

## Obesity

### Executive summary

Obesity increases the risk of death from a number of conditions, including cancer, heart disease and stroke, and is associated with increased risk of poor physical (including type 2 diabetes, arthritis, and depression), mental and social health. Obesity reduces life expectancy by between 3 and 13 years.

Obesity levels in the UK have been increasing over recent decades for both adults and children. Current estimates of levels of obesity in North Somerset (22.7%) are similar to the average for England (23%). In childhood, levels of obesity rise with age from 8.07% in 4-5 year olds to 16.6% in 10-11 year olds. In North Somerset the proportion of 4-5 year olds who are overweight and obese is slightly higher than the average for England at 24%. In common with the rest of England and the South West, the prevalence of childhood obesity appears to have stabilised over the last few years, with no evidence that it is actually decreasing.

A recent analysis has predicted that by 2050 58% of men and 51% of women will be obese, with up to 90% of the population having excess weight<sup>1</sup>. Groups at high risk for obesity include people with diabetes; pregnant women; children of obese mothers; and those living in deprived areas or from low income households.

The Go4Life partnership is the main driver for the prevention and tackling of obesity in North Somerset. Other services are aimed at providing intervention and treatment services for obesity, although many are not provided as comprehensively as national guidance recommends.

Health Trainers in North Somerset are often consulted about diet and exercise with a proportion wanting to lose weight. In 2013/4 77% of those consulting about diet and exercise were overweight or obese. Of those individuals that wanted to lose weight that were followed up with subsequent weights recorded, 61% lost weight with a further 27% reaching their 5% weight loss target. The Health Trainers also have access to Go4Life Chequebooks and Slimming-on-Referral vouchers.

The Slimming-on-Referral scheme has been available throughout North Somerset since 2011, provided by Weight Watchers<sup>®</sup>. Average weight loss is 5.5kg, with those completing the 12 week course achieving an average of 6.8kg weight loss. Over the last three years 55% of those attending have achieved their target 5% weight loss. However, a larger proportion of patients referred do not attend and there is considerable variation in the referral rate by general practices.

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Bariatric surgery is provided in North Somerset for morbidly obese patients according to national criteria. The Childhood Obesity Action Plan describes a range of activities aimed at pregnant women and the early years.

### **Challenges for consideration by commissioners**

Local data on excess weight is not routinely available for:

- prevalence of overweight and obesity in children under the age of 4-5
- prevalence of excess weight and weight management in diabetic patients
- prevalence of excess weight and weight maintenance in pregnant women
- prevalence of excess weight and weight management in adults

Action is required to develop:

- tier 3 services to support bariatric surgery
- universal provision of a service to prevent weight gain in pregnant women with excess weight
- a comprehensive action plan for childhood obesity prevention and management

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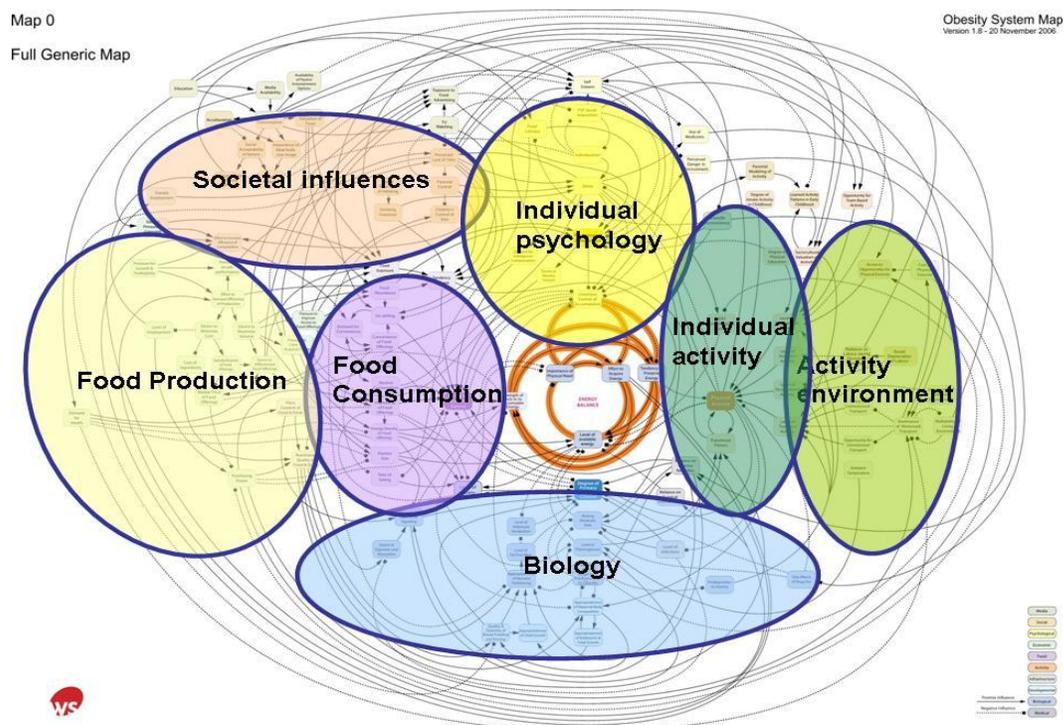
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## Why is this important?

### What is obesity?

'Obesity' and 'overweight' are terms used to describe different degrees of excess body weight. In simple terms, excess weight is caused by an imbalance between the energy taken into our bodies through what we eat and the energy we expend in moving around. Both our biology (genetics and metabolism) and our behaviour (eating and physical activity) are involved in maintaining a healthy body weight. However, these primary determinants are also strongly influenced by other cultural, environmental and social factors. Reproduced below is a 'systems map', identifying the causes of obesity.



**Source:** Butland B, Jebb S, Kopelman P, McPherson K, Thomas S, et al (2007)<sup>2</sup>

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## Measuring obesity

Body mass index is a measure related to height and weight commonly used to measure overweight and obesity. The higher the body mass index, the higher the amount of excess fat and the greater the health risks associated (although there are exceptions to this that may include people who are very muscular, athletes, pregnant or nursing women). Table 1 shows Body Mass Index classification for adults as recommended by National Institute for Health and Clinical Excellence (NICE)<sup>3</sup>.

**Table 1: Body Mass Index classification for adults**

<b>Classification</b>	<b>BMI (kg/m<sup>2</sup>)</b>	<b>Risk of co-morbidities</b>
Underweight	Less than 18.5	Low, risk of other clinical problems rises
Healthy weight	18.5 – 24.9	Average
Overweight	25 – 29.9	Increased
Obesity – class I	30 – 34.9	Moderate
Obesity – class II	35 – 39.9	Severe
Obesity – class III	40 or more	Very severe

**Source:** National Institute for Health and Clinical Excellence (NICE)<sup>3</sup>

BMI classification is different for children, as BMI changes as children mature and growth patterns vary for sex and age. BMI z scores take account of this by measuring BMIs of a reference population and then comparing the child's BMI to this according to their age and sex. In the UK the 1990 growth reference is used for 0 to 23 year olds although those aged over 18 years can actually be classified according to the adult classification system. Table 2 shows the UK classification system for overweight and obesity in children<sup>4</sup>.

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**Table 2: BMI z score classification in children**

Classification	BMI z score
Underweight	<2 <sup>nd</sup> centile
Overweight	>91 <sup>st</sup> centile
Obese	>98 <sup>th</sup> centile

**Source:** National Obesity Observatory 2011<sup>4</sup>

## What are the consequences of obesity?

### *Mortality*

- Obesity is associated with premature death, increasing the risk of a number of diseases, including the two major killers - cardiovascular disease and cancer;
- It is estimated that, on average, obesity reduces life expectancy by between three and 13 years – the more severe the obesity and the earlier it develops, the greater the excess mortality<sup>5</sup>.

### *Morbidity*

In public health terms, the greatest burden of disease arises from obesity-related morbidity:

- Type 2 diabetes is probably the most common obesity-related disease and that which is likely to cause the greatest health burden, with diabetes about 20 times more likely to occur in people who are very obese compared with people who are a healthy weight<sup>7</sup>;
- Obesity is associated with the four most prevalent disabling conditions in the UK (arthritis, mental health disorders, learning disabilities and back ailments)<sup>6</sup>;
- Obese people have twice the risk of having physical disability, 84% increased risk of musculoskeletal illness and 35% increased risk of back problems<sup>5</sup>;
- The risk of developing osteoarthritis is 3.5 times higher for obese people, the risk of other arthritis 4 times higher and the risk of having a disability requiring personal care 2.5 times higher<sup>7</sup>Error! Bookmark not defined.
- People with learning disability can have higher prevalence of obesity<sup>8</sup>;
- Obesity in adults is strongly correlated to obesity in children.

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Table 3 shows the increased risk of certain diseases in people with a raised body mass index.

**Table 3: Increased risk of diseases in people with a raised body mass index**

Increased risks of disease in the obese		
Greatly increased risk (Relative risk more than 3)	Moderately increased risk (Relative risk 2-3)	Slightly increased risk (Relative risk 1-2)
<ul style="list-style-type: none"> <li>* Type 2 diabetes</li> <li>* Insulin resistance</li> <li>* Gallbladder disease</li> <li>* Dyslipidaemia</li> <li>* Breathlessness</li> <li>* Sleep apnoea</li> </ul>	<ul style="list-style-type: none"> <li>* Coronary heart disease</li> <li>* Hypertension</li> <li>* Stroke</li> <li>* Osteoarthritis (knees)</li> <li>* Hyperuricaemia and gout</li> <li>* Psychological factors</li> </ul>	<ul style="list-style-type: none"> <li>* Cancer (some forms)</li> <li>* Reproductive hormone abnormality</li> <li>* Polycystic ovary syndrome</li> <li>* Impaired fertility</li> <li>* Low back pain</li> <li>* Anaesthetic risk</li> <li>* Foetal defects associated with maternal obesity</li> </ul>

**Source:** Swanton K (2008)<sup>9</sup>.

Table 4 shows the proportion of the diseases selected that is directly attributable to obesity<sup>2</sup>. All risks in the table (except the risk of gallstones) decrease with weight loss.

**Table 4: Proportion of the diseases (over 10%) selected that is directly attributable to obesity**

Disease	Relative risk	Attributable proportion (%)
Obesity	-	100
Stroke	3.1	25.8
Hypertension	2.9	24.1
Diabetes (Type 2)	2.9	24.1
Angina pectoris	2.5	20.5
Gout	2.5	20.0
Gall-bladder disease	2.0	14.3
Myocardial infarction	1.9	13.9
Osteoarthritis	1.8	11.8

**Source:** Kyffin R and Tran A (2010)<sup>10</sup>

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## Healthcare costs

Estimates for the economic and financial costs of obesity and overweight vary but the latest modeling suggests that increases in obesity-related diseases (including cancer, type 2 diabetes and cardiovascular disease) are projected to add £1.9–2 billion per year to health care costs in the UK by 2030. This would correspond to 2% of the total spending on UK health care in 2009<sup>11</sup>.

## What are the benefits of reducing body weight?

There are enormous benefits for an obese or overweight individual who loses weight, in terms of their physical, psychological and social health:

- Good evidence suggests that a relatively moderate loss of 5-10% of bodyweight in an obese person can bring important health benefits, including in a reduction in blood pressure and a reduced risk of developing type 2 diabetes and coronary heart disease, especially if weight loss is maintained for life<sup>3</sup>;
- Weight reduction in overweight and obese people can improve self-esteem and can help tackle some of the associated psychosocial conditions. Small changes can have a positive impact on the overall health and wellbeing of individuals.

Table 5 shows the positive effect of a 10 percent reduction in body weight (based on a 100kg person losing 10kg body weight). It is important to recognise that, for very obese people, a change of 10kg may not bring them out of the 'at-risk' category, but there are nevertheless worthwhile health gains.

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**Table 5: Positive effect of a 10% reduction in body weight (based on a 100kg person losing 10kg body weight)**

<b>Benefits of a ten percent reduction in body weight</b>	
<b>Area of positive effect</b>	<b>Benefit</b>
Mortality	<ul style="list-style-type: none"> <li>• More than 20% fall in total mortality</li> <li>• More than 30% fall in diabetes-related deaths</li> <li>• More than 40% fall in obesity-related cancer deaths</li> </ul>
Blood pressure (in hypertensive people)	<ul style="list-style-type: none"> <li>• Fall of 10mmHg systolic blood pressure</li> <li>• Fall of 20mmHg diastolic blood pressure</li> </ul>
Diabetes (in newly diagnosed people)	<ul style="list-style-type: none"> <li>• Fall of 50% in fasting glucose</li> </ul>
Lipids	<ul style="list-style-type: none"> <li>• Fall of 10% of total cholesterol</li> <li>• Fall of 15% of low density lipoprotein (LDL) cholesterol</li> <li>• Fall of 30% of triglycerides</li> <li>• Increase of 8% of high density lipoprotein (HDL) cholesterol</li> </ul>
Other benefits	<ul style="list-style-type: none"> <li>• Improved lung function</li> <li>• Reduced back and joint pain, breathlessness and sleep apnoea</li> <li>• Improved insulin sensitivity and ovarian function</li> </ul>

**Source:** Swanton K (2008)<sup>9</sup>.

### **What are the needs of the population?**

The prevalence of obesity in the UK has increased in recent decades and overweight is now the norm for adults.

- In 2012, nearly two-thirds of all adults – approximately 34 million people – were either overweight or obese<sup>12</sup>;
- Since 1993, the prevalence of overweight (including obesity) has increased by 21% in men and 19% in women and the trend remains upward<sup>9</sup>. An unpublished analysis by the UK Health Forum has recently predicted that by 2050 58% of men and 51% of women will be obese, with up to 90% of the population having excess weight<sup>1</sup>.

The story for children is similar:

- Nearly one third of children aged between two and 15 – nearly three million children – are overweight or obese. Approximately 16% are obese<sup>13</sup>.
- If current trends continue, a quarter of all children under 16 could be obese by 2050<sup>13</sup>.

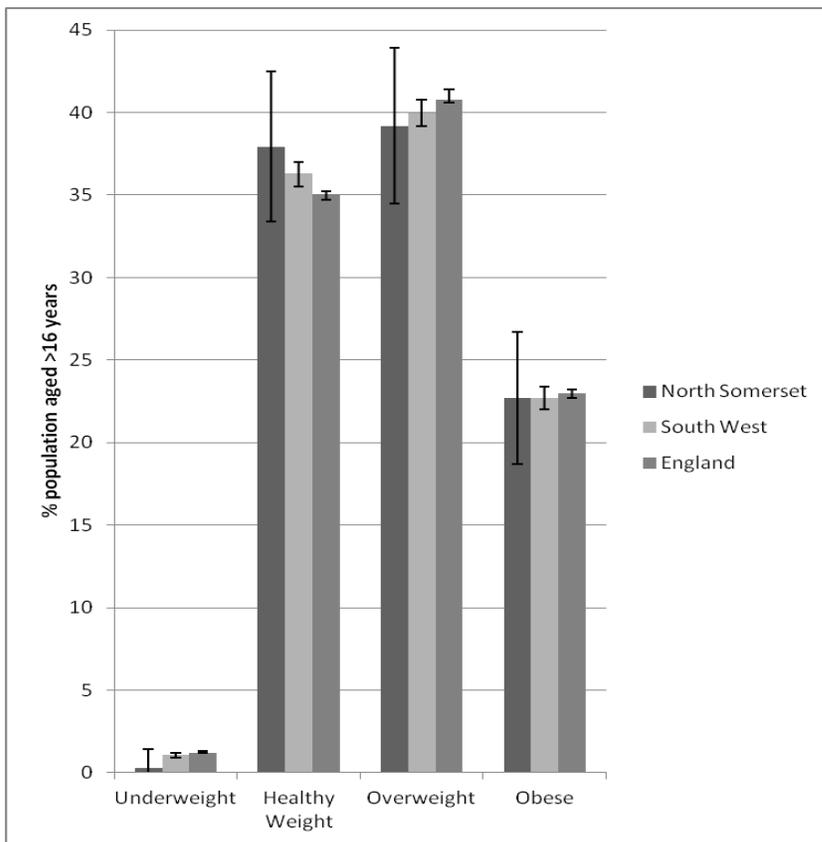
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Current needs: Obesity in adults in North Somerset

North Somerset shares the burden, health risks and costs associated with the UK obesity epidemic. A recent estimate suggests that obesity levels in North Somerset (22.7%) are slightly lower than in the rest of England (23%)<sup>13</sup>.

Figure 1 shows the prevalence of underweight, healthy weight, overweight and obese adults in North Somerset from 2012-13.

**Figure 1: Distribution of body mass index amongst men and women aged 16 years and over resident in North Somerset**



**Source:** PHOF (Active People’s Survey 2012-3)<sup>12</sup>

This model estimates that 37,616 people in North Somerset are obese. This is over twice the number, 17,685, that has been recorded by General Practitioners in North Somerset. This could mean that many obese people are not receiving help and support to manage their weight.

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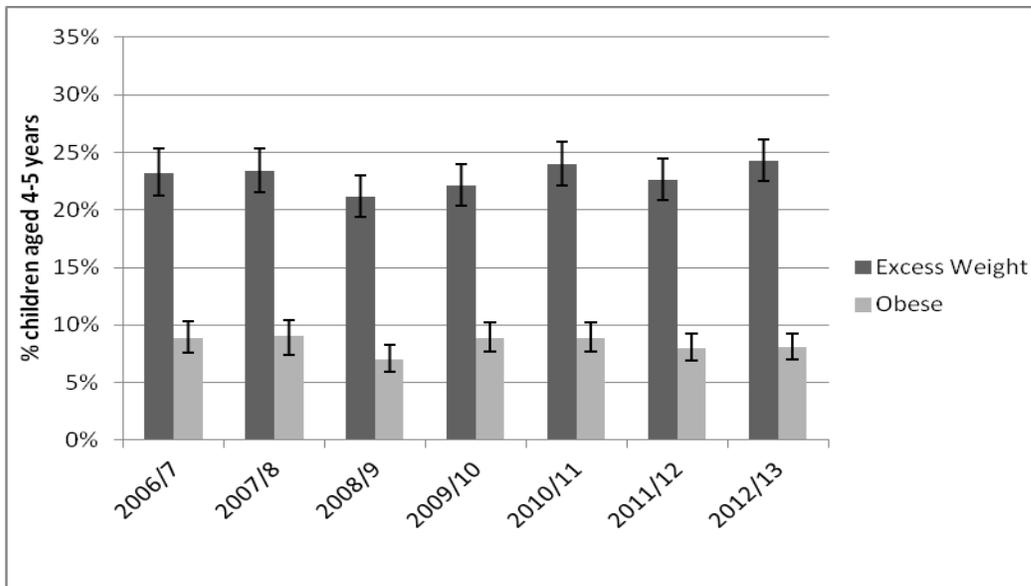
## Current needs: Obesity in children in North Somerset

The height and weight of school-aged children is routinely collected as part of the National Child Measurement Programme at the start and end of their primary education.

- The National Child Measurement Programme results for 2012-13 show that 16% of 4 and 5 year old children at school in North Somerset are overweight and 8% are obese<sup>14</sup>;
- In line with national trends, the proportion of obese children rises as they get older - of our children aged 10 and 11, 15% are overweight and 17% obese;

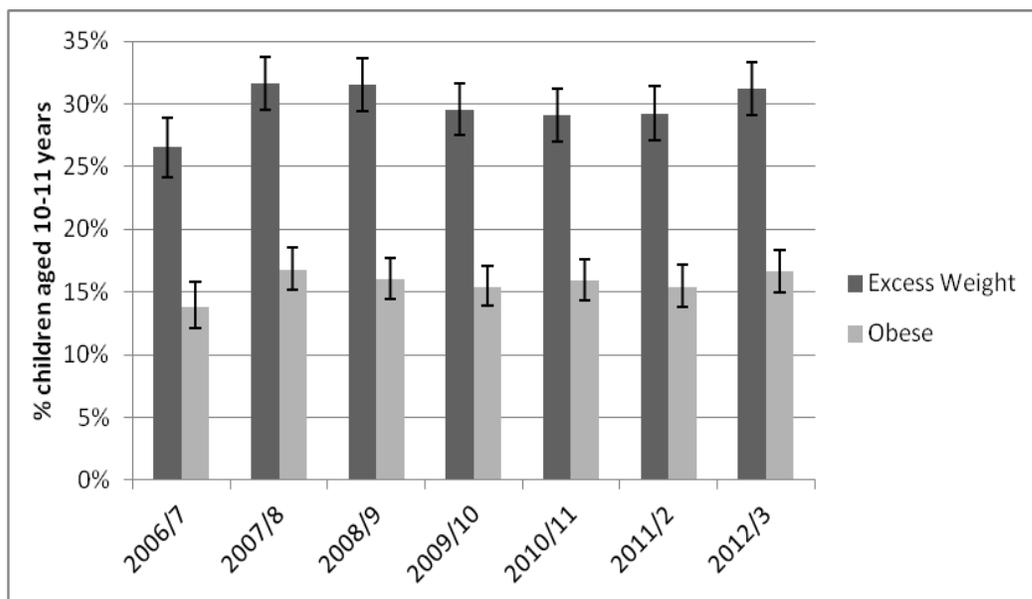
Figures 2 and 3 show the rates of childhood obesity in North Somerset over the seven years from 2006 to 2013.

**Figure 2: Prevalence of excess weight (overweight and obesity) and obesity in Reception (aged 4–5 year olds) in North Somerset (2006-2013)**



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**Figure 3: Prevalence of excess weight (overweight and obesity) and obesity in Year 6 (aged 10–11 year olds) in North Somerset (2006-2013)**

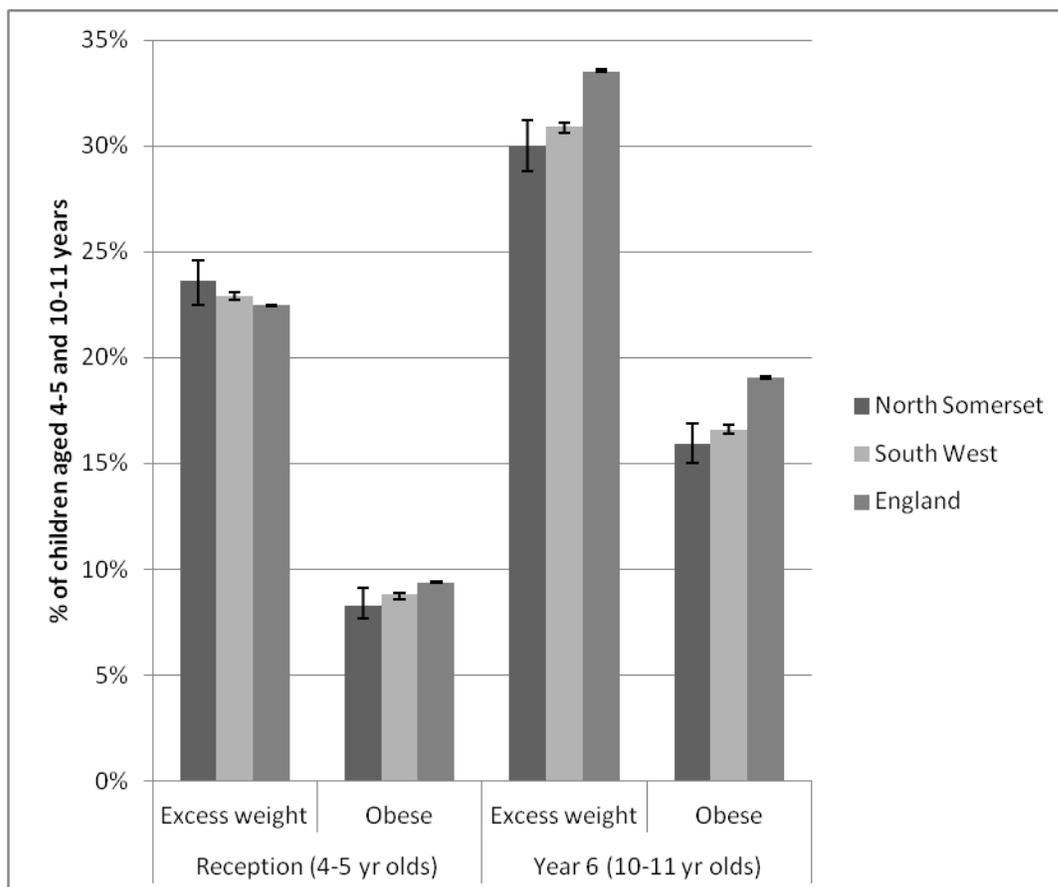


**Source:** National Child Measurement Programme 2012-3<sup>14</sup>

- The rates of overweight and obese children in North Somerset taken together mirror the picture seen in the rest of the South West and England as a whole, except for excess weight in 4–5 year olds, where rates are marginally (though not statistically significantly) higher than regionally or nationally (see figure 4)
- In common with the rest of England and the South West, the prevalence of childhood obesity appears to have stabilised over the last few years, with no evidence that it is actually decreasing.

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**Figure 4: Obese and excess weight (overweight and obese) compared to the South West & England**



**Source:** National Child Measurement Programme 2010-2013<sup>14</sup>

Analysis of the first three years data from the National Child Measurement Programme shows obesity rates in both Reception (age 4–5) and Year 6 (age 10–11) children from the most deprived areas in North Somerset are significantly higher than rates in children from affluent areas. There has been no significant change in this gap over the last three years.

## High risk groups

### Ethnicity

Nationally black African women have the highest obesity prevalence when using waist circumference as a measure, but Bangladeshi women have the highest prevalence when using hip to waist ratio. However, due to differences in physiological response to fat storage, people of South East Asian and Chinese origin are at increased risk of mortality and chronic diseases such as diabetes at lower BMIs and waist circumferences compared to the white European

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population<sup>15</sup>. According to the 2011 census, 43% of the population in North Somerset that classified themselves as of black or minority ethnic group classified themselves as Asian, making this the most common minority ethnic group.

### People with diabetes

Nationally it is estimated that nearly 15% of men and 10% women that are obese have diagnosed diabetes. This is over five times the prevalence of diabetes in those that are not overweight or obese<sup>16</sup>. Excess weight contributes to insulin resistance which makes managing diabetes more difficult. Weight loss can help control blood glucose levels and can lower the risk of complications.

Over 96% of general practice patient data was available in North Somerset for analysis in the National Diabetes Audit from 2011-2. This reported that 8,118 North Somerset residents (3.96% of the population) had type 2 diabetes, compared to 4.25% of the population of England and Wales<sup>17</sup>. Previous estimates have shown that over 78% patients with diabetes in North Somerset are overweight or obese.

### Pregnant women

In pregnancy, obesity is associated with an increased risk of serious adverse outcomes, including:

- miscarriage
- fetal congenital anomaly
- thromboembolism
- gestational diabetes
- pre-eclampsia
- dysfunctional labour
- postpartum haemorrhage
- wound infections
- stillbirth and
- neonatal death

There is a higher caesarean section rate and lower breastfeeding rate in obese women compared to women with a healthy BMI. The Confidential Enquiry into Maternal and Child Health's report on maternal deaths in 2003-5 also suggested that a higher proportion of women that were obese died than the background population prevalence of obesity at that time, which suggests that obesity may also be a risk factor for maternal death<sup>20</sup>.

In England 15.6% of women are obese at the start of pregnancy<sup>21</sup>. As there are higher rates of miscarriage and infertility in obese women this might explain the lower rate of obesity in pregnancy compared to women of child-bearing age.

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We do not have data for North Somerset alone but in 2013/4 in Bristol, North Somerset and South Gloucestershire combined almost half of women at booking had BMIs over 25 and 20% were obese, which is higher than the England average. From a total number of 2150 births amongst North Somerset residents in 2013/4, this would estimate that over 1000 pregnant women have excess weight and 430 are obese at the beginning of pregnancy. It is unclear why levels locally appear to be higher than nationally.

238 births occurred at Weston Area Health NHS Trust in 2013/4. The midwives at Weston Area Health NHS Trust are currently collecting data on patients referred for weight management support during pregnancy (capacity for 72 referrals per year) which might give a clearer picture of local statistics.

### Children of obese mothers

- There is also evidence that maternal obesity significantly increases the risks of foetal congenital anomaly, prematurity, stillbirth and neonatal death<sup>17</sup>;
- The child of an obese mother is up to four times more likely to be overweight by the age of seven and as a direct result of maternal obesity a child faces a life-long risk of obesity and related health problems<sup>18</sup>.

### Inequalities

National data show that higher obesity prevalence is particularly related to deprivation and low income, especially for women and children. Increasing levels of educational achievement are associated with decreasing levels of obesity<sup>19</sup>.

## **Current services for Adults**

### **Tier 1 – Obesity Prevention/ weight maintenance and self-directed early intervention**

#### *Go4Life*

The main driver to prevent and tackle obesity in North Somerset is the Go4Life partnership. Over 600 North Somerset partners from the public, private and voluntary sector support the campaign programme to promote and encourage people to live healthier and more active lifestyles.

Many local projects provided by the vast array of partners use the Go4Life brand to raise awareness of interventions that assist with weight maintenance or loss; Change4Life tools are also used and promoted through Go4Life. Further information regarding the interventions available can be viewed on the website [www.go4life.org](http://www.go4life.org). A review of Go4Life is due to take place and any actions from the review will be included in specific physical activity and obesity delivery plans.

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### *Positive Step*

“Positive Step” are a partnership service that “support wellness in North Somerset”, promoting mental wellbeing and providing services such as talking therapies and courses in managing anxiety, stress, obsessions, eating problems and postnatal depression. They run a six week course called “Get Ready for Change” which prepares people to make changes in order to lose weight.

### *Health Trainers*

The Health Trainer Programme was established nationally in 2004 and was specifically designed to tackle health inequalities, working with adults on a one-to-one basis to help individuals make improvements to their health and wellbeing. Health Trainers commenced in North Somerset in 2010. They offer support and advice on a range of lifestyle issues to help individuals to stop smoking; lose weight; eat and cook healthily; cut down on alcohol; become more active; or improve emotional health and wellbeing. They act as key workers for the Slimming-on-referral and Go4Life Exercise Chequebook schemes and are trained stop smoking advisors.

In 2013/4 they saw 352 clients and 64% (256/398) of assessments were related to diet and exercise. The distribution of weight of clients is shown in table 7.

**Table 7: BMIs of clients consulting health trainers for advice on diet and exercise**

<b>BMI Category</b>	<b>Number of assessments</b>	<b>% of assessments</b>
Underweight	2	1%
Normal weight	56	22%
Overweight	67	26%
Obese	131	51%
<b>Grand Total</b>	<b>256</b>	<b>100%</b>

Of those consulting on diet and exercise, 77% were overweight or obese and 22% mentioned weight loss as a specific goal. 88% of individuals wanting to lose weight lost weight, of which 19% met their 5% weight loss target (table 8).

**Table 8: Outcomes of assessments concerning weight loss as a main goal that had weights recorded subsequently**

<b>Weight Outcome</b>	<b>Number of assessments</b>	<b>%</b>
Gained weight	5	10%
Lost weight	36	71%
Lost weight - met 5% target	9	17%
No change	1	2%

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<b>Grand Total</b>	<b>51</b>	<b>100%</b>
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## **Tier 2 – primary care and community weight management services**

The evidence for obesity management was reviewed by the National Institute for Health and Clinical Excellence and published as guidance in 2006. The guidance recommended provision of a range of obesity management services; as for the previous JSNA chapter, many of these services are still less comprehensively commissioned in North Somerset than the guidance suggests.

### *Slimming on Referral*

The General Practice Slimming on Referral scheme originally ran as a pilot between April 2007 and March 2010 in Weston-super-Mare, the area of North Somerset with the greatest health inequalities. Following its success, from August 2011 Weight Watchers® was chosen as the sole provider of Slimming-on-Referral locally and it was rolled out across North Somerset. Patients are eligible if they have a BMI of 30 kg/m<sup>2</sup> or above and are not currently attending a commercial weight management organisation. The scheme offers vouchers for 12 free sessions at Weight Watchers®. Patients can only receive one set of vouchers for a course, to allow wider accessibility to the scheme. Any further attendance at a commercial weight management organisation needs to be funded by the patient. The aim is to increase weight loss in obese patients, with a target loss of 5kg or 5% of body weight.

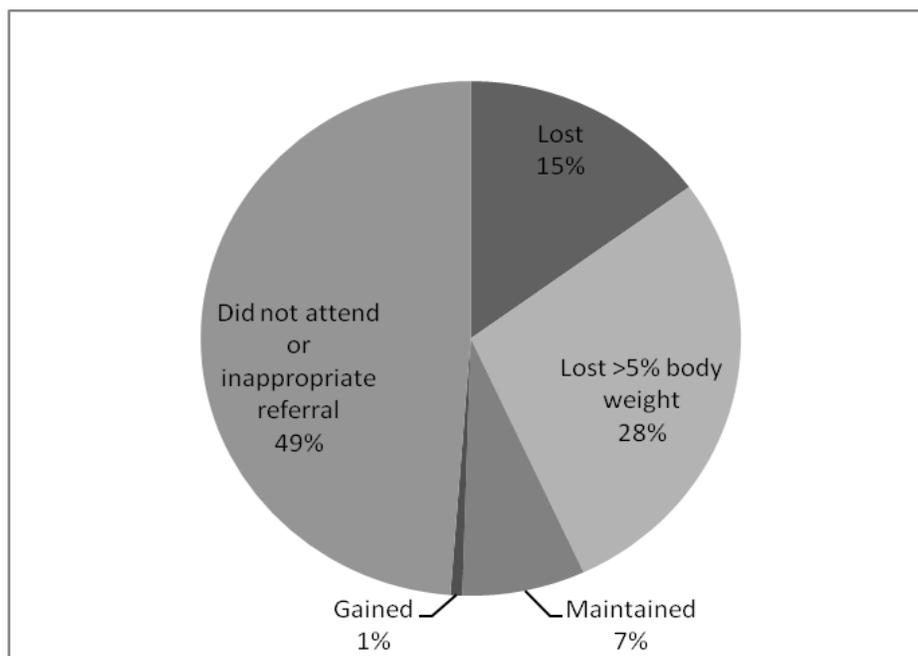
Between 2011 and 2014 there have been 1822 referrals to the scheme. 77% of these completed a consent form and received vouchers. Of these, 70% attended at least one session and 73% completed the course. 23% of those referred were men. Of the 933 appropriately referred individuals that attended:

- 71% had a BMI of between 30-39kg/m<sup>2</sup>
- 25% had a BMI of between 40-49kg/m<sup>2</sup>
- 3% had a BMI of 50kg/m<sup>2</sup> or more
- 5 patients had BMIs over 60kg/m<sup>2</sup>

There is a large dropout between referral and attendance of the service, a small number of which is accounted for by inappropriate referrals (ineligible BMIs) (see figure 5). Further work will take place in 2014/15 with practices and patients to understand what needs to change to increase attendance.

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**Figure 5: Weight outcomes for all referrals to Slimming on Referral from 2011-2014 (n = 1822)**



The average weight loss for obese patients attending the scheme was 5.5kg, with those completing the course achieving an average of 6.8kg weight loss. Over the three year period this amounts to 55% of patients losing at least 5% of their body weight during the course. The majority of patients (495 out of 513) who achieved the target weight loss of 5% of their body weight completed the course and qualified for 10 complimentary sessions offered at Weight Watchers<sup>®</sup> discretion. There has been a recent drop in numbers attending the programme, although the completion rates after attending remain constant.

Referrals vary from GP practice to GP practice, and there has been a decline in referral numbers since the beginning of the scheme from all practices but most markedly in Weston-Super-Mare. The Slimming on Referral Scheme will be working with GP practices to address the variation in referral rates and increase access to the scheme for obese and overweight people.

### *Community Weight Management Service*

This dietician-led service offers a mixture of group and individual support over 3-6 months with the aim of losing 5% body weight through physical activity, nutritional advice, changing behavior and supporting lifestyle change. It is aimed at those with BMIs over 35 with comorbidities, and those with BMIs of 40-45. Since April 2013 it has been offered at a choice of two venues in Portishead and Weston-Super-Mare. Clients are offered six to seven appointments over a six month period and data is collected quarterly.

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There have been 88 referrals to date, of which 24% were inappropriate (ineligible BMIs). Of the appropriate referrals, 88% of patients attended their first appointment and 76% of these attended a second. For those that completed the programme, the average weight loss was 5.5kg. The current waiting time for new referrals at both venues is 4 weeks.

### *Weight Management Services for Pregnant Women*

Current NICE and Royal College of Obstetricians and Gynaecologists guidance do not recommend weight management programmes or dieting during pregnancy due to potential risk to the unborn baby, but they advise pre-conception planning and weight loss for women with BMIs over 30<sup>20,21</sup>. A recent systematic review could identify no eligible studies that looked at weight loss in pregnancy<sup>22</sup>.

Weight management services for pregnant women in North Somerset are currently focused in Weston-super-Mare. There is no provision for pregnant women receiving their care from community midwives based elsewhere in North Somerset and there is no consistent care pathway for maternal obesity across North Somerset and Bristol, where the majority of North Somerset women deliver their babies.

The community midwives based at Weston General hospital deliver a version of the SHINE (Self Help, Independence, Nutrition and Exercise) programme that has been adapted for adults and pregnant women as a core part of the maternal healthy weight service, to prevent weight gain in pregnancy. This is targeted at women with BMIs of 30 or more or under 30 with gestational diabetes, or those with BMIs over 25 that have demonstrated an interest in weight management during pregnancy. Evaluation of client data is currently being done.

### **Tier 3 – multi-disciplinary assessment within a hospital setting**

NHS England commissioning guidance for tier 4 services state that there should be a tier 3 multi-disciplinary secondary care assessment service to support tier 4 services<sup>23</sup>. Patients should be referred by their GPs to the tier 3 service after they have tried and failed a supervised lifestyle weight management programme or self-directed dieting if they have BMIs of over 35 with comorbidities or BMIs over 40. The multidisciplinary weight management team should at least consist of a bariatric physician, specialist nurse, dietician, clinical psychologist and liaison psychiatry professional, with access to a physical therapist<sup>24</sup>. Patients referred to the dieticians' service in North Somerset would currently fulfill the criteria for referral to a tier 3 service. Although it is currently not commissioned in North Somerset, following discussions with NHS England several local CCGs are currently working on developing a tier 3 service together. The provision of bariatric surgery to aid weight reduction is in line with national criteria.

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#### Tier 4 – bariatric surgery

NICE guidance states that bariatric surgery should be the recommended first line treatment for obesity in secondary care for patients with a body mass index over 50<sup>3</sup> in whom surgical intervention is considered appropriate (ie. in severe, complex obesity where other measures have failed). A recent draft NICE guidance has suggested that this should be extended to those with BMIs of 40 or more, or 35 or more if significant comorbidities (such as type 2 diabetes or hypertension) that could be improved if the person lost weight. To be considered for surgery the individual should also have tried all appropriate non-surgical measures to lose weight without achieving clinically beneficial weight loss, be enrolled in a tier 3 weight management service, be fit for anaesthesia and surgery and commit to the need for long-term follow up<sup>25</sup>. Currently patients are referred by their GP to Southmead hospital (North Bristol NHS Trust) and the hospital obtains the funding as appropriate. As there is currently no tier 3 service in North Somerset, this is a need that has been identified by the CCG for development.

The current provider for morbid obesity surgery across Bristol, North Somerset and South Gloucestershire is North Bristol NHS Trust. Access to surgery is via a multi-disciplinary assessment via the endocrinology clinic, so most patients will have comorbidities such as diabetes. Table 9 shows the numbers of patients undergoing bariatric surgery (gastric bypass and banding) in North Somerset over the last five years.

**Table 9: Numbers of patients undergoing bariatric surgery in North Somerset from 2009-2014**

Year	Number of patients undergoing bariatric surgery
2009/10	10
2010/11	12
2011/2	12
2012/3	17
2013/4	8

Local population estimates indicate that approximately 2572 patients would be eligible for referral to a tier 3 service if it was available.

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## **Current Services for children and young people**

### **Tier 1 – Obesity Prevention/ weight maintenance and self-directed early intervention**

#### *Childhood Obesity Action Plan*

The Childhood Obesity Action Plan reflects the range of activities for pregnant and nursing women, early years and school-aged children which are currently being delivered across North Somerset by a variety of partners within existing resources. The work is also linked to a broader programme of improving child emotional health and wellbeing. There are several programmes that address obesity and weight loss as a specific goal.

#### *North Somerset Healthy Schools Network (NSHSN)*

The North Somerset Healthy Schools Network (*NSHSN*) is a local programme that helps schools to maintain a focus on health through a flexible and practical, 'plan-do-review' approach by:

- Supporting children and young people to be healthy and happy and get the most out of life
- Demonstrating to the whole school community the importance placed on health and wellbeing
- Increasing the participation of pupils and parents/carers
- Improving achievement, as healthy children are higher achieving children
- Providing evidence that pupil's needs are being addressed, particularly in the areas of behaviour, safety, social development and care for vulnerable children
- Accessing organisations and resources to support health and wellbeing
- Sharing good practice through a network of schools.

Schools are invited to join the programme in term 4, identify needs and plan activities in terms 5 and 6 and begin working on healthy activities at the beginning of the following academic year. In the last year twelve schools in North Somerset have participated in the programme.

#### *Change4Life Clubs*

These extracurricular sports clubs take place in both primary (year 3-4) and secondary schools, targeting those most at risk of inactivity and obesity. They encourage the participation of the children in choosing activities, encouraging healthy eating and promoting emotional health.

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### *Family Cooking Course*

A family cooking course to promote healthy eating in the home will be run by the Community Learning Team as a pilot from September 2014. It is aimed at six schools in more deprived areas with higher rates of obesity as identified by the school nurses.

### *Nutritional and Physical Activity Self Assessment for Child Care (NAPSACC)*

During 2014-2017 North Somerset Council will be taking part in a research study at the University of Bristol, funded by the National Institute of Health and Research. The study, called "NAPSACC UK", aims to increase physical activity and healthy eating in 2-4 year olds. The study will adapt an intervention developed in the United States of America. The Nutrition and Physical Activity Self Assessment for Child Care (NAPSACC) intervention is delivered in child care centres. It aims to improve policies, practices and the nutrition and physical activity environment. In addition the research study will develop the intervention to involve parents and carers. The study is a feasibility randomised controlled trial in child care settings with 2-4 year children.

### **Tier 2 - primary care and community weight management services**

There is a specialist paediatric dietician based at Weston-Super-Mare hospital who takes referrals from paediatricians, health visitors and GPs. A small proportion of her work is with children that are overweight or obese. There is however no dietetics service that is specifically commissioned for children and young people that are obese or overweight.

### *Self Help, Independence, Nutrition and Exercise (SHINE) Programme*

The SHINE programme started in June 2014 as a 12 week course for 12 young people aged 10 to 17 years old with BMI z scores >91<sup>st</sup> centile. The following outcomes are measured as part of the programme:

- height and weight (for BMI)
- waist circumference
- peak flow for fitness
- blood pressure
- psychological measures including self esteem scores and anxiety and depression scores.

It is due to finish in September 2014 and will be evaluated on completion.

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### *Breakthrough Active*

Breakthrough Active is an activity-based mentoring scheme for 13-19 year olds with BMI z scores >98<sup>th</sup> centile. It runs over 60 sessions and is aimed at those that are more sedentary or reluctant to participate in physical activity and come from more deprived backgrounds (free school meals, care leavers or looked after children). The aim is to reduce BMI, increase self esteem and emotional resilience and increase physical activity. It is currently being evaluated.

### **Tier 3 and 4 services – secondary care multi-disciplinary team assessment and bariatric surgery**

Nationally there is a lack of tier 3 and 4 paediatric weight management services. Bariatric surgery is not generally recommended in children and young people and is currently only considered in exceptional circumstances if they have achieved or nearly achieved physiological maturity<sup>25</sup>.

### *Care of Childhood Obesity (COCO) Clinic*

The Endocrinology department at Bristol Children's Hospital runs a Care of Childhood Obesity (COCO) Clinic. The clinic is run by paediatric endocrinologists with paediatric dieticians and sedentary advisors. They see patients with BMI z scores above the 99<sup>th</sup> centile or lower BMIs with comorbidities. Patients are referred by GPs, secondary care, and community-based paediatric teams. The clinic is not currently commissioned but is funded by the Higher Education Funding Council for England (HEFCE) and University Hospitals Bristol NHS Foundation Trust (UBHT). Demand outweighs availability so patients are triaged by severity and research needs. Bariatric surgery is arranged in liaison with surgeons at North Bristol NHS Trust (NBT) on average once a year for exceptional cases.

### **Challenges for consideration by commissioners**

- Further work with colleagues across Bristol and South Gloucestershire is undertaken to develop a tier three multi-disciplinary assessment service to support access to tier 4 bariatric surgery;
- Further work with colleagues across Bristol and South Gloucestershire is undertaken to develop a consistent care pathway for maternal obesity across the area.
- Development of a comprehensive action plan for childhood obesity prevention and management

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## Further information

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## Glossary

<i>BMI</i>	Body mass index (BMI) is commonly used to indicate whether adults are a healthy weight or underweight, overweight or obese. It is defined as the weight in kilograms divided by the square of the height in metres (kg/m <sup>2</sup> ) <sup>26</sup>
<i>BMI z score</i>	<p>BMI z score is a measure of how many standard deviations a child or young person's BMI is above or below the average BMI for their age and gender. (This is based on a reference population known as a child growth reference.)</p> <p>The advantage of using BMI z scores, instead of BMI, is that it allows direct comparison of BMI (and any changes in BMI) across different ages and by gender. Care is needed when interpreting BMI z scores using the <u>UK 1990 centile charts</u> for black, Asian and other minority ethnic groups as there is evidence to suggest that adults from these groups are at risk of obesity-associated conditions and diseases at a lower BMI than the white population. However, there are no growth reference charts for children from minority ethnic groups.<sup>3</sup></p>
<i>Breakthrough Active</i>	Breakthrough Active is an activity-based mentoring scheme for 13-19 year olds with BMI z scores >98 <sup>th</sup> centile. It is provided for those that are more sedentary or reluctant to participate in physical activity and come from more deprived backgrounds (free school meals/ care leavers/ looked after children) with the aim of reducing BMI, increasing self esteem and emotional resilience and increasing physical activity.
<i>National Child Measurement Programme</i>	The National Child Measurement Programme (NCMP) measures the weight and height of children in reception class (aged 4-5) and Year 6 (aged 10-11). The aim is to assess the prevalence of obesity and overweight among children of primary school age, by local authority area. These data can be used at a national level to support local public health initiatives and inform local services for children <sup>3</sup> .
<i>SHINE programme</i>	The Self Help, Independence, Nutrition & Exercise (SHINE) Programme was started in Sheffield by a community-based not-for-profit limited company as a programme aimed at obese 10-17 year olds to help them lose weight and increase confidence and self-esteem. It runs over 12 weeks

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