns and messaging as outlined above	PHE Local authority	PHE and local authority	Lack of resource which responds to the needs of different populations
<b>Tier 2</b>	Lifestyle weight management for children and young people and their families	Follow up with families from the NCMP to provide a 12-week intervention tailored for individual families	Local authority	KCHFT – school public health workforce	No pathway for psychological support  Inconsistent offer  Poor evidence base for family weight management programmes
<b>Tier 3</b>	Specialist clinical services for those identified with a BMI > 98th. centile	None commissioned	CCG	-	No identified referral pathway for children/adolescent. Lack of psychological support and clinical intervention
<b>Tier 4</b>	Bariatric services	None commissioned	NHSE specialised commissioning	-	No pathway or service offer

## 5.1 Support available in Kent

### 5.1.1 Exclusive breast feeding for 6-8 weeks, 6 months

Expansion and extension of the breastfeeding support offered through the health visiting service has complimented the available third and private sector breastfeeding support. The need to work differently across and with the communities, strategically and operationally, where the rates of breast feeding are lower at the new born visit and 6- 8 weeks was identified through the infant feeding workshop held earlier this year.

Currently there is not consistent recording of infant feeding at 6 months of age. The infant feeding survey which was undertaken in 2010 found that 1% of mums were exclusively breastfeeding and 34% of mums breastfeeding their infant at 6 months of age.<sup>109</sup>

### 5.1.2 Healthy start vouchers

The government Healthy Start scheme, can provide vouchers to families who have children under 4 years of age or for pregnant women on low income. These vouchers can be exchanged for fresh or frozen fruit or vegetables and milk. This year online registration has been introduced and additional local promotion to ensure that those who are entitled to receive it access it.



### 5.1.3 Local campaign

Kent CCGs through Children and Young People's Mental Health Transformation Fund developed the Good Mental Health Matters Campaign. Two of the five key message of the campaign were Eat Well and Exercise. The campaign started with secondary aged children, through booklets being sent to homes across Kent, the development of a website and events to promote the key messages. The campaign developed curriculum resources for schools to deliver the key messages. The campaign continued to primary school children with the same key messages, reinforcing and delivering messaging about healthy eating and being active.

#### 5.1.4 National PHE campaigns

The specific change for life campaigns aim to reduce adult and childhood obesity simultaneously by making health a family issue. Across Kent, there were approximately 1,800 registrations to the Sugar Smart campaigns in 2016, this is in the context of a target population of 111,200 families with the youngest child under 10 years of age. This equated to 1.6% for Kent, this was higher than the national figure for registrations as a percentage of target families.

## 5.2 Interventions

In Kent a universal healthy weight intervention for 0-5s is provided by the Health Visiting Service. The Health visiting offer is developing and includes health promotion messages given at the 5 mandated contacts and at other opportunities. Children's Centres also promote healthy lifestyles messaging. The health visiting service also provide a brief targeted intervention for those children at an unhealthy weight using a healthy weight discussion tool, but this is not currently used systematically across the service.

At primary school age, the school health service offers support to schools to promote healthy school environments and increase children's knowledge about healthy lifestyles. The school health service offers a 1:1 package of care with families, using goal setting techniques to change behaviours. This is offered to children identified through the NCMP programme and through professional or self-referral. Despite the offer, there is very low take up. The reasons for this will be multifaceted. The offer is based on evidence-based principles but does not offer the full NICE recommended model for children who are at an unhealthy weight<sup>110 & 111</sup> or the key elements (group sessions and practical work) that have been identified as being associated with models that have achieved changes in behaviours.<sup>112</sup>

The School Health Service support also provides support for whole school approach in secondary schools. The service will engage with young people for a one to one if they are referred.

## 5.3 Specialist services

There is a specialist eating disorder service which is accessible for those aged 8 years and over which in Kent is provided by NEFLT. This service offers specialist care management, assessments and treatments which are outlined in NICE guidelines.<sup>113 & 114</sup>

There are no specialist weight management services commissioned in Kent.

## 5.4 Training programmes accessed by local stakeholders

Stakeholders	Programmes	Delivery method
Family weight management providers	How to have conversation about weight	face to face with school nursing team
Family weight management providers	MECC	
Pharmacists	CPPE package on weight	online with workbook
Pharmacists	Healthy living pharmacies	face to face and online
District leads	MEND	
District leads	Process and approach and motivational interviewing	Paediatric dieticians [hourly session]
Children centre/EY staff	Raising the issue of weight	½ day
Children centre/EY staff	Healthy tots course	
Children centre/EY staff	Food champions	series of events
Children centre/EY staff	HENRY – family weight mgt	two-day course
Health visiting team	no consistent specific programme	
School public health workforce	no consistent specific programme	

### Chapter summary

- The uptake of available interventions and support is low
- There are no specialist services available for those with severe obesity
- There are no psychological services to support any excess weight management intervention
- The evidence base for level 2 support and interventions is limited but behaviour change techniques are recommended

## | 6. Consultation

The information for this section has come from two main sources. These include stakeholder interviews and external insights work.

### 6.1 Views of stakeholders

Public Health undertook stakeholder insights work with service providers from January – February 2020. Methods used were paired and individual interviews.

Themes developed which can help inform future activity but also reflect the need for a whole systems approach. These related to:

- Ineffectiveness of and negative connotations of messaging on childhood weight
- Drivers of food choices

Currently the messaging to halt the increase in children with unhealthy weight is not effective. It assumes motivation and does not reach deprived communities locally.

---

*They're not fat, they'll grow out of it*

---

Overall presentation of messaging on childhood weight was considered to be negative and conversations avoided as emphasis on healthy lifestyles. Stakeholders believed that messaging should be universal, but accessible to different communities, include mental health and start in pregnancy. There was some but also inconsistent messaging on portion size or snacking. Children's centres identified as being the dominant presenter of messaging. The drivers of food choice are affordability, or perceptions of affordability, but convenience greater. Lack of time is perceived and actual. Agreed that limitation or variety does drive food choices and that there is often a link between what parent eats and choice, routines and patterns of eating.

---

*People don't see the link between foods eaten  
and behaviour for example high sugar diet*

---

Broad awareness of the physical, emotional and psychological impact on child health from excess weight. Outcomes for those with an unhealthy weight focused on education attainment, mental wellbeing, become inactive, and life expectancy.

## 6.2 External insights

Public health commissioned insights work with parents and grandparents in specific geographical. Initial activity was undertaken from February – March 17<sup>th</sup>, 2020 with 160 individuals through a mixed method approach. This included an online survey, focus groups and in-depth interviews. This facilitated exploration of health eating, cultural influences on diets and interventions to better support health eating. An additional 29 in depth interviews were conducted in August 2020 exploring further from the initial findings. The report is in appendix H.

These insights found that in general, people have strong and informed views about healthy eating. There is a large and varied range of diets and this is heavily affected by people's ethnic backgrounds.

---

*My husband doesn't care. He would rather have unhealthy Indian food than the healthy diverse foods*

---

People have less well-formed ideas about healthy weight, and in general it is not seen to be an issue of significant personal relevance. Fundamentally, participants showed they cared about their families. They want to provide good quality food to their family, but also try to balance this with a yearning for their home comforts and cultural roots. There was genuine desire shown by participants to do the best thing possible for their families and messages about healthy eating were seen to be important, if currently not always relevant to non-white communities.

---

*We need ethnic specific examples when suggesting alternative meals, drinks, salt, sugar, options*

---

Culture has an important role in shaping people's relationship with food and it impacts on the choice of food type, food preparation, quantities, timings of meals, rewards and more. Food is also used as a means of reinforcing cultural and ethnic identity – so for some people, particularly older people, is it very symbolic and for many it is important to hold onto it. For others though, particularly younger people, this may be precisely why they want to move on from it and are keen to adopt the influences of 'British' food and eating habits. Cultural and religious celebrations are a focal point for eating and socialising. They are often occasions associated with significant over-eating and the consumption of more unhealthy options: higher fat, sugar and salt dishes.

---

*Reducing sugar consumption is required within the Caribbean community but the messages are not getting through because they are not made relevant to people that look like us and who eat our types of food.*

---

Carbohydrate is a significant part of diets and demonstrated portion sizes in terms of handfuls indicated 2-3 handfuls of carbohydrate are eaten at each meal. Dairy products are not widely eaten which may contribute to the lack of Vitamin D in diets which is a concern in pregnancy and breast-feeding women. There is an actual or perceived higher intolerance of dairy products amongst some ethnic groups which may help explain the low consumption in diets.

The desire to see the establishment, growth and sustainability of peer networks to bring people together around different aspects of healthy eating was emphasised. It was felt this 'food plus' model could offer huge potential when it came to influencing people's behaviour because while it would seek to increase skills and confidence around healthy food, it would address the wider role of food vis a vis identity and community, providing participants with the chance to make friends and build their sense of connection in their community.

#### **Summary**

- How messages are framed is as important as the message and these need to reflect the needs of different communities
- Nutritional balance is different with emphasis on carbohydrate consumption and much less on dairy amongst so ethnic groups
- Recognition and understanding of the impact of excess weight in children is not universal
- The communities want to support and build awareness

## | 7. Conclusion

The need for systematic processes which prevent excess childhood weight before the age of 18 months are imperative if the continuing increase in observed childhood weight amongst reception aged children in Kent is to be halted.

The identification of severe obesity in children as young as 4-5 years is alarming but the lack of appropriate commissioned specialist services is unacceptable. The prevalence of obesity and severe obesity are higher in year 6 and similarly there are no specialist services for these children.

The burden of obesity is seen in deprived communities and amongst black African and Asian populations. The factors which exacerbate the impacts amongst deprived communities are presented through this health needs assessment. Resource and efforts to eradicate childhood excess weight need to be targeted and co-produced.

Improving understanding about the impact of foods and body mass index on future health from the foetus in pregnancy is essential. Food should not just be seen as a commodity but also a determinant of health- yours and your children's.

## Appendix A: Adult weight

### Maternal weight

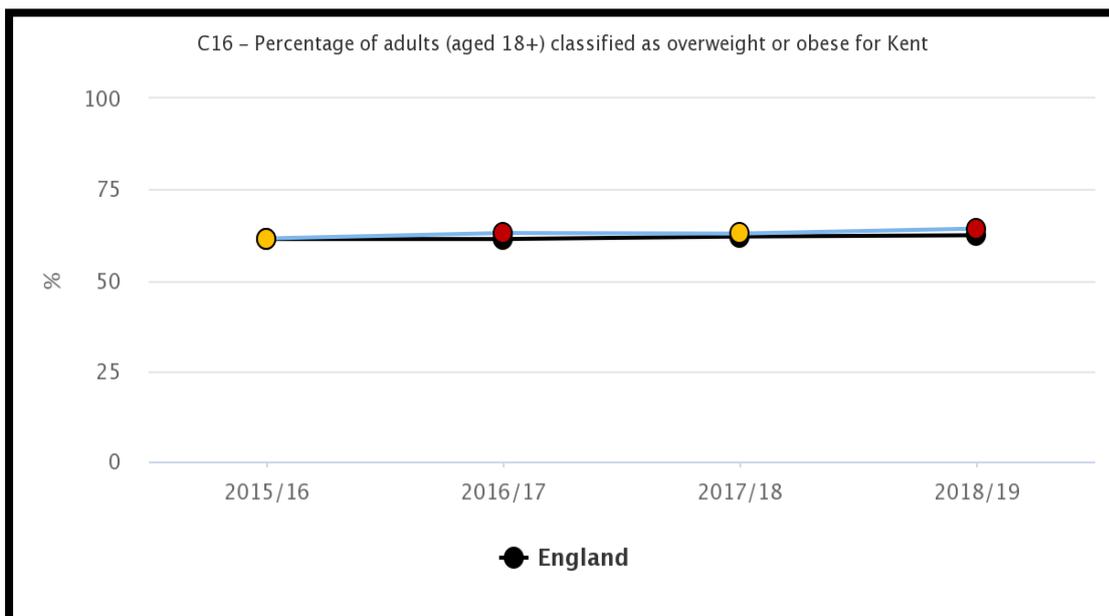
Figure A: Maternal body mass index [BMI] at antenatal booking appointment 2018/2019

Trust - Persons from any CCG	Underweight	Normal	Overweight	Obese	Unknown
DARTFORD AND GRAVESHAM NHS TRUST	2%	44.%	29%	23%	1%
EAST KENT HOSPITALS UNIVERSITY NHS FOUNDATION TRUST	2%	43%	25%	26%	4%
MAIDSTONE AND TUNBRIDGE WELLS NHS TRUST	2%	51%	27%	19%	1%
MEDWAY NHS FOUNDATION TRUST	2%	41%	28%	28%	1%

Source: NHS digital

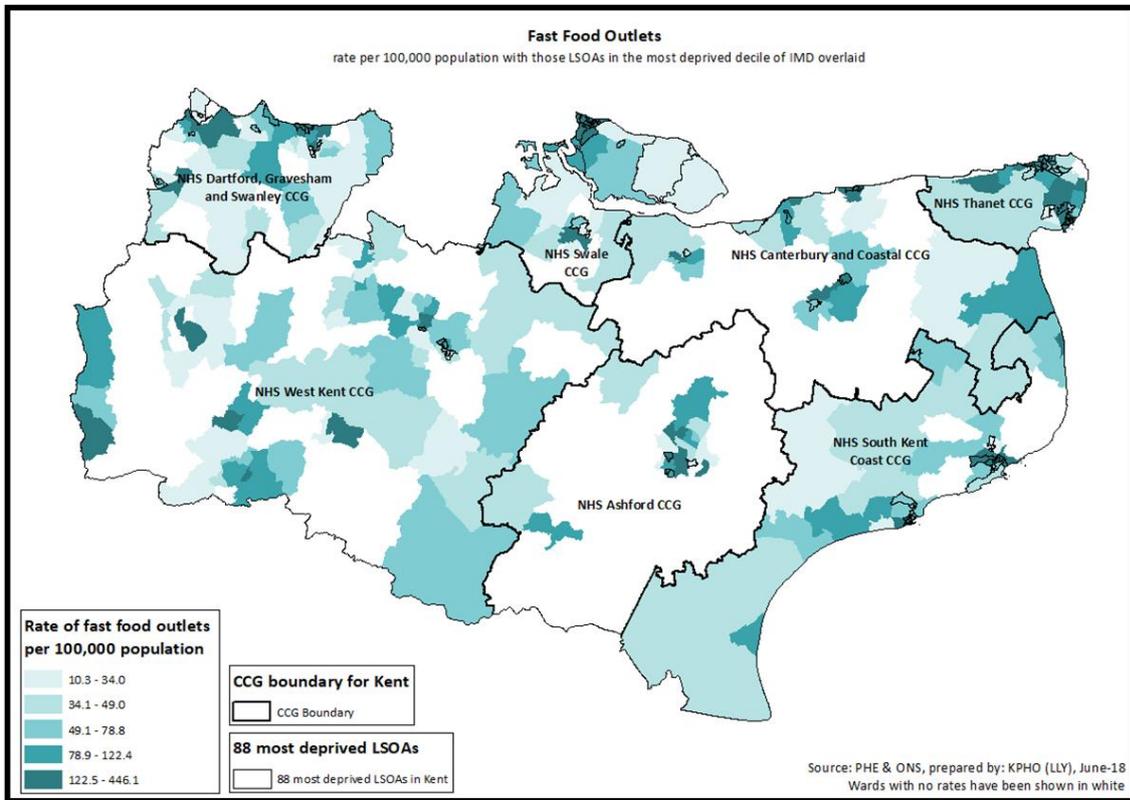
### Males and females aged 18 years and over

Figure B: Proportion of adults aged 18 and over classified as overweight or obese, Kent 2015/16- 2018/19



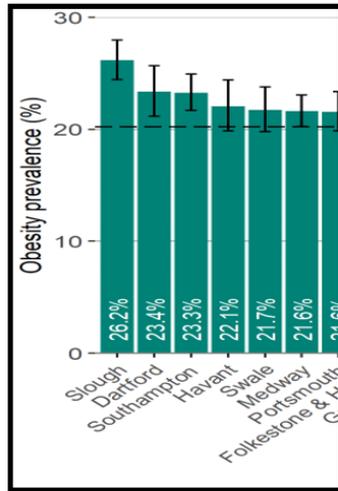
Source: PHE fingertips

## Appendix B: Fast food outlets



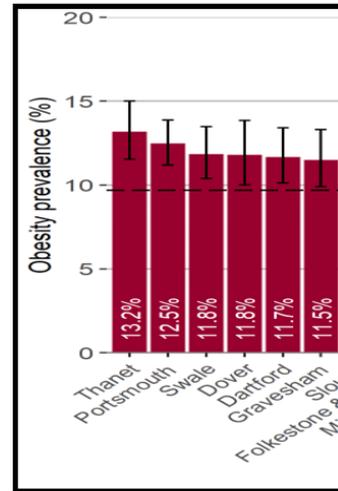
## Appendix C: Prevalence of obesity 2018/19 by district in the South East

Table A: Prevalence of obesity in year 6 2018/19 amongst districts higher than the England average



Source: PHE

Table B: Prevalence of obesity in reception 2018/19 amongst districts statistically higher than the England average



## | Appendix D: Medications which might impact on weight gain

The types of medication that can cause weight gain are mainly in the following classes:

- Drugs used in diabetes
- Antipsychotics
- Antidepressants
- Epilepsy medicines
- Steroid hormones (e.g. prednisolone and contraceptives)
- Antihypertensives

(NB: some medicines in these classes will cause weight loss.)

The mechanism of weight gain is varied depending on medicines type. Weight gain can be caused by:

- Stimulation of appetite
- A decrease in body metabolism
- Alteration in how the body stores and absorbs sugars and minerals
- By causing tiredness and shortness of breath and thus decrease in exercise.
- Retention of water

## Appendix E: Three-year average NCMP measurements at MSOA level

### Ashford district

Compared with benchmark: Better Similar Worse Not compared \* a note is attached to the value, hover over to see more details

Recent trends: — Could not be calculated → No significant change ↑ Increasing / Getting worse ↑ Increasing / Getting better ↓ Decreasing / Getting worse ↓ Decreasing / Getting better ↑ Increasing ↓ Decreasing

Display Values Trends Values & Trends

Indicator	Period	England	Ashford	Ashford 001	Ashford 002	Ashford 003	Ashford 004	Ashford 005	Ashford 006	Ashford 007	Ashford 008	Ashford 009	Ashford 010	Ashford 011	Ashford 012	Ashford 013	Ashford
Obese children Reception Year, three year average	2016/17 -18/19	9.6	9.4	6.2	8.4	5.2	11.8	10.3	11.7	11.5	9.2	7.7	8.0	10.4	9.8	9.9	9.9
Children with excess weight Reception Year, three year average	2016/17 -18/19	22.5	23.1	15.4	25.2	20.8	24.1	24.6	25.2	22.3	25.1	22.4	18.9	24.3	24.4	25.5	27.8
Obese children Year 6, three year average	2016/17 -18/19	20.1	17.6	15.5	13.5	14.1	19.0	18.7	19.1	19.7	22.4	19.7	13.2	17.8	17.3	13.9	14.1
Children with excess weight Year 6, three year average	2016/17 -18/19	34.3	31.7	26.8	29.6	26.9	33.9	34.8	31.4	38.7	37.9	31.8	28.5	25.2	32.0	25.3	26.8

### Canterbury district

Indicator	Period	England	Canterbury	Canterbury 001	Canterbury 002	Canterbury 003	Canterbury 004	Canterbury 005	Canterbury 006	Canterbury 007	Canterbury 008	Canterbury 009	Canterbury 010	Canterbury 011	Canterbury 012	Canterbury 013	Canterbury 014	Canterbury 016	Canterbury 017	Canterbury 018	Canterbury 0	Canterbury
Obese children Reception Year, three year average	2016/17 -18/19	9.6	9.0	11.4	9.0	9.2	10.3	8.3	7.5	6.7	6.8	10.0	10.1	12.7	3.6	9.1	11.1	6.5	8.3	7.4	10.1	9.5
Children with excess weight Reception Year, three year average	2016/17 -18/19	22.5	20.5	24.8	19.7	18.4	22.7	18.1	18.1	15.5	19.0	24.2	20.7	24.9	10.9	18.3	27.3	20.6	20.9	17.4	21.1	20.3
Obese children Year 6, three year average	2016/17 -18/19	20.1	17.7	22.0	20.2	17.0	15.5	9.2	15.7	15.7	20.5	18.6	16.9	21.4	10.4	18.4	29.0	17.3	14.2	14.7	25.7	13.9
Children with excess weight Year 6, three year average	2016/17 -18/19	34.3	31.3	35.1	35.8	32.3	28.7	18.8	28.7	29.0	33.7	30.0	34.9	33.2	26.6	30.7	42.3	32.1	26.3	25.8	41.3	32.2

### Dartford district

Indicator	Period	England	Dartford	Dartford 001	Dartford 002	Dartford 003	Dartford 004	Dartford 005	Dartford 006	Dartford 007	Dartford 008	Dartford 009	Dartford 010	Dartford 011	Dartford 012	Dartford
Obese children Reception Year, three year average	2016/17 -18/19	9.6	11.3	13.5	11.0	11.5	12.6	10.0	12.4	9.5	11.9	9.3	8.9	9.8	14.5	5.6
Children with excess weight Reception Year, three year average	2016/17 -18/19	22.5	24.8	28.3	23.8	24.4	27.1	23.1	28.7	22.2	20.1	26.0	16.7	25.0	28.5	19.4
Obese children Year 6, three year average	2016/17 -18/19	20.1	22.5	25.9	22.1	24.8	26.2	24.1	23.3	16.9	20.5	26.2	14.0	18.7	22.6	19.8
Children with excess weight Year 6, three year average	2016/17 -18/19	34.3	37.4	40.6	34.4	38.6	41.5	40.5	42.6	33.4	35.2	38.8	27.6	34.8	38.5	33.1

### Dover district

Indicator	Period	England	Dover	Dover 001	Dover 002	Dover 003	Dover 004	Dover 005	Dover 006	Dover 007	Dover 008	Dover 009	Dover 010	Dover 011	Dover 012	Dover 013	Dover
Obese children Reception Year, three year average	2016/17 -18/19	9.6	10.9	6.0	12.6	6.2	5.8	10.2	11.9	11.3	9.3	4.7	9.2	14.6	11.4	12.3	11.3
Children with excess weight Reception Year, three year average	2016/17 -18/19	22.5	25.9	19.6	29.1	15.9	14.2	26.0	28.9	26.7	27.3	21.1	27.3	29.6	26.9	26.1	24.7
Obese children Year 6, three year average	2016/17 -18/19	20.1	20.3	13.8	18.4	18.5	17.3	21.4	18.6	16.4	17.5	12.3	25.4	22.5	26.0	26.7	16.4
Children with excess weight Year 6, three year average	2016/17 -18/19	34.3	34.2	27.6	30.4	34.8	28.3	39.1	30.4	32.8	26.5	27.7	39.1	35.0	40.1	42.2	32.2

### Folkestone and Hythe district

Indicator	Period	England	Folkestone & Hythe	Folkestone & Hythe 001	Folkestone & Hythe 002	Folkestone & Hythe 003	Folkestone & Hythe 004	Folkestone & Hythe 005	Folkestone & Hythe 006	Folkestone & Hythe 008	Folkestone & Hythe 009	Folkestone & Hythe 010	Folkestone & Hythe 011	Folkestone & Hythe 012	Folkestone & Hythe	Folkestone & Hythe	Folkes
Obese children Reception Year, three year average	2016/17 -18/19	9.6	9.9	*	11.4	12.5	9.1	8.8	6.8	*	11.5	11.7	10.3	10.4	12.2	11.3	10.3
Children with excess weight Reception Year, three year average	2016/17 -18/19	22.5	24.0	20.6	21.1	29.9	27.8	22.2	18.4	16.0	21.8	26.9	26.3	29.3	27.7	26.3	19.3
Obese children Year 6, three year average	2016/17 -18/19	20.1	20.7	18.2	18.7	21.9	28.7	25.3	17.2	14.4	16.9	25.2	16.9	14.2	20.9	26.7	17.3
Children with excess weight Year 6, three year average	2016/17 -18/19	34.3	34.2	30.0	31.8	38.0	40.6	38.4	31.4	27.3	30.9	40.9	30.9	28.4	30.8	38.9	35.5

### Gravesham district

Indicator	Period	England	Gravesham	Gravesham 001	Gravesham 002	Gravesham 003	Gravesham 004	Gravesham 005	Gravesham 006	Gravesham 007	Gravesham 008	Gravesham 009	Gravesham 010	Gravesham 011	Gravesham 0	Graves
Obese children Reception Year, three year average	2016/17 -18/19	9.6	11.6	13.2	14.7	13.9	10.6	10.3	8.5	10.0	12.3	10.9	8.1	12.8	7.0	12.7
Children with excess weight Reception Year, three year average	2016/17 -18/19	22.5	26.1	30.7	24.9	28.9	22.8	22.9	21.1	31.3	24.6	28.5	21.5	25.7	24.2	27.0
Obese children Year 6, three year average	2016/17 -18/19	20.1	22.3	28.9	26.5	25.3	26.3	16.9	21.9	23.5	16.8	20.7	15.2	27.1	17.3	10.5
Children with excess weight Year 6, three year average	2016/17 -18/19	34.3	37.6	43.8	40.7	38.7	42.3	32.4	41.1	37.2	30.7	36.7	28.7	43.4	33.6	27.7

### Maidstone district

Indicator	Period	England	Maidstone	Maidstone 001	Maidstone 002	Maidstone 003	Maidstone 004	Maidstone 005	Maidstone 006	Maidstone 007	Maidstone 008	Maidstone 009	Maidstone 010	Maidstone 011	Maidstone 012	Maidstone 013	Maidstone 014	Maidstone 015	Maidstone 016	Maidstone 017	Maidstone 01	Maidstone
Obese children Reception Year, three year average	2016/17 -18/19	9.6	8.3	6.6	6.2	7.7	11.7	6.2	9.0	7.1	9.1	9.5	10.3	6.6	5.8	10.8	4.8	9.6	3.4	6.0	6.2	11.5
Children with excess weight Reception Year, three year average	2016/17 -18/19	22.5	21.8	20.8	16.7	22.2	26.8	15.8	22.9	22.0	22.2	23.2	24.2	19.9	19.2	24.9	18.7	26.8	14.8	16.9	19.9	24.5
Obese children Year 6, three year average	2016/17 -18/19	20.1	17.3	20.7	17.8	12.8	19.4	12.1	20.1	9.7	19.1	21.9	23.0	15.7	11.8	23.0	12.9	16.8	15.0	16.0	17.3	15.1
Children with excess weight Year 6, three year average	2016/17 -18/19	34.3	32.0	37.5	30.9	27.4	35.4	22.3	35.6	25.0	37.3	36.8	37.0	29.4	25.3	38.4	25.3	33.5	31.0	30.1	29.4	29.2

### Sevenoaks district

Indicator	Period	England	Sevenoaks	Sevenoaks 001	Sevenoaks 002	Sevenoaks 003	Sevenoaks 004	Sevenoaks 005	Sevenoaks 007	Sevenoaks 008	Sevenoaks 009	Sevenoaks 010	Sevenoaks 011	Sevenoaks 012	Sevenoaks 013	Sevenoaks 014	Sevenoaks 0	Seven
Obese children Reception Year, three year average	2016/17 -18/19	9.6	8.9	9.6	12.0	14.8	9.1	10.2	8.2	8.0	7.8	8.0	4.9	8.4	7.5	8.2	10.5	7.3
Children with excess weight Reception Year, three year average	2016/17 -18/19	22.5	22.2	31.4	28.1	25.6	24.2	22.8	21.6	21.8	19.5	19.3	16.0	17.7	23.0	20.8	23.3	20.4
Obese children Year 6, three year average	2016/17 -18/19	20.1	14.9	17.0	23.5	23.0	16.8	17.8	17.1	13.7	12.2	10.6	4.7	9.0	12.5	19.5	9.7	20.6
Children with excess weight Year 6, three year average	2016/17 -18/19	34.3	28.0	34.5	36.9	35.6	32.9	32.2	27.4	25.8	25.2	21.2	16.9	22.9	21.9	32.4	25.8	35.8

### Swale district

Indicator	Period	England	Swale	Swale 001	Swale 002	Swale 003	Swale 004	Swale 005	Swale 006	Swale 007	Swale 008	Swale 009	Swale 010	Swale 011	Swale 012	Swale 013	Swale 014	Swale 015	Swale 016	Swale
Obese children Reception Year, three year average	2016/17 -18/19	9.6	10.2	12.9	10.2	5.5	9.7	15.5	13.3	9.9	9.5	10.5	9.1	11.5	8.2	7.7	11.4	8.8	8.3	8.4
Children with excess weight Reception Year, three year average	2016/17 -18/19	22.5	23.8	29.5	23.6	23.4	24.6	26.6	26.1	21.7	23.6	25.5	22.2	24.0	23.4	17.7	24.3	20.1	24.6	22.8
Obese children Year 6, three year average	2016/17 -18/19	20.1	20.6	25.8	21.5	21.2	23.5	27.3	29.5	19.0	21.2	20.8	24.6	22.4	18.5	11.2	13.8	18.0	24.7	11.0
Children with excess weight Year 6, three year average	2016/17 -18/19	34.3	34.4	39.0	33.6	34.4	36.4	38.9	45.5	32.5	38.0	34.5	39.6	34.4	31.7	25.3	30.1	30.6	38.3	29.1

### Thanet district

Indicator	Period	England	Thanet	Thanet 001	Thanet 002	Thanet 003	Thanet 004	Thanet 005	Thanet 006	Thanet 007	Thanet 008	Thanet 009	Thanet 010	Thanet 011	Thanet 012	Thanet 013	Thanet 014	Thanet 015	Thanet 016	Thanet
Obese children Reception Year, three year average	2016/17 -18/19	9.6	11.0	12.5	10.2	13.0	11.6	8.7	13.9	10.6	10.8	13.0	5.0	9.6	7.9	11.5	7.4	11.6	13.4	10.6
Children with excess weight Reception Year, three year average	2016/17 -18/19	22.5	25.9	24.4	24.0	29.0	29.9	19.4	29.1	25.2	25.8	26.5	15.5	24.2	27.2	27.6	26.6	25.3	29.1	24.9
Obese children Year 6, three year average	2016/17 -18/19	20.1	20.8	25.5	20.8	23.8	17.5	19.2	24.1	18.8	16.8	16.1	14.3	23.1	19.6	23.3	16.4	22.0	21.5	22.6
Children with excess weight Year 6, three year average	2016/17 -18/19	34.3	36.5	41.5	32.8	40.2	30.9	40.0	38.1	38.1	32.4	32.6	28.0	35.7	36.0	40.3	31.5	36.8	35.2	39.6

### Tonbridge and Malling district

Indicator	Period	England	Tonbridge and Malling	Tonbridge and Malling 001	Tonbridge and Malling 002	Tonbridge and Malling 003	Tonbridge and Malling 005	Tonbridge and Malling 006	Tonbridge and Malling 007	Tonbridge and Malling 008	Tonbridge and Malling 009	Tonbridge and Malling 010	Tonbridge and Malling 011	Tonbridge and Malling	Tonbridge an	Tonbri
Obese children Reception Year, three year average	2016/17 -18/19	9.6	8.1	6.7	10.2	11.3	7.5	6.6	7.2	8.5	12.3	3.0	7.8	7.4	7.8	7.6
Children with excess weight Reception Year, three year average	2016/17 -18/19	22.5	20.9	16.2	23.8	24.3	19.6	19.1	19.2	25.0	24.6	16.0	19.6	22.1	18.8	23.0
Obese children Year 6, three year average	2016/17 -18/19	20.1	14.9	16.3	20.1	16.3	18.3	16.0	10.9	16.9	15.4	10.1	13.5	15.0	14.4	11.9
Children with excess weight Year 6, three year average	2016/17 -18/19	34.3	28.7	32.5	36.4	30.9	33.7	28.5	24.5	33.7	28.1	18.8	25.0	27.9	28.8	23.8

## Tunbridge Wells district

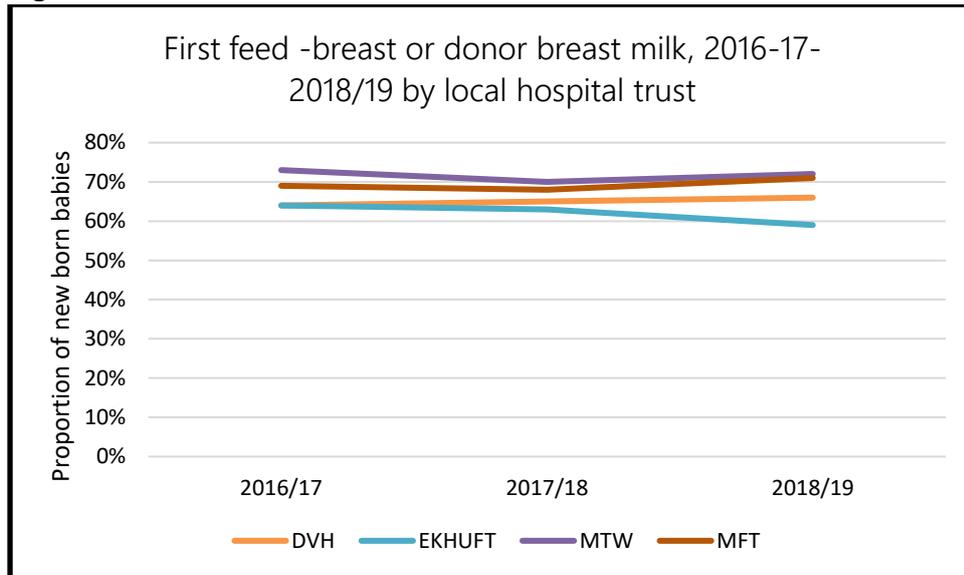
Indicator	Period	England	Tunbridge Wells	Tunbridge Wells 001	Tunbridge Wells 002	Tunbridge Wells 003	Tunbridge Wells 004	Tunbridge Wells 005	Tunbridge Wells 006	Tunbridge Wells 007	Tunbridge Wells 008	Tunbridge Wells 009	Tunbridge Wells 010	Tunbridge Wells 011	Tunbridge Wells 012	Tunbridge Wells	Tunbridge Wells
Obese children Reception Year, three year average	2016/17 -18/19	-	7.6	9.7	6.7	8.5	3.9	11.1	4.0	7.2	8.6	5.9	9.3	7.3	4.8	7.3	11.6
Children with excess weight Reception Year, three year average	2016/17 -18/19	-	21.0	24.4	15.9	23.3	17.6	23.5	14.9	17.0	23.2	18.8	24.1	20.9	19.6	25.4	25.6
Obese children Year 6, three year average	2016/17 -18/19	-	13.6	17.7	11.9	14.0	16.4	15.8	9.3	6.3	15.8	10.5	16.8	9.2	9.2	18.0	23.2
Children with excess weight Year 6, three year average	2016/17 -18/19	-	26.5	32.2	29.9	26.4	29.7	28.0	26.0	20.6	25.4	19.6	27.0	19.7	20.4	32.6	35.1

Source for all district presentation: PHE fingertips

## Appendix F: Breast feeding

Breastfeeding initiation broken down by maternity trust highlighted a need to take a whole systems approach to breastfeeding, with midwifery playing a key and significant role to ensure women are supported and empowered to initiate breastfeeding in the immediate hours after birth. Data suggested that initiation rates in Kent were lower than the England average, which raised questions about what constituted breast feeding initiation locally and regionally. Changes in data reporting in 2016/17 separated first feed breast or donor milk from skin-to-skin contact.

Figure C



The percentage of babies who have received their first feed (maternal or donor breast milk), rather than the count of mothers breastfeeding or not breastfeeding, replaces the previous indicator and therefore is not comparable to previous years.

Continuation of feeding is observed at the health visitor mandated new-born contact when the infant is 10-14 days old. The next two tables present the prevalence of the babies who are partially or fully breast fed and the;

- Prevalence: women who fully or partially breastfeed their babies at a 10-14 day contact
- Coverage: Those babies with a breastfeeding status recorded at a 10-14 day contact

Figures D: prevalence and coverage of breastfeeding status of babes at the mandated 10-14 day contact in Kent 2016/17 -2018/19

Prevalence	2016/17	2017/18	2018/19
Ashford	46.4	43.5	43.1
Canterbury	45.6	49.6	48.2
Dartford	42.5	46.6	48.4
Dover	35.9	38.1	35.7
Gravesham	40.3	42.8	45.8
Maidstone	42.5	46.0	45.9
Sevenoaks	46.7	54.1	56.2
Shepway	40.0	43.5	39.8
Swale	33.4	36.8	36.2
Thanet	35.6	38.1	34.2
Tonbridge & Malling	49.0	49.6	47.8
Tunbridge Wells	58.3	60.2	57.3
Kent	42.7	45.4	44.7

Coverage	2016/17	2017/18	2018/19
Ashford	92.6	97.0	97.7
Canterbury	92.9	96.5	96.9
Dartford	93.4	94.7	96.9
Dover	93.4	97.1	97.3
Gravesham	92.5	95.8	98.3
Maidstone	94.3	95.9	95.8
Sevenoaks	90.7	97.5	98.7
Shepway	92.1	97.9	97.7
Swale	94.2	97.5	97.6
Thanet	90.9	96.6	97.5
Tonbridge & Malling	95.4	96.5	97.7
Tunbridge Wells	94.6	96.2	96.6
Kent	93.2	96.5	97.3

Source: KCHFT performance data

In 2018/19 the prevalence of breast feeding at 6- 8 weeks in England was 46.2%. This is based on those areas where the coverage figures meet, or are above, the data quality standard of 95% as set out by Public Health England. This applies to local authorities and PHE centres. As shown below the coverage has not been met in Kent and therefore Kent data is not published and does not contribute to the England data.

Figure E: Babies with a breastfeeding status recorded at a 6-8 week health visitor contact in Kent

Coverage	2016/17	2017/18	2018/19
Ashford	90.6	92.9	88.5
Canterbury	89.8	93.7	95.4
Dartford	89.3	91.3	94.1
Dover	92.5	96.7	94.5
Gravesham	87.2	92.9	93.2
Maidstone	88.1	92.4	91.3
Sevenoaks	86.1	93.4	94.9
Shepway	89.4	95.4	94.8
Swale	93.1	96.2	95.7
Thanet	89.3	94.6	89.6
Tonbridge & Malling	92.4	95.2	90.2
Tunbridge Wells	90.8	94.7	88.6
Kent	89.9	94.0	92.5

Figures F: Infants fully or partially breastfed status at 6-8 weeks health visitor contact

Prevalence Fully	2016/17	2017/18	2018/19
Ashford	32.1	30.2	30.6
Canterbury	33.5	35.9	34.3
Dartford	27.0	30.1	32.5
Dover	25.3	28.6	26.7
Gravesham	27.3	26.2	29.8
Maidstone	29.4	33.3	32.4
Sevenoaks	32.7	39.8	42.7
Shepway	26.8	31.8	29.4
Swale	23.4	25.6	26.5
Thanet	24.1	25.6	24.3
Tonbridge & Malling	33.5	34.5	34.6
Tunbridge Wells	42.3	43.4	43.3
Kent	29.6	31.7	32.0

Prevalence Partially	2016/17	2017/18	2018/19
Ashford	14.3	13.1	12.5
Canterbury	12.1	12.7	14.0
Dartford	15.5	16.2	15.9
Dover	10.7	8.9	9.0
Gravesham	13.0	15.8	16.0
Maidstone	13.1	12.2	13.5
Sevenoaks	14.0	13.1	13.6
Shepway	13.2	11.1	10.4
Swale	10.1	9.0	9.8
Thanet	11.5	10.9	10.0
Tonbridge & Malling	15.5	13.2	13.2
Tunbridge Wells	16.0	15.8	14.1
Kent	13.2	12.6	12.7

Source: KCHFT performance data

## | Appendix G: Interview questions to stakeholders

Is the messaging to stop the increase in children with unhealthy weight in Kent effective?

What messaging is available on portion size and snacking in children under the age of 4 years of age?

What type of messaging is presented re child weight?

---

Statement read and then questions asked within the context of the statement.

*'Generally, professionals who come into contact with families with children who have an unhealthy weight are reluctant to engage in conversation about the impact of weight: under or excess on infant and child health or promoting healthy weight messages.'*

- What training have you accessed or had made available to enable you to respond to the needs of the range of families or professionals you meet?
- How does excess weight impact on child health outcomes?
- What available help are you aware is offered?
- What are the outcomes for children with an unhealthy weight?
- What action if any is needed and if so should this be targeted at any particular population group?

---

Statement read and then questions asked within the context of the statement.

*'Quite often, facts about the costs of eating 'healthy' food are inaccurate'*

- Is affordability the driver of food choices?
- Is perceived or actual lack of time the driver for food choices?
- Is limitation or variety of diet the driver for food choices?

## Appendix H: Change for life – Sugar smart 2016

Key:

RAG Ratings

<b>(g) GREEN</b>	Higher
<b>(a) AMBER</b>	Similar
<b>(r) RED</b>	Lower

Trend significance

↑	increasing
↓	decreasing
↔	remained the same

Table 1: Change4Life Sugar Smart 2016

Change4Life Sugar Smart 2016		
Key Indicator	Kent	National
No. total registrations	1,800	58,000
Registrations as a percentage of families with youngest child aged under 10	1.6% (g)	1.4%
No. total individuals sent at least one email	4,200	138,900
One email opened as a percentage of individuals	3,600 84.3% (a)	117,800 84.8%
Three emails opened as a percentage of individuals	1,700 40.6% (a)	55,700 40.1%
Percentage of individuals clicking on at least one content link	1,000 23.1% (a)	31,200 22.4%

Source: Public Health Obesity produced by KPHO (ZC) November 2018

## | Appendix I: External insights



Adobe Acrobat  
Document

## References

- <sup>1</sup> Government Office for Science. (2007) *Tackling Obesities: Future Choices-Summary of Key Messages*. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/287943/07-1469x-tackling-obesities-future-choices-summary.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/287943/07-1469x-tackling-obesities-future-choices-summary.pdf)
- <sup>2</sup> Local Government Association. (2017) *Making obesity everybody's business, A whole systems approach to obesity.*: <https://local.gov.uk/sites/default/files/documents/15.6%20Obesity-05.pdf>.
- <sup>3</sup> Foresight report 'Tackling obesity future choices ' [2007:85] 2<sup>nd</sup> edition [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/287937/07-1184x-tackling-obesities-future-choices-report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/287937/07-1184x-tackling-obesities-future-choices-report.pdf)
- <sup>4</sup> Kral, T.V.E., Chittams, J., Moore, R.H., [2017 ] between Food Insecurity, Child Weight Status, and Parent-Reported Child Eating and Snacking Behaviors. *J Spec Pediatr Nurs* 22. <https://doi.org/10.1111/jspn.12177>
- <sup>5</sup> Wu, C.-H., Lin, C.-Y., Hsieh, Y.-P., Strong, C., Meshki, C., Lin, Y.-C., Tsai, M.-C., [2019] Dietary behaviors mediate the association between food insecurity and obesity among socioeconomically disadvantaged youth. *Appetite* 132, 275–281. <https://doi.org/10.1016/j.appet.2018.10.013>
- <sup>6</sup> Johnson W et al. (2015) How has age-related process of overweight or obesity development changed over time? Co-ordinated analyses of individual participant data from five United Kingdom birth cohorts. *PLoS Med* 12(5) e1001828
- <sup>7</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/595439/CMO\\_annual\\_report\\_2014.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/595439/CMO_annual_report_2014.pdf)
- <sup>8</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/595439/CMO\\_annual\\_report\\_2014.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/595439/CMO_annual_report_2014.pdf)
- <sup>9</sup> Stark C M et al 'Antibiotic and acid-suppression medications during early childhood are associated with obesity' *Gut* [2019] **68**: 62–69. doi:10.1136/gutjnl-2017-314971
- <sup>10</sup> Olson C, Strawderman M, Dennison B. [2009] 'Maternal weight gain during pregnancy and child weight at age 3 years' *Maternal and child health Journal*
- <sup>11</sup> Sridhar, S. et al. (2014) "Maternal gestational weight gain and offspring risk for childhood overweight or obesity", *American Journal of Obstetrics and Gynecology*, 211(3), pp. 259.e1-259.e8. doi: 10.1016/j.ajog.2014.02.030
- <sup>12</sup> Adverse childhood experiences are associated with an increased risk of obesity in early adolescence: a population-based prospective cohort study. Gardner R, Feely A, Layte R, Williams J, McGavock J. *Pediatr Res*. 2019 May 13. doi: 10.1038/s41390-019-0414-8
- <sup>13</sup> Davies et al [2019] 'Adverse Childhood Experiences and Weight Status among Adolescents' <https://www.jpeds.com/action/showPdf?pii=S0022-3476%2818%2931245-9>

- <sup>14</sup> Guillaume S et al [2016] Associations between adverse childhood experiences and clinical characteristics of eating disorders DOI: 10.1038/srep35761
- <sup>15</sup> Miller M, Kruisbank M, Wallace J, Chen J, Francesco C. (2018) Sleep duration and incidence of obesity in infants, children, and adolescents: a systematic review and meta-analysis of prospective studies *Sleep*, 41, (4)
- <sup>16</sup> Obesity and Covid 19: A public health perspective webinar presentation streamed 30/7/2020
- <sup>17</sup> Althoff, R.R., Ametti, M., Bertmann, F., 2016. The role of food insecurity in developmental psychopathology. *Preventive Medicine, Special Issue: behavior change, health, and health disparities* 2016 92, 106–109. <https://doi.org/10.1016/j.ypped.2016.08.012>
- <sup>18</sup> Pereira, A.L., Handa, S., Holmqvist, G., 2017. Prevalence and Correlates of Food Insecurity Among Children Across the Globe. <https://doi.org/10.18356/9206b37d-en>
- <sup>19</sup> Kral, T.V.E., Chittams, J., Moore, R.H., 2017. Relationship between Food Insecurity, Child Weight Status, and Parent-Reported Child Eating and Snacking Behaviors. *J Spec Pediatr Nurs* 22. <https://doi.org/10.1111/jspn.12177>
- <sup>20</sup> Government Office for Science (2007) Foresight. Tackling obesity: future choices – project report. <http://bit.ly/1RMduJC>
- <sup>21</sup> Public Health England (2015) Childhood obesity: applying All Our Health. <http://bit.ly/2m1xHos>
- <sup>22</sup> NHS Digital (2017) Health Survey for England, 2016: trend tables. <http://bit.ly/2CA0TYr>
- <sup>23</sup> Lake JK, Power C, & Cole TJ. (1997) Child to adult body mass index in the 1958 British birth cohort: associations with parental obesity. *Arch Dis Child* 77 376-381
- <sup>24</sup> Lundahl A, Kidwell KM & Nelson TD (2014) Parental underestimates of child weight: a meta-analysis. *Paediatrics* 133(3) e689-e703
- <sup>25</sup> NHS Digital (2017) Health Survey for England, 2016: trend tables. <http://bit.ly/2CA0TYr>
- <sup>26</sup> Serdula MK et al (1993) Do obese children become obese adults? A review of the literature. *Prev Med*, 22(2) 167-77
- <sup>27</sup> 2008
- <sup>28</sup> CMO report 2019 Time to solve child hood obesity [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/837907/cmo-special-report-childhood-obesity-october-2019.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/837907/cmo-special-report-childhood-obesity-october-2019.pdf)
- <sup>29</sup> Thomas F, Thomas C, Hooper L et al Area deprivation, screen time and consumption of food and drink high in fat, salt and sugar [HFSS] in young people results from a cross sectional study in the UK. *BMJ open* (2:2019) 9:e027333,doi:10.1136/bmjopen-2018-027333
- <sup>30</sup> Child weight matters (2008)

- <sup>31</sup> Health survey for England 2018 <https://files.digital.nhs.uk/52/FD7E18/HSE18-Adult-Child-Obesity-rep.pdf> published December 2019
- <sup>32</sup> National Obesity Observatory (2016) Obesity and the environment: density of fast food outlets. <http://bit.ly/2k8JZsJ>
- <sup>33</sup> PHE [2018] [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/741555/Fast\\_Food\\_map.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/741555/Fast_Food_map.pdf)
- <sup>34</sup> Williams, J., et al. (2014) A systematic review of the influence of the retail food environment around schools on obesity-related outcomes. *Obesity reviews*, 15, 359-374
- <sup>35</sup> RSPH [2019] Routing out childhood obesity
- <sup>36</sup> <https://www.gov.uk/government/publications/fast-food-outlets-density-by-local-authority-in-england> [accessed 16.10.2020]
- <sup>37</sup> <https://www.gov.uk/government/publications/fast-food-outlets-density-by-local-authority-in-england> [accessed 16.7.2019]
- <sup>38</sup> Titheridge, H., et al (2014) Transport and poverty: a review of the evidence. UCL
- <sup>39</sup> [https://www.kpho.org.uk/\\_data/assets/pdf\\_file/0013/70303/NCMP.pdf](https://www.kpho.org.uk/_data/assets/pdf_file/0013/70303/NCMP.pdf)
- <sup>40</sup> Royal Society for Public Health (2018) Size matters: the impact of upselling on weight gain <https://bit.ly/2LC>
- <sup>41</sup> Scientific advisory Committee on Nutrition: Carbohydrates and health [17:2015] [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/445503/SACN\\_Carbohydrates\\_and\\_Health.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/445503/SACN_Carbohydrates_and_Health.pdf)
- <sup>42</sup> Cited in PHE Childhood obesity plan chapter 2 'Food Standards Agency and Public Health England (2016). National Diet and Nutrition Survey Results from Years 5 and 6 (combined) of the Rolling Programme (2012/13-2013/14).' [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/718903/childhood-obesity-a-plan-for-action-chapter-2.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/718903/childhood-obesity-a-plan-for-action-chapter-2.pdf)
- <sup>43</sup> Cited in PHE Childhood obesity plan chapter 2 'Food Standards Agency and Public Health England (2016). National Diet and Nutrition Survey Results from Years 5 and 6 (combined) of the Rolling Programme (2012/13-2013/14).' [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/718903/childhood-obesity-a-plan-for-action-chapter-2.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/718903/childhood-obesity-a-plan-for-action-chapter-2.pdf)
- <sup>44</sup> Cited in PHE Childhood obesity plan chapter 2 'Amounts differ by age and gender', please see: Public Health England. (2018). Calorie reduction: The scope and ambition for action. Available at: <https://www.gov.uk/government/publications/calorie-reduction-the-scope-and-ambition-for-action> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/718903/childhood-obesity-a-plan-for-action-chapter-2.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/718903/childhood-obesity-a-plan-for-action-chapter-2.pdf)

- <sup>45</sup> Crawley H and Westland S [142: 2019] Infant feed milks in the UK: A practical guide for Health professionals *First Steps Nutrition Trust*
- <sup>46</sup> Public Health England (2018) National diet and nutrition survey: results from years 7 and 8 (combined) of the rolling programme 2014/2015 – 2015/2016. <https://bit.ly/2lxtD0s>
- <sup>47</sup> Crawley H and Westland S [114: 2019] Infant feed milks in the UK: A practical guide for Health professionals *First Steps Nutrition Trust*
- <sup>48</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/896872/EYFS\\_reforms\\_consultation\\_-\\_government\\_response.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/896872/EYFS_reforms_consultation_-_government_response.pdf)
- <sup>49</sup> PHE The relationship between dental caries and body mass index [7:2019] [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/844121/BMI\\_dental\\_caries.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/844121/BMI_dental_caries.pdf)
- <sup>50</sup> PHE [4: 2020] National Dental Epidemiology Programme for England: oral health survey of 5-year-olds 2019 [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/873492/NDEP\\_for\\_England\\_OH\\_Survey\\_5yr\\_2019\\_v1.0.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/873492/NDEP_for_England_OH_Survey_5yr_2019_v1.0.pdf)
- <sup>51</sup> PHE Health Matters: getting every adult people active every day <https://www.gov.uk/government/publications/health-matters-getting-every-adult-active-every-day/health-matters-getting-every-adult-active-every-day>
- <sup>52</sup> Mol aodi O.R. et al. (2012) Neighbourhood food and physical activity environments in England, UK: does ethnic density matter? *International Journal of Behavioural Nutrition and Physical Activity*, 9, 75
- <sup>53</sup> (2008) *Child: Care, Health and Development*, 34(4), 470-474
- <sup>54</sup> Lachowycz K. & Jones A.P. (2011) Greenspace and obesity: a systematic review of the evidence. *Obesity Reviews*, 12, e183-189
- <sup>55</sup> Cummins S. & Fagg J. (2012) Does greener mean thinner? Associations between neighbourhood greenspace and weight status among adults in England. *International Journal of Obesity*, 36, 1108-1113
- <sup>56</sup> Kent County Council, (2016) A needs assessment relating to the provision of natural greenspace in areas with low levels of physical activity. Kent Nature Partnership
- <sup>57</sup> Sport England (2018) Active lives children and young people survey, academic year 2017/18. <https://bit.ly/2EhKxN0>
- <sup>58</sup> UK Chief Medical Officers' Physical Activity Guidelines [2019] [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/832868/uk-chief-medical-officers-physical-activity-guidelines.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/832868/uk-chief-medical-officers-physical-activity-guidelines.pdf)
- <sup>59</sup> <https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-obesity-physical-activity-and-diet/statistics-on-obesity-physical-activity-and-diet-england-2019/part-5-adult-physical-activity#childhood-physical-activity>

- <sup>60</sup> <https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-obesity-physical-activity-and-diet/statistics-on-obesity-physical-activity-and-diet-england-2019/part-5-adult-physical-activity#childhood-physical-activity>
- <sup>61</sup> Public Health England (2013) Obesity and the environment briefing: increasing physical activity and active travel. <https://bit.ly/2UlhCrj>
- <sup>62</sup> Coronini-Cronberg et al. (2012) The impact of a free older persons' bus pass on active travel and regular walking in England. *Am J Public Health*, 102(11) 2141-8
- <sup>63</sup> Green et al (2014) On the buses: a mixed-method evaluation of the impact of free bus travel for young people on public health. *Public Health Research*, 2.1
- <sup>64</sup> Cited in Elia C et al 2020 'Weight misperception and psychological symptoms from adolescence to young adulthood: longitudinal study of an ethnically diverse UK cohort' *BMC Public Health* (2020) 20:712 <https://doi.org/10.1186/s12889-020-08823-1>
- <sup>65</sup> Elia C et al 2020 'Weight misperception and psychological symptoms from adolescence to young adulthood: longitudinal study of an ethnically diverse UK cohort' *BMC Public Health* (2020) 20:712 <https://doi.org/10.1186/s12889-020-08823-1>
- <sup>66</sup> Trauma, bullying, 2018
- <sup>67</sup> Note that across Kent 19.9% in reception year and 38.2% of year six had ethnicity group not stated. Across England 22.9% in reception year and 35.0% of year six had ethnicity group not stated.
- <sup>68</sup> Note using England 2015 IMD deciles.
- <sup>69</sup> <https://www.gov.uk/government/statistics/special-educational-needs-in-england-january-2019>
- <sup>70</sup> Stark CM, Susi A, Emerick J, et al 'Antibiotic and acid-suppression medications during early childhood are associated with obesity' *Gut* 2019;**68**:62–69
- <sup>71</sup> Stark CM, Susi A, Emerick J, et al 'Antibiotic and acid-suppression medications during early childhood are associated with obesity' *Gut* 2019;**68**:62–69
- <sup>72</sup> NOO [4:2011] A simple guide to classifying body mass index in children <https://khub.net/documents/31798783/32039025/A+simple+guide+to+classifying+body+mass+index+in+children/ced23256-6f8d-43c7-9f44-222e2beebf97?version=1.0>
- <sup>73</sup> PHE fingertips <https://fingertips.phe.org.uk/>
- <sup>74</sup> Note different threshold used for clinical assessment: 91<sup>st</sup> centile overweight, 98<sup>th</sup> centile obese
- <sup>75</sup> NHS Digital (2016) Health Survey for England, 2016. <https://bit.ly/2OEd8cv>
- <sup>76</sup> Ref to NHS plan service recommendations
- <sup>77</sup> Health Survey for England 2018 <https://files.digital.nhs.uk/52/FD7E18/HSE18-Adult-Child-Obesity-rep.pdf> published December 2019

- <sup>78</sup> ayph [2019] <http://www.youngpeopleshealth.org.uk/key-data-on-young-people>
- <sup>79</sup> Ghosh RE, Berild JD, Sterrantino AF, et al. Arch Dis Child Fetal Neonatal Ed 2018;**103**:F264–F270. <https://fn.bmj.com/content/fetalneonatal/103/3/F264.full.pdf>
- <sup>80</sup> <https://www.unicef.org/breastfeeding/files/Global-Breastfeeding-Collective-advocacy-brief-obesity-2020.pdf>
- <sup>81</sup> Crawley H and Westland S [2019] Infant feed milks in the UK: A practical guide for Health professionals *First Steps Nutrition Trust*
- <sup>82</sup> Watchmaker B et al. Newborn feeding recommendations and practices increase the risk of development of overweight and obesity BMC Pediatrics (2020) 20:104 <https://doi.org/10.1186/s12887-020-1982-9>
- <sup>83</sup> Hickson T [2019] Evaluation of the use of a Healthy Weight Discussion Tool by a health visiting team *Journal of Health Visiting* Volume 7: Issue 6
- <sup>84</sup> CMO report 2019 Time to solve child hood obesity [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/837907/cmo-special-report-childhood-obesity-october-2019.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/837907/cmo-special-report-childhood-obesity-october-2019.pdf)
- <sup>85</sup> Skinner AC, Ravanbakht SN, Skelton JA, Perrin EM, Armstrong SC. Prevalence of obesity and severe obesity in US children, 1999-2016. *Pediatrics*. 2018.e20173459. doi: <https://doi.org/10.1542/peds.2018-1916>. cited in Watchmaker B et al. Newborn feeding recommendations and practices increase the risk of development of overweight and obesity BMC Pediatrics (2020) 20:104 <https://doi.org/10.1186/s12887-020-1982-9>
- <sup>86</sup> NHS Digital (2017) National Child Measurement Programme - England, 2016-17. <http://bit.ly/2gtRJ9X>
- <sup>87</sup> Kent Public Health Observatory (2017) National Child Measurement Programme data release 2016/17 <http://bit.ly/2ocRCQD>
- <sup>88</sup> Kent Public Health Observatory (2017) Inequalities in obesity & excess weight in childhood update 2016/17 <http://bit.ly/2okLUvo>
- <sup>89</sup> <https://www.gov.uk/government/publications/national-child-measurement-programme-ncmp-trends-in-child-bmi-between-2006-to-2007-and-2018-to-2019/national-child-measurement-programme-ncmp-trends-in-child-bmi>
- <sup>90</sup> PHE child obesity slide set England 2020 knowledgehub.net
- <sup>91</sup> Health Survey for England 2018 <https://files.digital.nhs.uk/52/FD7E18/HSE18-Adult-Child-Obesity-rep.pdf> published December 2019
- <sup>92</sup> Noonan, R.J., 2018. Poverty, Weight Status, and Dietary Intake among UK Adolescents. *Int J Environ Res Public Health* 15. <https://doi.org/10.3390/ijerph15061224>
- <sup>93</sup> CMO report 2019 Time to solve child hood obesity [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/837907/cmo-special-report-childhood-obesity-october-2019.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/837907/cmo-special-report-childhood-obesity-october-2019.pdf)

- <sup>94</sup> [https://www.kpho.org.uk/\\_data/assets/pdf\\_file/0009/106398/FINAL-NCMPv4-002.pdf](https://www.kpho.org.uk/_data/assets/pdf_file/0009/106398/FINAL-NCMPv4-002.pdf)
- <sup>95</sup> <https://www.gov.uk/government/publications/breastfeeding-and-dental-health/breastfeeding-and-dental-health>
- <sup>96</sup> PHE [11:2015] The relationship between dental caries and body mass index  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/844121/BMI\\_dental\\_caries.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/844121/BMI_dental_caries.pdf)
- <sup>97</sup> Health Survey for England 2018 <https://files.digital.nhs.uk/52/FD7E18/HSE18-Adult-Child-Obesity-rep.pdf>
- <sup>98</sup> PHE [2018] **Local action on health inequalities** Understanding and reducing ethnic inequalities in health  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/730917/local\\_action\\_on\\_health\\_inequalities.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/730917/local_action_on_health_inequalities.pdf)
- <sup>99</sup> PHE [4: 2020] National Dental Epidemiology Programme for England: oral health survey of 5-year-olds 2019  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/873492/NDEP\\_for\\_England\\_OH\\_Survey\\_5yr\\_2019\\_v1.0.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/873492/NDEP_for_England_OH_Survey_5yr_2019_v1.0.pdf)
- <sup>100</sup> HM Government [2016] Childhood Obesity A Plan for Action
- <sup>101</sup> PHE [2020] Childhood obesity: applying all our health  
<https://www.gov.uk/government/publications/childhood-obesity-applying-all-our-health/childhood-obesity-applying-all-our-health>
- <sup>102</sup> Redsall SA et al [2013] Guideline for health visitors around obesity prevention during childhood
- <sup>103</sup> Sutcliffe K, Burchett H, Rees R, Melendez-Torres GJ, Stansfield C, Thomas J (2016), What are the critical features of successful Tier 2 lifestyle weight management programmes for children aged 0-11 years? A systematic review to identify the programme characteristics, and combinations of characteristics, that are associated with successful outcomes. London: EPPI Centre, Social Science Research Unit, Institute of Education, University College London
- <sup>104</sup> <https://www.henry.org.uk/evidence-base>
- <sup>105</sup> NICE [2015] Obesity in children and young people: prevention and lifestyle weight management programmes <https://www.nice.org.uk/guidance/qs94>
- <sup>106</sup> NICE [2017] A Guide to Delivering and Commissioning Tier 2 Weight Management Services for Children and their Families
- <sup>107</sup> PHE [2020] Changing behaviour in families- Behaviour change techniques for healthy weight services to support families with children aged 4-11 years <https://www.gov.uk/government/publications/family-weight-management-changing-behaviour-techniques>
- <sup>108</sup> BOMS [2017] Commissioning guide: Weight assessment and management clinics (tier 3)  
<https://www.bomss.org.uk/wp-content/uploads/2017/10/Revision-of-Commissioning-guide-Tier-3-clinics-04042017.pdf>

- <sup>109</sup> <https://www.gov.uk/government/publications/breastfeeding-and-dental-health/breastfeeding-and-dental-health>
- <sup>110</sup> NICE (2013), *Weight management: lifestyle services for overweight or obese children and young people*. Available at <https://www.nice.org.uk/guidance/ph47>.
- <sup>111</sup> NICE [2017] Lifestyle weight management services for overweight or obese children and young people overview <https://pathways.nice.org.uk/pathways/lifestyle-weight-management-services-for-overweight-or-obese-children-and-young-people>
- <sup>112</sup> Sutcliffe K, Burchett H, Rees R, Melendez-Torres GJ, Stansfield C, Thomas J (2016), What are the critical features of successful Tier 2 lifestyle weight management programmes for children aged 0-11 years? A systematic review to identify the programme characteristics, and combinations of characteristics, that are associated with successful outcomes. London: EPPI Centre, Social Science Research Unit, Institute of Education, University College London
- <sup>113</sup> NICE [2018] Eating disorders <https://www.nice.org.uk/guidance/qs175/resources/eating-disorders-pdf-75545662586821>
- <sup>114</sup> NICE [2017] Eating disorders- recognition and treatment <https://www.nice.org.uk/guidance/ng69>