

London Borough of Havering

# Havering Healthy Weight Strategy 2024-2029: Everybody's Business

A whole systems approach to reducing overweight and obesity



The vision for Havering is that within 20 years' childhood obesity will have been eradicated, that the Borough will have become a healthier place to live, work and play, and a place where communities have come together to make the healthier choice the easier choice



London Borough of Havering  
1/17/2024

## Document Control

Include document details, version history, approval history, and equality analysis record.

### Document details

<b>Name</b>	Havering Healthy Weight Strategy 2024-2029
<b>Version number</b>	Draft v 1.0
<b>Status</b>	First draft
<b>Authors</b>	Elaine Greenway, Assistant Director Public Health, London Borough of Havering (LBH) Jack Davies, Public Health Specialist, LBH Victoria Stokes, Public Health Programme Manager, LBH Thomas Goldrick, Senior Public Health Analyst, LBH
<b>Lead Officer</b>	Mark Ansell, Director of Public Health London Borough of Havering
<b>Approved by</b>	
<b>Scheduled review date</b>	

### Version history

<b>Version</b>	<b>Change</b>	<b>Date</b>	<b>Dissemination</b>
<b>Draft</b>			

### Equality & Health Impact Assessment record

<b>1</b>	<b>Title of activity</b>	Havering Healthy Weight Strategy 2024-29; Everybody's Business: A whole systems approach to reducing overweight and obesity
<b>2</b>	<b>Type of activity</b>	A new strategy

### 3 Scope of activity

This document sets out the local strategic approach for addressing high levels of overweight and obesity in the Borough, through a “whole systems place-based approach”. This will support the longer term vision for the Borough; within 20 years’ childhood obesity will have been eradicated, and that the Borough will have become a healthy place to live work and play, and a place where communities have come together to make the healthier choice the easier choice.

There is sound evidence that shows where we live influences how and what we eat, and how active we are. The system (the conditions that affect how we live) can shape the choices that we make. There are over 100 causes of overweight and obesity in the system that are pushing us towards unhealthy choices.

A whole systems approach to obesity prevention means addressing all the different causes of obesity and being aware of the potential health implications of actions taken, and working towards making the healthier choice the easier choice.

A whole systems approach takes a long time to embed. Once embedded, it takes many years for rates of obesity to fall.

During the five-year lifetime of this strategy, we will (a) embed changes through an all systems place-based approach for the whole Borough, (b) introduce an enhanced and targeted neighbourhood-level place-based approach to address inequalities (starting with the neighbourhood of Gooshays and Heaton wards).

By 2029 we expect to see:

- An improvement in healthy weight levels in reception aged children across the Borough, compared to the England average.
- An improvement in measures of excess weight among year 6 children in the targeted neighbourhood of Gooshays and Heaton wards compared to statistical neighbours.
- The development of the Borough as a place that promotes healthy weight and where the healthier choice is the easier choice; enabling people to eat healthily and be active.

4a	Are you changing, introducing a new, or removing a service, policy, strategy or function?	Yes	If the answer to <u>any</u> of these questions is 'YES', please continue to question 5.	If the answer to <u>all</u> of the questions (4a, 4b & 4c) is 'NO', please go to question 6.
4b	Does this activity have the potential to impact (either positively or negatively) upon people (9 protected characteristics)?	Yes		
4c	Does the activity have the potential to impact (either positively or negatively) upon any factors which determine people's health and wellbeing?	Yes		
5	If you answered YES:	<b>Please complete the EqHIA in Section 2 of this document.</b> Please see Appendix 1 for Guidance.		
6	If you answered NO: ( <i>Please provide a clear and robust explanation on why your activity does not require an EqHIA. This is essential in case the activity is challenged under the Equality Act 2010. )</i>  <i>Please keep this checklist for your audit trail.</i>			

Date	Completed by	Review date
01. 09. 23	Jack Davies	

## Executive summary

Obesity rates in Havering are very high for both children and adults, either similar or above the London and England averages, and they look set to get worse. The problem of overweight and obesity is cutting lives short, and negatively impacting the quality of life of Havering residents. Prevention is a key priority for Havering Council and the NHS, as set out in the *Havering Corporate Plan*,<sup>1</sup> the Havering Health and Wellbeing Board's *Health and Wellbeing Strategy 2019/20–2023/24* and the Havering Place Based Partnership's Interim Health and Care Strategy.<sup>2</sup>

It is a common misconception that individuals are completely in control of their own weight and that an overweight problem is entirely the result of personal choices. Over recent years it has become increasingly evident that obesity is a much more complex issue, and one that is caused by multiple factors that interact with each other; the modern-day changes in the circumstances where we live, work and play that now make us more likely to opt for unhealthy options of foods and less likely to be physically active. In short, it is largely the circumstances where we live, known as 'the system', that has resulted in the increasing rates of overweight and obesity.

The scale and complexity of the problem means that the Council, the local NHS, and stakeholders must work together to change the system.

Over 100 local partners came together for two healthy weight summits to identify the system-wide factors that are contributing to overweight and obesity in Havering, and to consider the solutions. The work from these summits contributed to the development of this five-year healthy weight strategy on taking a whole systems approach, and a twenty-year vision for the Borough.

The shared vision for Havering is that, *within 20 years, childhood obesity will have been eradicated, and that the Borough will have become a healthy place to live work and study and a place where communities have come together to make the healthier choice the easiest choice.*

Over the lifetime of this strategy the Council and NHS, with partners will

- deliver a Borough-level whole systems approach that makes the healthier choice the easier choice and supports individuals to achieve and maintain a healthy weight
- introduce an enhanced and targeted neighbourhood-level whole systems approach to address inequalities, starting with Gooshays and Heaton wards initially, and expanding to other neighbourhoods in the future

By the end of this five-year strategy we expect to see

- The development of the Borough as a place that promotes healthy weight, where the healthier choice is the easiest choice; with foundations laid to achieve the twenty-year vision of eradicating childhood obesity
- An improvement in healthy weight levels in reception aged children across the Borough, compared to the England average
- An improvement in measures of excess weight among year 6 children in the targeted neighbourhood of Gooshays and Heaton wards, compared to statistical neighbours

# Joint Foreword between Mark Ansell, Director of Public Health, and Councillor Gillian Ford, Cabinet Member for Adults and Wellbeing

Welcome to Havering’s draft Healthy Weight Strategy.

We share an ambition for the Borough to be a place where residents achieve the very best for their health and wellbeing. Sadly, we know that this isn’t happening; levels of overweight and obesity in the local population are among the highest in the country, which means that too many people living in Havering are at greater risk of poor health. Even more worryingly, too many children in the Borough are overweight or obese and set on a path of experiencing lifelong illnesses that were once only seen in adults. As rates of overweight and obesity have increased over the years, and are projected to increase still further in the future, the reality is that obesity is cutting too many lives short and, unless we take urgent action, the problem will only get worse.

The Council, the NHS, and our partners are determined to tackle the problem. We have so many fantastic assets in the Borough; beautiful green spaces and parks, excellent leisure and sporting facilities, and good schools. But along with the rest of the UK and other developed countries, Havering is host to conditions that stand in the way of good health and wellbeing; the food environment, the way that we work and other circumstances that favour inactivity, are all pushing the population in the direction of overweight and obesity.

As this draft strategy sets out, we propose adopting an approach which is proving to be effective in other cities. Known as a ‘whole systems approach’, the Council, the NHS and other partners will work together to address the over 100 factors that are contributing to the problem of growing rates of overweight and obesity.

We share the vision that Havering will become a place where the healthier choice will be the easier choice, with childhood obesity eradicated within 20 years.

Whether you live, work, or visit the Borough, we encourage you to consider the Obesity Health Needs Assessment chapter on obesity that has informed this strategy’s approach, and comment on the draft strategy itself.

Councillor Gillian Ford, Deputy  
Lead of Havering Council and  
lead member for Health

Mark Ansell  
Director of Public Health  
London Borough of Havering



## Support for the Health Weight Strategy

*“I am seeing more cases of fatty infiltration of liver and Type 2 diabetes in children and young people, which are a direct result of higher numbers of obesity. Fatty infiltration of liver is a precursor to Liver cirrhosis leading to liver failure. Type 2 diabetes in children and younger population is a much more aggressive condition and leads to both kidney failure and heart disease at an early age.*

*“The NHS can’t deal with increasing rates of obesity by itself; it is important for all local partners to work together.”*

Diabetes Specialist Paediatric Consultant  
Barking, Havering and Redbridge University Trust

*“Everyone Active fully supports this strategy and is committed to playing our part in supporting local residents to achieve a healthy weight.”*

Area Contract Manager  
Everyone Active

*“As the independent voice of people who use health and social care services in Havering, we know how overweight and obesity can affect the day to day lives of local people. We fully support this strategy, and as an organisation, pledge to play our part in preventing overweight and obesity.”*

Senior Manager  
Healthwatch Havering

*“Schools are seeing increasing numbers of children who are overweight and obese. As a head teacher, I welcome this strategy, and want my school to play a full part in achieving the vision for a healthier Borough.”*

Head teacher,  
Harold Hill Junior School

# Introduction

Preventing overweight and obesity and the health issues caused by overweight and obesity are priorities for Havering Council and the NHS, as set out in the *Havering Corporate Plan*, the Havering Health and Wellbeing Board’s *Health and Wellbeing Strategy 2019/20–2023/24* and the Havering Place Based Partnership’s *Interim Health and Care Strategy*.

This draft five year *Havering Healthy Weight Strategy 2024-2029* summarises the scale of the problem of overweight and obesity, why it is a concern and what causes obesity. It sets out how residents, the Council, the NHS, schools, leisure centres, the voluntary and community sector and local businesses must work together on delivering a ‘whole systems approach’<sup>1</sup> to achieve a healthier population. This document should be considered alongside the new Havering Obesity Health Needs Assessment.

The development of this strategy has been led by the Council and has involved elected members, including the Leader of the Council and Lead Member for Adults and Wellbeing, as well as relevant service areas, and NHS partners. In total, over 30 stakeholder organisations have been engaged in its development, including representatives from schools, local businesses and the voluntary and community sector. The focus is on upstream prevention; stopping increasing rates of obesity in the local population, whilst recognising that help and support should be available for those individuals who want to lose excess weight.

Work started on this strategy during 2022 by bringing together information about overweight and obesity in the local population, evidence about the causes of and solutions for tackling obesity, a review of national strategy and published research on what has worked in the UK, and the achievements that have been made to address overweight and obesity in other cities around the globe.

This information was presented at two healthy weight summits, which were attended by over 30 stakeholder organisations.

The discussions from those workshops and ongoing engagement with stakeholders informed the content of this strategy, the twenty year vision for the Borough, the guiding principles for development and implementation, and the process for implementing a whole systems approach.<sup>3</sup>

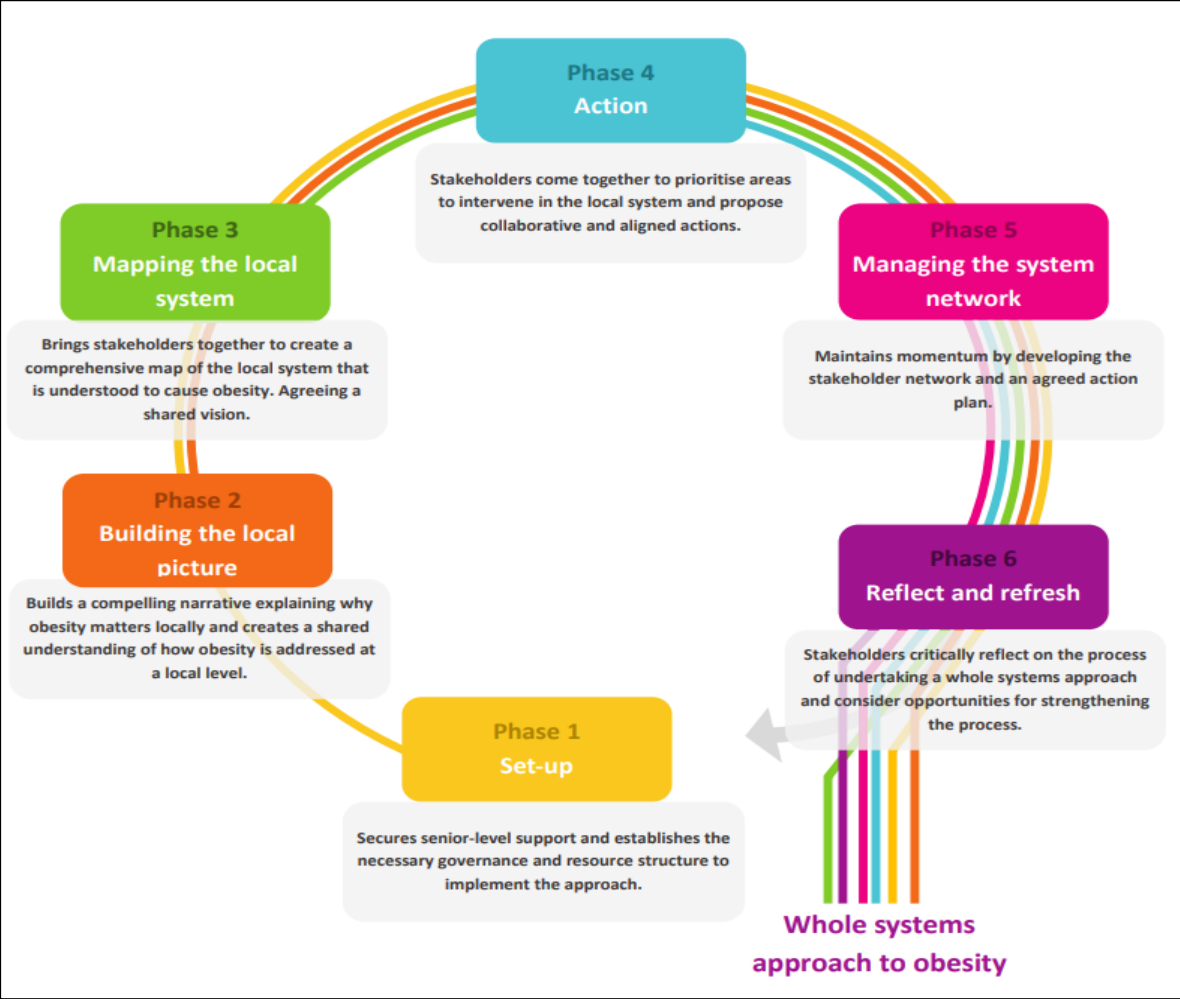
The publication *What Good Healthy Weight for all Looks Like* provided the guiding principles for the development and implementation of this strategy, and for future assessment (see appendix 2)

---

<sup>1</sup> OHID and the Department for Health and Social Care (DHSC) defined a local whole systems approach as a response to “complexity through an ongoing, dynamic and flexible way of working. It enables local stakeholders, including communities, to come together, share an understanding of the reality of the challenge, consider how the local system is operating and where there are the greatest opportunities for change. Stakeholders agree actions and decide as a network how to work together in an integrated way to bring about sustainable, long-term systems change



**Figure 1:** Six step model for implementing a whole system approach to tackle obesity



Source: OHID Whole Systems Approach Guide

Phases 1 to 4 of the six step model guided the development of this strategy during 2022-2023. Phases 5 and 6 will commence when the strategy is agreed.

## Prevalence of overweight and obesity

Rates of overweight and obesity have been increasing and are expected to increase further in the future.

The latest data for children is for the 2022/23 school year which shows that for Havering:

- 22.2% of children aged 4 – 5 years old (school year reception) were overweight or obese. Havering is similar to the London and England averages (which are high).<sup>4</sup>
- 40.1% of children aged 10-11 (school year 6), were overweight or obese. Havering is similar to the high London average and above the England average.<sup>5</sup>

Obesity rates in Havering for children aged 10 – 11 (school year 6) has increased by 20% over the last 15 years from 32.9% to 40.1%.

The most recent data for adults is from the *2021/22 Active Lives Adult Survey* which shows that for Havering:

- 60.3% of adults aged 18 – 64 years old are estimated to be overweight or obese. Trend data shows that Havering consistently has one of the highest proportion of adult overweight and obesity in London and is above the high England average.<sup>6</sup>
- 24.9% of adults aged 18 – 64 years old are estimated to be obese. Trend data shows Havering is consistently above the London average and is following the rising England average.<sup>7</sup>

The prevalence of overweight and obesity is expected to continue to rise:

- The proportion of adults who are overweight or obese has risen in England from 52.9% in 1993 to 64.3% in 2021, and the proportion of those people who are obese has risen from 14.9% in 1993 to 26.0% in 2021.<sup>8</sup>
- In 2022, Cancer Research UK suggested that 36% of the population would be obese by 2040.<sup>9</sup> If overweight and obese trends continue then the combined prevalence of overweight and obesity may reach 71% of the population by 2040.<sup>10</sup>

## Inequalities

Health inequalities are the systematic, unfair, and avoidable differences in health between different groups of people.

There are inequalities associated with overweight and obesity, which mean that some groups of people are affected more than others.

National evidence is that rates of obesity are highest in areas of greatest disadvantage. Children growing up in these areas are more at risk of obesity. Children who are obese are more likely to be obese in adulthood.<sup>4</sup>

### FACT BOX 1: What is a healthy weight?

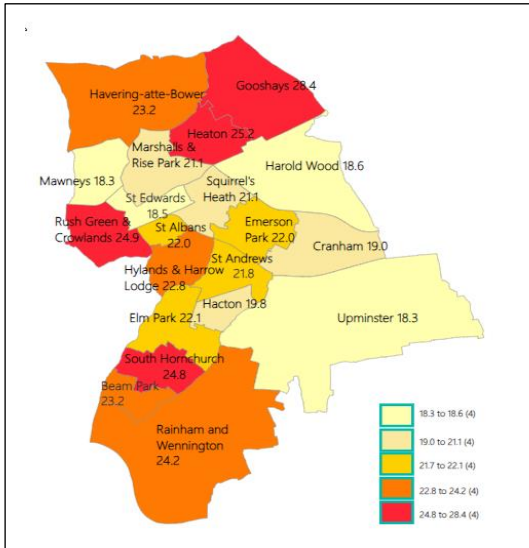
Healthy weight for both adults and children is determined by Body Mass Index (BMI).

For adults, a BMI between 18.5 and 24.9 is considered healthy. BMI is calculated by dividing body mass by the square of the body height, and is expressed in units of kg/m<sup>2</sup>

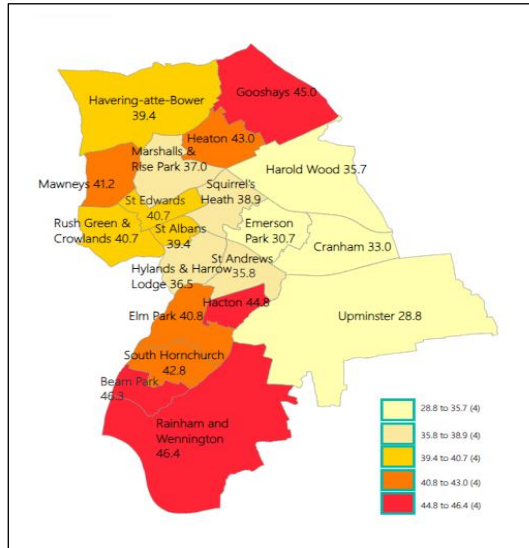
For children, age and gender is also taken into account when calculating BMI and the result is then compared to national datasets of children's BMI to assess whether they are a healthy weight. Children with a BMI between the 2<sup>nd</sup> and 85<sup>th</sup> centiles are a healthy weight. Children above the 85<sup>th</sup> centile are overweight and above 95<sup>th</sup> centile obese.<sup>2</sup>

Excess weight is classified by the NHS as an adult living with overweight, obese or severe obesity. With a BMI  $\geq 25$ kg/m<sup>2</sup>.

**Figure 2:** Percentage of excess weight among children aged 4-5 by ward 2019/20-2022/23

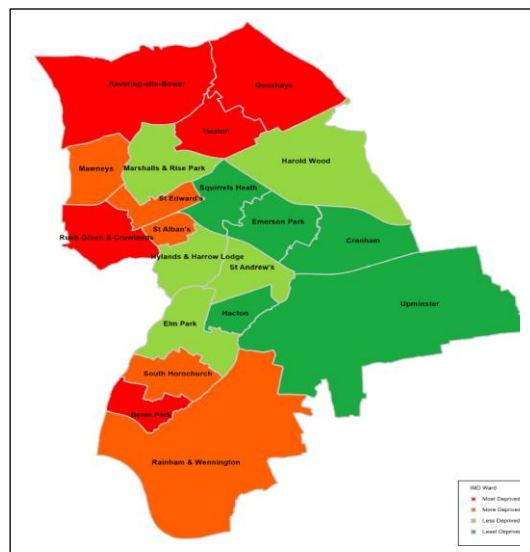


**Figure 3:** Percentage of excess weight among children aged 10-11 by ward, 2019/20-2022/23



Data Source: National Child Measurement Programme (NCMP) 20 - 23 OHID.

**Figure 4:** Map of Havering wards showing the English Indices of Deprivation 2019



Data Source: Ministry of Housing, Communities & Local Government. 2019

As figures 2 and 3 above show, the highest rates of excess weight among children in reception year (ages 4-5) are in Gooshays, Heaton, South Hornchurch and Rush green & Crowlands wards. For children in year 6 (ages 10-11), the wards with the highest rates of excess weight are Beam Park, Rainham and Wennington followed closed by Gooshays and Hacton. The maps illustrate the association between higher levels of excess weight and wards of greater disadvantage as presented in figure 4.

As set out in the Obesity Health Needs Assessment chapter on obesity, overweight and obesity is also higher in particular population groups such as in some ethnic groups, people with physical and learning disabilities, people with severe mental illness, and people of middle age. Men are more likely to be overweight compared to women, but women are more likely to be obese compared to men.

## Why is overweight and obesity a problem?

Overweight and obesity is affecting the quality of life of Havering residents and cutting lives short.

Children are beginning to develop diseases previously seen only in adults, such as type 2 diabetes, high blood pressure, high cholesterol, liver conditions, and bone and joint problems.<sup>11</sup> Overweight and obesity could also be affecting children's life chances as there are higher rates of school absence among children who are overweight, compared with children of healthy weight,<sup>12</sup> and there is emerging evidence of an association between obesity and poorer educational attainment.<sup>11</sup> Being obese can result in stigma and bullying which has been found to result in lower self-esteem and can impact emotional and behavioural development.<sup>11</sup>

In adults, overweight and obesity is the second biggest preventable cause of cancer after smoking.<sup>13</sup> Obesity reduces life expectancy by an average of three years or by eight to ten years with severe obesity.<sup>14</sup> Being overweight or obese increases risk factors for cardiovascular disease, such as high blood pressure, high cholesterol and type 2 diabetes.<sup>14</sup> People who are obese are a third more likely to develop dementia compared to those of a healthy weight.<sup>15</sup>

Maternal obesity rates doubled from 7.6% in 1989 to 15.6% in 2007. Pregnant women who are obese are more likely to experience complications in labour, and their children have increased risk of health conditions such as heart disease, diabetes and asthma.<sup>11</sup> Children born to obese mothers are more likely to develop obesity themselves<sup>11</sup> and obesity in childhood is more likely to lead to overweight and obesity in adulthood.<sup>5</sup> This is resulting in an added problem in that overweight and obesity is increasingly being handed down through generations. Breastfeeding is associated with lower chances of children becoming obese.<sup>16</sup>

Obesity significantly increases the risk of hospitalisation, and morbidly obese individuals make significantly more visits to GPs and to hospital.<sup>17</sup> Multiple studies have estimated that the NHS spends approximately £6 billion on obesity-related health care each year.<sup>18</sup> A 2022 study estimated obesity costs the UK around £58 billion per year through NHS cost of treating the associated illnesses, provision of social care, as well as to the individual in regards to quality of life, and to business due to loss of workplace productivity.<sup>19</sup>

Obese individuals are three times more likely to need adult social care than people of a healthy weight.<sup>20 21</sup> A 1 kg/m<sup>2</sup> increase in BMI is associated with a five per cent rise in the odds of need for help with social care.<sup>22</sup> When social care is required for people who are obese, this can often mean costly housing adaptations and additional carers. It is estimated that the yearly cost of local authority funded community-based social care for an individual

with severe obesity and a BMI of 40, would be £1,086, nearly double the cost for a person with a BMI of 23, which is in the healthy range.<sup>22</sup>

### The causes of obesity

It has been a common misconception that the answer to addressing the problem of obesity lies in education, food labelling, and individual willpower.<sup>23</sup> Most people know what is a healthy lifestyle. More than 90% of us know that we should limit our consumption of foods that are high in fat, sugar and salt. Almost everyone (99%) knows that eating fruit and vegetables is important for a healthy lifestyle.<sup>24</sup> The majority (75%) of people know what a healthy diet is, 78% understand that diet has an impact on their health and 87% think it is important to eat a healthy diet.<sup>23</sup> However, as Table 1 below shows, similar to the rest of the UK population, the majority of Havering residents do not have a healthy lifestyle.

**Table 1:** Average ‘5 a day’ consumption and physical activity levels in Havering, London and England

Area	The number of children (aged 5 - 15) eating ‘5 a day’*	The number of children meeting physical activity guidelines**	The number of adults (16+) eating ‘5 a day’***	The number of adults meeting physical activity guidelines***
Havering	not available at borough level	42.9%	31.0%	61.2%
London Region	not available at regional level	46.1%	31.5%	66.8%
England	18.0%	46.8%	32.5%	67.3%

Sources:

\* NHS England 2019 *Health Survey for England* (Data for year 2018)

\*\* OHID 2023 Based on Active Lives Children and Young People Survey, Sport England (Data for year 2021/22)

\*\*\* OHID 2023 Based on the Active Lives Adult Survey, Sport England (Data for year 2021/22)

Achieving a healthy lifestyle isn’t solely the combination of individual knowledge and willpower. Eating healthily and being physically active is largely influenced by the circumstances where we live, work and play.<sup>25 26</sup> Changes in modern day living have resulted in high streets and dining options that have become saturated with unhealthy food, and infrastructure and cultural attitudes that have led to fewer opportunities to be physically active.

The impact of these changes in modern day living is a system of circumstances and factors that encourage us to eat more foods that are high in fat, sugar and salt and to be physically inactive, so that it has now become easier to become overweight or obese.

## Turning the tide on obesity through a whole systems approach

The influential Foresight Project Report *Tackling Obesities: Future Choices* describes over 100 interacting factors that influence individual choices.<sup>25</sup>

The Foresight Report makes the case that these over 100 factors are so inter-related that they create a very complex system. Focusing on single initiatives will not achieve the scale of change needed to reduce levels of obesity. Instead, broad action is needed that address the wide-ranging factors across the whole system.

Turning the tide on obesity through a whole systems approach means responding to the complex and inter-

A system is a collection of interdependent parts. Where there is change in one part of the system, this will affect other parts.

related factors that are driving increased rates of obesity. It requires the Council and NHS working with other partners and stakeholders to identify local factors that are influencing decisions about diet and physical activity, and developing a local

plan to change the local system and so make healthier choices the easier choices.

Factors that influence individual choices range from the external environment, to social culture, behaviour, psychology and biology; many of which are outside individual control but heavily influence decisions about diet and physical activity. These factors continuously interact and result in a very complex system that promotes overweight.

**Figure 5: Example of whole systems working 1: healthier food environment**



Healthy food options need to be conveniently available in the places where we live, work and play. No one organisation is responsible for all of these settings, so partners must work together to change the whole food environment. This is an example of a whole system approach, with stakeholders and partners sharing a common vision, and then working together to make change happen across the whole system.

In 2019, Public Health England (now office for Health Improvement and Disparities (OHID)) with Leeds Beckett University and the Local Government Association (LGA) published the '*Whole Systems Approach to Obesity: a guide to support local approaches*'.<sup>3</sup> The guide was based on evidence appearing from Amsterdam and Australia about the success of implementing whole systems approaches to address overweight and obesity.<sup>27 28</sup> A number of local authorities in the UK are now testing and embedding systems thinking, with early evidence appearing to show positive impacts.<sup>29 30</sup>

To be effective, a local whole systems approach needs an extensive range of local stakeholders to work together to understand and tackle the different parts of the system.

**Figure 6:** Stakeholders recommended to develop a whole system approach to obesity



Source: OHID Whole Systems Approach Guide

**Developing the Havering whole system approach**

Over 150 stakeholders representing the many parts of the local system (as per figure 6) took part in two Havering Healthy Weight Summits to map the local causes of obesity and develop the local response.

Participants at Summit 1 identified over 120 local features that impact on maintaining a healthy weight. Figure 7 was produced as a result; a system map that captures the features, their interdependencies and their interconnections.

At Summit 2, participants used the system map below (figure 7) to identify where they could take action to deliver a place-based whole systems approach for the Borough, taking into account national and regional initiatives.

OHID and the Department for Health and Social Care (DHSC) defined a local whole systems approach as a response to “complexity through an ongoing, dynamic and flexible way of working. It enables local stakeholders, including communities, to come together, share an understanding of the reality of the challenge, consider how the local system is operating and where there are the greatest opportunities for change. Stakeholders agree actions and decide as a network how to work together in an integrated way to bring about sustainable, long-term systems change”





## National and regional initiatives

This strategy will complement and influence action at regional and national levels including the following initiatives:

- In 2020 Government announced a new national strategy to introduce legislation to restrict the placement of less healthy products in large retailers, both in store and online, to reduce the likelihood of impulse purchases. From 2025, there will be a ban on multi-buy promotions such as “Buy One Get One Free” and a ban on advertising less healthy products in the media.<sup>31</sup>
- In 2021 the London Childhood Obesity Taskforce, chaired by the Mayor for London, developed a 10 point plan for addressing childhood obesity, which includes policies that restrict the advertising of products high in fat, salt and sugar across all Transport for London estate in London boroughs and supports food businesses to sell healthier options.<sup>32</sup>

**Table 3:** National, regional, and local healthy weight initiatives

National	Regional	Local
<p><b>UK Government Tackling Obesity Strategy 2020</b> <sup>33</sup></p> <ul style="list-style-type: none"> <li>• Introduce legislation to require large out of home food businesses to include calorie information</li> <li>• Legislate to prevent supermarkets selling high fat, sugar and salt foods next to supermarket tills</li> <li>• Ban advertising of high fat, sugar and salt products being shown on TV and online before 9pm</li> <li>• Fund the expansion of weight management services and a campaign to support individuals to take steps to move towards a healthier weight</li> <li>• Legislate to end the promotion of foods high in fat, sugar and salt by restricting volume promotions such as buy one get one free</li> </ul>	<p><b>The London Plan 2021</b> <sup>34</sup></p> <ul style="list-style-type: none"> <li>• Recognises that Londoners’ physical and mental health is largely determined by the environment in which they live, work and play</li> <li>• The plan includes policies on developing a healthy city to enable health to flourish</li> </ul> <p><b>London Child Obesity Taskforce: 2021</b> <sup>35</sup></p> <p>The taskforce set 10 ambitions, and works with the GLA to provide content for local authorities to implement locally whilst doing research and influencing policy at a London region level.</p> <ol style="list-style-type: none"> <li>1. End child poverty</li> <li>2. Support women to breastfeed</li> <li>3. Skill up early years professionals</li> <li>4. Use NCMP to better support parents</li> <li>5. Ensure all nurseries and schools are enabling health for life</li> <li>6. Make free ‘London water’ available everywhere</li> <li>7. Create more active, playful streets</li> <li>8. Stop unhealthy marketing</li> <li>9. Transform fast-food businesses</li> <li>10. Fund good-food innovation</li> </ol>	<p>Healthy weight is a priority for the Council and Havering Place Based Partnership (HPBP) which includes BHRUT, NELFT, NEL Integrated Care Board</p> <ul style="list-style-type: none"> <li>• Vision for Havering “The Havering you want to be part of”</li> <li>• Havering Health and Wellbeing Board Strategy</li> <li>• Havering Place-Based Partnership Board priority</li> </ul> <p>Havering Healthy Weight strategy is or will be aligned with relevant Council and partner strategies and plans. This will include the Council’s:</p> <ol style="list-style-type: none"> <li>1. Havering Corporate Plan</li> <li>2. Havering Local Plan</li> <li>3. Havering Climate Change Action Plan</li> <li>4. Havering Community Safety Partnership Plan</li> <li>5. Havering Infant Feeding Plan</li> <li>6. Havering Housing Strategy</li> <li>7. Havering regeneration plan</li> <li>8. Parks Strategy</li> <li>9. Havering Active Travel Strategy</li> <li>10. Sports and Physical Activity Strategy</li> <li>11. Early Help Strategy</li> <li>12. Havering Advertising Policy</li> </ol>

## Assets and activities

The Borough already has many community assets that contribute to making Havering a healthy place to live:

- Safe and clean green areas with 16 parks achieving green flag status
- Five leisure centres
- 69 schools achieving Healthy School London accreditation
- Offer of healthy school meals
- Planning restrictions to limit the number of new takeaways within 400m from schools
- Thirteen school streets operating to help children travel safely to school and achieve the recommended daily 60-minute physical activity
- Over 45 schools achieving accreditation with the TfL Sustainable Travel: Active Responsible and Safe (STARS) programme which supports children to travel sustainably around the Borough.
- 116 early years' settings achieving the Healthy Early Years London accreditation
- The introduction of the UNICEF breastfeeding accreditation scheme in key places such as early years' centres, maternity settings and health visiting services to ensure residents get the knowledge they need from public services about breastfeeding
- Over 22 venues achieving breastfeeding welcome status which helps support families to feel confident breastfeeding when visiting local cafés, restaurants and venues.
- Buggy walk and talk sessions to help new parents to be active
- Adult weight management services, including a specialised offer for adults with a learning disability
- An exercise referral scheme which provides subsidised gym access for those with certain health conditions
- Healthy start vouchers being available for those who need them, giving those most in need the opportunity to buy discounted fruit and vegetables
- 50 business signed up for the water refill scheme
- Two community pantries in Harold Hill and Rainham to help people access affordable healthy food
- Free swimming for children in the school holidays



Harrow Lodge Leisure Centre

While a great deal is already happening to make the Borough a healthier place to live, work and play, clearly these actions and activities are not enough to hold back the rising rates of obesity.

## Moving forward

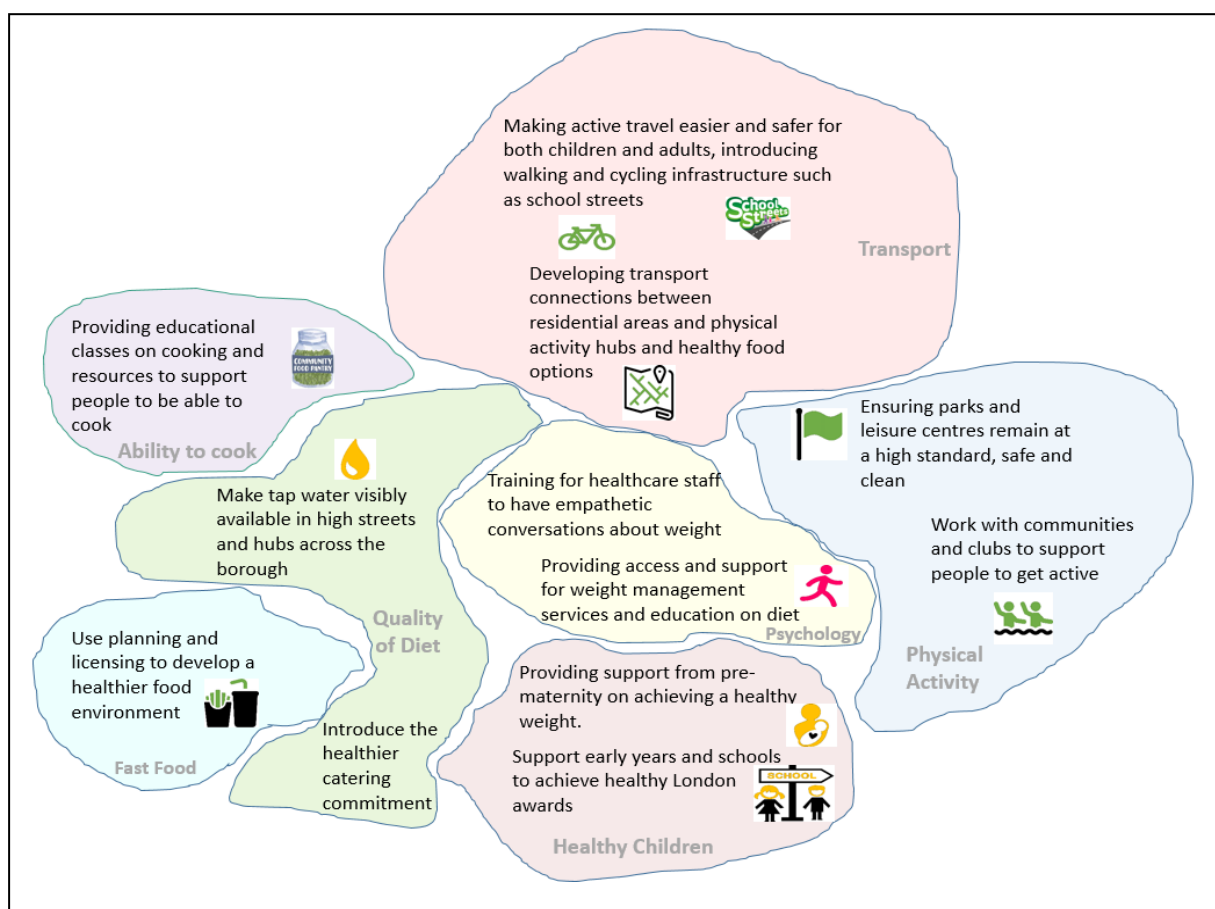
Developing this strategy has brought together the Council, the local NHS and other partners and stakeholders who are committed to working collaboratively to address the root causes of obesity and reduce inequalities.

The vision for Havering is that **within 20 years', childhood obesity will have been eradicated**, and that the **Borough will have become a healthier place to live, work and play**, a place where communities have come together to make the healthier choice the easier choice.

Changing from an obese-promoting system to one that promotes healthy weight requires action across the whole system and will take the lifetime of this strategy (or longer) to achieve. It is unlikely that there will be reductions in measures of overweight and obesity during the first few years of this strategy. What we will see in the first few years are changes to the system; creating the conditions that will eventually lead to improvements in rates of overweight and obesity.

By the end of this five-year strategy, we will have set in place firm foundations for achieving the twenty-year vision of eradicating childhood obesity.

**Figure 8:** Extract from the Havering Obesity System Map 2022 with examples of actions to be taken



## Aims

This strategy has two strategic aims; The first aim is to implement a Borough-level place based approach. This will build a firm foundation to support the twenty-year vision of eradicating childhood obesity, with the Borough becoming a place where the healthier choice is the easier choice. Developing a response which covers all the different causes of obesity and ensure support is available for people looking to lose weight.

**FACT BOX:** What does it mean for childhood obesity to be eradicated in Havering within 20 years?

In 2021/22, it was estimated that, in Havering, 10.4% of reception aged children (4-5 years old) and 25.8% of year 6 children (aged 10-11 years old) were obese.

The UK government set an ambition in 2018 to 'halve childhood obesity by 2030'. At that time, the obesity rate in Havering for Reception aged children was 9.5% and for year 6 aged children was 20.1%.

Havering is looking to go further and eradicate childhood obesity by 2044. This means that by 2044, less than 5% of Havering children will be obese.

Residents will see tangible differences in the Borough; changes that result in healthier foods being more accessible and available, opportunities for active travel being safer and more appealing and public spaces that encourage physical active, and opportunities to get involved in actions that contribute to the creation of a healthier Borough.

The second aim is to develop an intensive neighbourhood-level place-based approach to address inequalities in Gooshays and Heaton Wards which will identify changes needed for relevant services and the public realm, informed and prioritised by engagement with local communities.

Achieving the two aims depends on the continued commitment of and collaboration between partners. Achieving the twenty-year vision means maintaining that commitment for the long term. The governance structure set out below shows where progress will be monitored.

## Objectives

This strategy's aims will be delivered through eight objectives, grouped into three themes:

- Theme one is concerned with ensuring that the whole system is engaged and works together on the many drivers of obesity
- Theme two is concerned with the Borough becoming a place that promotes healthy weight; recognising that the places where people live, work and play shape the type of foods they eat and how physically active they are.
- Theme three recognises the importance of a life-course approach, and ensuring that individuals are supported to achieve a healthy weight.

All objectives will take into account inequalities described in this strategy and in the Obesity Health Needs Assessment. Progress will be monitored against outputs described in the table below. Outputs described for Havering apply to all wards in the borough, and will be further amplified in Harold Hill alongside additional outputs.

## Themes and outputs for delivering objectives

Theme 1: Engaging the whole system to work together on the many drivers of obesity		
Objective	Outputs – Havering	Outputs – Harold Hill
Objective 1: We will embed a whole systems approach across Havering which will be the foundation for addressing healthy weight. This will enable the introduction of policies and practices that have an influence on healthy weight.	<ul style="list-style-type: none"> <li>• A steering group formed, jointly led by the Council and NHS</li> <li>• A network formed comprising system partners.</li> <li>• Network partners to commit to a detailed action plan and contribute to monitoring its delivery. The action plan will be transformative and co-ordinated across a broad range of disciplines and stakeholders.</li> <li>• A training programme that covers whole systems approach and wider influences on health will be developed for Council key and non-key decision-makers</li> <li>• Local healthcare professionals trained to discuss healthy weight with their patients</li> </ul>	<ul style="list-style-type: none"> <li>• Engage a wide variety of system partners local to Gooshays and Heaton wards as part of the consultation on the healthy weight strategy</li> <li>• Host a workshop to design an enhanced and targeted neighbourhood-level place-based approach for Gooshays and Heaton wards</li> <li>• Network formed comprising system partners from across Gooshays and Heaton wards</li> <li>• A detailed action plan specific to Gooshays and Heaton wards with network partners committed. Ongoing monitoring in place</li> </ul>
Objective 2: We will develop partnerships which lead to effective community engagement into addressing healthy weight	<ul style="list-style-type: none"> <li>• A healthy weight alliance is formed and one meeting held per year.</li> <li>• Residents and businesses will take a central role in shaping the approach and delivering actions</li> <li>• Establishing a healthy food partnership to strengthen the local food system.</li> <li>• Production of a digital intelligence dashboard containing key statistics on weight and updated annually to inform the strategic approach.</li> </ul>	<ul style="list-style-type: none"> <li>• Councillors, residents and businesses in Gooshays and Heaton wards involved in shaping and the designing the approach</li> </ul>

Theme 2: Becoming a borough that promotes healthy weight		
Objective	Outputs – Havering	Outputs – Harold Hill
Objective 3: We will develop communities in Havering which promote and provides access to healthy, nutritious and sustainable food for all; enabling a healthy diet to become the easier option.	<ul style="list-style-type: none"> <li>• Public sector food premises in the Borough will promote healthy and affordable food and beverages, leading the way for a change in the food environment.</li> <li>• Private sector food retail offers are supported to become healthier food retail offers working to achieve the healthier catering commitment.</li> <li>• Enhancement on the restrictions in place on the availability of fast food outlets.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify local enablers and barriers to consuming a healthy diet in Gooshays and Heaton wards</li> <li>• Public sector business in Harold Hill to provide and promote healthy and affordable food and drink beverages</li> <li>• Identify key food business in Harold Hill to be involved in the healthy</li> </ul>

	<ul style="list-style-type: none"> <li>• Changes in advertising policy to support promotion of healthier products.</li> <li>• Encouraging healthier retail offers through the Havering business awards scheme.</li> </ul>	<p>weight strategy and assess food offers</p> <ul style="list-style-type: none"> <li>• Introduce public water fountains and ensure a healthy food retail offer as part of regeneration plans</li> </ul>
Objective 4: We will provide leadership to further shape the Borough as a place where rates of physical activity increase and residents enjoy the benefits that physical activity provides.	<ul style="list-style-type: none"> <li>• The development of active travel interventions including enhancement of the street scene.</li> <li>• The expansion of school streets where appropriate.</li> <li>• Public sector organisations demonstrate system leadership in approaches to active travel.</li> <li>• Havering parks continue to be safe and clean and provide opportunities for residents to be physically active.</li> <li>• Review health impact assessments for large developments undertaken by developers &amp; leverage opportunities to promote and support healthy weight.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify enablers and barriers to physical activity for children and adults in Gooshays and Heaton wards</li> </ul>

Theme 3: Taking a life-course approach to enabling people to achieve and maintain a healthy weight		
Objective	Outputs - Havering	Outputs – Inequalities
Objective 5: We will support healthy pregnancies and help families achieve the best start to life for their babies and young children. (pre-conception – 5 years old)	<ul style="list-style-type: none"> <li>• Those contemplating pregnancy are supported to optimise their health and wellbeing prior to conception to improve pregnancy outcomes and give their child the best start in life.<sup>36</sup></li> <li>• Introduce the forthcoming government standards on healthy weight from maternity.<sup>37</sup></li> <li>• Develop further support options and environments that enable those mothers who wish to breastfeed.</li> <li>• Early years settings are supported to achieve the 'Healthy Early Years London' award.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify enablers and barriers for young families achieving a healthy weight</li> </ul>
Objective 6: We will support children and young people (5 years old to 18 years old), along with their families to achieve a healthy weight	<ul style="list-style-type: none"> <li>• Schools are supported to achieve the 'Healthy Schools London' award.</li> <li>• The family support programme is available for those who wish to learn about healthy behaviours.</li> <li>• Through the national childhood measurement programme, identify children and families who may need extra support.</li> <li>• Provide a children's weight management support to those who are eligible for the programme that enable individuals to achieve a healthier weight.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify enablers and barriers for young children achieving a healthy weight in Gooshays and Heaton wards</li> <li>• Further promote the children's weight management service to eligible families in Gooshays and Heaton wards</li> </ul>
Objective 7: There will be greater opportunity for adults to achieve and maintain a healthy weight,	<ul style="list-style-type: none"> <li>• Public and private sector workplaces and community settings enable</li> </ul>	<ul style="list-style-type: none"> <li>• Identify enablers and barriers for adults achieving a healthy</li> </ul>

including information / support to lose excess weight and maintain a healthy weight (18 years old +).	<p>good health by achieving the Good Work Standard.</p> <ul style="list-style-type: none"> <li>• Promote national tailored information campaigns which have been informed by behavioural science and provide trustworthy up to date and consistent advice.</li> <li>• Provide weight management support to those who are eligible for the programme that enable individuals to achieve a healthier weight.</li> </ul>	<p>weight in Gooshays and Heaton wards</p> <ul style="list-style-type: none"> <li>• Identify key workplaces in Harold Hill to participate in the development of a neighbourhood-level approach</li> </ul>
---	---	---

## Outcomes

The following outcomes should be achieved over the five-year lifetime of the strategy:

- The development of the Borough as a place that promotes healthy weight, where the healthier choice is the easiest choice, with foundations laid to achieve the twenty-year vision of eradicating childhood obesity
- An improvement in healthy weight levels in reception aged children across the Borough, compared to the England average
- An improvement in measures of excess weight among year 6 children in the targeted neighbourhood of Gooshays and Heaton wards, compared to statistical neighbours

## Indicators

The following indicators will be monitored periodically:

1. Breastfeeding at 6-8 weeks
2. Child excess weight in 4-5yrs old (reception age)
3. Child excess weight in 10-11yrs old (year 6 age)
4. Number of children meeting physical activity guidelines
5. Number of adults eating '5 a day'
6. Number of adults meeting physical activity guidelines
7. Percentage of adults classed as having excess weight
8. Percentage of adults classed as obese
9. Effective partnership working, including an annual assessment of the system response in accordance with the *'What Good Looks Like'* guide

## Delivering the strategy

A steering group will be formed that will be jointly led by the Council and NHS. The steering group will be accountable to the Health and Wellbeing Board, the Place-based Partnership, and Council Cabinet.

The steering group will oversee implementation of the place-based Borough-level whole system approach, by:

- ensuring that a detailed action plan is produced that captures actions proposed by partners and stakeholders
- monitoring progress against the action plan
- periodically assessing the state of the local system
- producing an annual report for the Havering Health and Wellbeing Board, the Place Based Partnership, and Cabinet. The report will be published on the Council's website

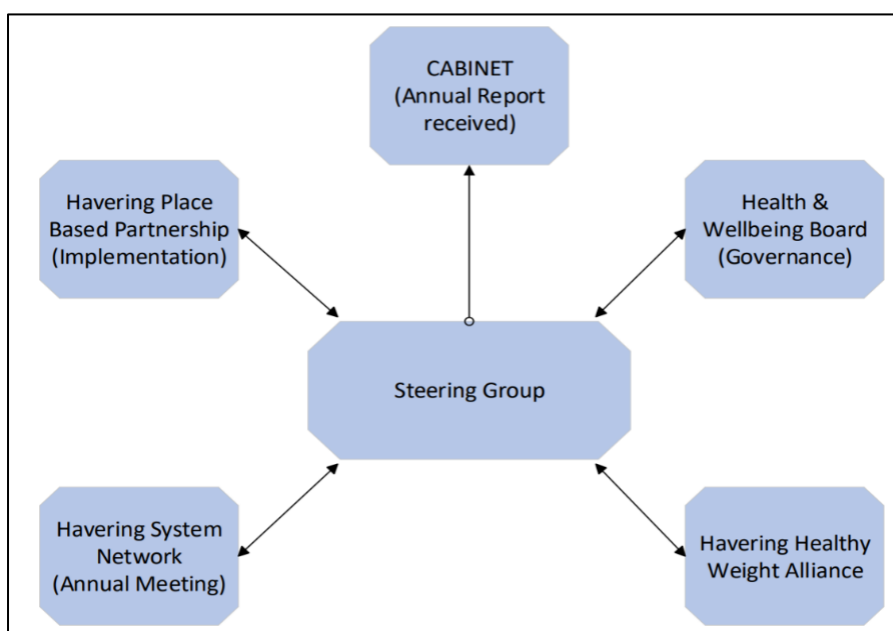
The Steering Group will oversee the

- setting up of a multi-agency system-wide Havering Healthy Weight System Network with a broader membership comprising those organisations responsible for actions
- development of a Healthy Weight Alliance; giving residents and organisations opportunity to shape further action and be part of the solution to addressing obesity

The Steering Group will oversee the approach for developing an intensive place-based neighbourhood level whole system approach for Gooshays and Heaton wards, including

- governance
- detailed action plan

**Figure 9: Governance Structure for the delivery of the healthy weight strategy**



Havering System Network: a forum of organisations that are responsible for actions to implement the place-based whole system approach for the Borough

Havering Healthy Weight Alliance: a group of residents and community groups who are committed to addressing the problem of obesity



## Consultation

This healthy weight strategy has been drafted in collaboration with partners and stakeholders. A wide public consultation on the draft strategy will take place during January to March 2024; inviting views and comments of residents and stakeholders in the Borough, including businesses, the voluntary and community sector, and the workforces of statutory agencies.

The consultation will take the form of online engagement which will include a social media campaign and online information sessions. Health champions will also raise awareness of the consultation through face to face engagement with communities, with a particular focus on those groups where rates of obesity and overweight are higher. As part of the consultation, the following documents will be published: this draft Healthy Weight Strategy, the Obesity Health Needs Assessment which has informed the strategy, and the Equality and Health impact assessment.

At the conclusion of the consultation period, a report will be produced that summarises consultation responses and the changes that have been made to the final draft strategy in response to the consultation. The final draft strategy will be presented to the Havering Health and Wellbeing Board and the Havering Place based Partnership for endorsement, and subsequently to Havering Cabinet for approval and adoption.

## Appendix 1: Acknowledgements and thanks

Havering Council led the development of this strategy, working closely with partner agencies and wider stakeholders. The Council thanks the representatives from the many organisations who took time to attend summits and participate in discussions, and further thanks them for their commitment to future action.

Age UK Redbridge, Barking and Havering  
Barking, Havering and Redbridge University Hospitals NHS Trust  
Cranham Health Centre  
Drapers Maylands Primary School  
Engayne Primary School  
Everyone Active  
Havering Adult College  
Havering Crest Primary Care Network  
Havering Diabetes UK Network  
Havering Disabled Sports Association  
Havering Marshall Primary Care Network  
Havering MIND  
Having North Primary Care Network  
Havering South Primary Care Network  
Havering Volunteer Centre  
Kent Community Health  
London Sport  
My Health Matters  
North East London Foundation Trust  
North East London Integrated Care Board  
North East London Local Pharmacy Committee  
Outdoor Classroom  
Romford Business Improvement District  
St Edwards Medical Centre  
Sanders Draper School  
Squirrels Heath Infant School  
Tigers Football Club  
Transport for London  
University College London

## Appendix 2: Principles of a whole system approach

The principles that have guided the development of this strategy, and which will continue to guide its implementation, are set out by the Association of Directors of Public Health (ADPH) and OHID in *What Good Healthy Weight for all Looks Like*, a document that provides a high-level framework for a local approach to promoting healthy weight.<sup>38</sup> A corresponding self-assessment matrix enables local systems to assess the progress in these areas.

The table below summarises the principles, outlining what success looks like. The Havering system will be assessed annually using these principles.

1	Systems leadership	Anchor organisations will work in a way that exemplifies the approach. Local system leaders including politicians, Council leaders, Director of Public Health and NHS leaders will prioritise and champion achieving a healthy weight for the Borough.
2	A long-term whole system approach	The Borough will develop an approach which is long-term, where local stakeholders work together using all available policy levers across the system in combination with systems thinking.
3	A health-promoting environment	The response focuses on addressing the environments in which people live, play and work to stop the excess calorie consumption and encourage active lifestyles.
4	Community Engagement & Partnership	Local communities will be given the opportunity to be at the centre of decision-making, engaged in the whole system approach and drive local solutions. The Borough will work as one to address obesity.
5	Focus on inequalities	There are marked inequalities in the drivers of obesity such as access to healthy food and overall rates of obesity. The approach will work to address those deep rooted system causes and those most in need.
6	A life course approach	The work will target those most in need or those at highest risk at every age group with a focus on maximising prevention and early intervention. The approach will include working collaboratively with specific life course settings such as maternity services, early years, schools, workplaces and services for older people.
7	Monitoring, evidence, evaluation and innovation	Evaluating actions and approaches, continuous improvement and sharing data and good practice across the local system to inform decisions and practice.

## Appendix 3: Glossary

**Anchor organisations:** large organisations that are unlikely to relocate and have a significant stake in their local area. They have sizeable assets that can be used to support their local community's health and wellbeing and tackle health inequalities, for example, through procurement, training, employment, professional development, and buildings and land use.

**Place based approach:** understanding the issues, interconnections and relationships in a place and coordinating action and investment to improve the quality of life for that community.

**Shared vision:** A clear and aspirational statement of what the whole systems approach is trying to achieve.

**Statistical neighbours:** Areas that have similar characteristics.

**System:** A system is a collection of interdependent and interconnected parts. If something happens to one part of the system, other parts of the system will be affected.

**System mapping (for obesity):** A process to identify and visually represent how the local causes of obesity are linked.

**System network:** A broad set of stakeholders from the local place, from both within and outside of the local authority, responsible for the sustained implementation, adaptation and refinement of the whole systems approach and action plans.

**Systems thinking:** A way of looking at, learning about, and understanding complex situations

**Whole systems approach:** A local whole systems approach responds to complexity through an ongoing, dynamic and flexible way of working. It enables local stakeholders, including communities, to come together, share an understanding of the reality of the challenge, consider how the local system is operating and where there are the greatest opportunities for change. Stakeholders agree actions and decide as a network how to work together in an integrated way to bring about sustainable, long term systems change.

## References

---

- <sup>1</sup> London Borough of Havering [Havering Corporate Plan](#)
- <sup>2</sup> London Borough of Havering. 2019. Joint Health and Wellbeing Strategy 2019/20 – 2023/24
- <sup>3</sup> Public Health England. 2019. Whole systems approach to obesity A guide to support local approaches to promoting a healthy weight
- <sup>4</sup> OHID. 2023. Public Health Profiles. Reception prevalence of overweight (including obesity) (4-5yrs).
- <sup>5</sup> OHID. 2023. Public Health Profiles. Year 6 prevalence of overweight (including obesity) (10-11yrs).
- <sup>6</sup> OHID. 2023. Public Health Profiles. Percentage of adults (aged 18 plus) classified as overweight or obese.
- <sup>7</sup> OHID. 2023. Public Health Profiles. Percentage of adults (aged 18 plus) classified as obese
- <sup>8</sup> Carl Baker. 2023. Research Briefing: Obesity Statistics.
- <sup>9</sup> Cancer Research UK. 2016. Tipping the Scales: Why preventing obesity makes economic sense
- <sup>10</sup> Cancer Research UK. 2022. Overweight and obesity prevalence projections for the UK, England, Scotland, Wales and Northern Island, based on data to 2019/20.
- <sup>11</sup> Chief Medical Officer, 2019. Time to Solve Childhood Obesity. An Independent Report by the Chief Medical Officer, 2019 Professor Dame Sally Davies.
- <sup>12</sup> OHID. 2023. Guidance: National Child Measurement Programme 2023: information for schools
- <sup>13</sup> Cancer Research UK. 2023. How does obesity cause cancer.
- <sup>14</sup> Office for Health Improvement and Disparities. 2022. Adult obesity: applying All Our Health.
- <sup>15</sup> Ma, Y., Ajinakina, O., Steptoe, A., Cadar D. 2020. Higher risk of dementia in English older individuals who are overweight or obese. *International Journal of Epidemiology*, 49, 1353-1365.
- <sup>16</sup> OHID. 2022. Small area associations between breastfeeding and obesity
- <sup>17</sup> PHE. 2015. Making the case for tackling obesity – why invest
- <sup>18</sup> The Department for Health and Social Care. 2023. Government plans to tackle obesity in England
- <sup>19</sup> Novo Nordisk & Frontier Economics. 2022. Estimating The Full Costs Of Obesity
- <sup>20</sup> Local Government Association. 2017. Social Care and Obesity: A Discussion Paper.
- <sup>21</sup> LGA, PHE. 2013. Social Care and Obesity A discussion paper
- <sup>22</sup> LGA. 2020. Social care and obesity.
- <sup>23</sup> National Centre for Social Research & Public Health England. (2015). British Social Attitudes: Attitudes to obesity. Findings from the 2015 British Social Attitudes Survey.
- <sup>24</sup> Prior, G. et al. 2011. Exploring food attitudes and behaviours in the UK: Findings from the Food and You Survey 2010. FSA. <https://www.food.gov.uk/sites/default/files/media/document/foodand-you-2010-main-report.pdf>
- <sup>25</sup> Butland, B., Jebb, S., Kopelman, P., McPherson, K., Thomas, S., Mardell, J. and Parry, V., 2007. Tackling obesity: future choices-project report (Vol. 10, p. 17). London: Department of Innovation, Universities and Skills.
- <sup>26</sup> Henry Dimbelby. 2022. The National Food Strategy
- <sup>27</sup> Amsterdam Healthy Weight Programme. <https://www.amsterdam.nl/sociaaldomein/aanpak-gezond-gewicht/amsterdam-healthy-weight-programme/>
- <sup>28</sup> Healthy Together Victoria. <https://www.health.vic.gov.au/publications/what-is-healthy-together-victoria>
- <sup>29</sup> Bagnall, A.M., Radley, D., Jones, R., Gately, P., Nobles, J., Van Dijk, M., Blackshaw, J., Montel, S. and Sahota, P., 2019. Whole systems approaches to obesity and other complex public health challenges: a systematic review. *BMC public health*, 19, pp.1-14.
- <sup>30</sup> LGA. 2023 Access Case Studies <https://www.local.gov.uk/case-studies>
- <sup>31</sup> UK Government, 2023. Government plans to tackle obesity in England. <https://healthmedia.blog.gov.uk/2023/06/07/government-plans-to-tackle-obesity-in-england/>
- <sup>32</sup> GLA, 2019. TfL junk food ads ban will tackle child obesity <https://www.london.gov.uk/programmes-strategies/communities-and-social-justice/food/tfl-junk-food-ads-ban-will-tackle-child-obesity>
- <sup>33</sup> Department of Health and Social Care. 2020. Tackling obesity: empowering adults and children to live healthier lives
- <sup>34</sup> GLA. 2021. The London Plan.
- <sup>35</sup> London Childhood Obesity Taskforce. 2022. Every child a healthy weight still a critical priority for London
- <sup>36</sup> UK Government, 2022. Women's Health Strategy for England.
- <sup>37</sup> NICE. 2023. Maternal and child nutrition
- <sup>38</sup> ADPH and PHE 2019. What Good Healthy Weight Looks like. <https://www.adph.org.uk/wp-content/uploads/2019/07/What-Good-Healthy-Weight-Looks-Like.pdf>