

Worcestershire Health & Well-being Board

JSNA Briefing on Adult Excess Weight

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Summary

- The World Health Organization (WHO) defines overweight and obesity as “abnormal or excessive fat accumulation that may impair health”.
- The simplest explanation of the cause of excess weight is when energy intake exceeds energy expenditure resulting in an imbalance of calories consumed and calories expended.
- Obesity is a significant public health concern which results in long-term negative social, psychological and physical ill-health often leading to poor quality of life and reduced life expectancy.
- In 2016/17, it was estimated that 62% of adults in Worcestershire had excess weight. This was a similar rate to the national average of 61.3%.
- In 2016/17, 67.2% of adults were estimated to be physically active in Worcestershire. This was a similar rate to the national average of 66%.
- In 2014, Worcestershire had a lower density of fast food outlets per head of population than England as a whole (72.6 per 100,000 population vs 88.2 per 100,000 population respectively).
- In 2016/17 the proportion of the Worcestershire population estimated to be eating the recommended '5 a day' portions of fruit or vegetables was similar to the national average at 57.5% (vs 57.4%).
- In Worcestershire, if the obesity rate continues to increase in a linear way as it has done nationally, a 27% increase in people classified as obese is projected by 2025. However, if the rate has stabilised a 1.9% increase is projected over the same period.
- The Health and Well-being Board have identified 'Being Active' as one of three priorities for 2016-2021.
- Actions within the Obesity Action Plan (2013-2016) have been embedded into practice across the County to ensure a continued focus on tackling obesity.

Background

Definition of Overweight and Obesity

The World Health Organization (WHO) defines overweight and obesity as “abnormal or excessive fat accumulation that may impair health”.

In adults, a simple index of weight-for-height called Body Mass Index (BMI) is commonly used to classify overweight and obesity. BMI is calculated by dividing a person's weight in kilograms by the square of their height in meters (kg/m²). The WHO defines overweight and obesity in adults as follows:

- Overweight is a BMI greater than or equal to 25; and
- Obesity is a BMI greater than or equal to 30.

The terms overweight and obesity are often used interchangeably when referring to an excess of body fat and increased weight-for-height¹.

In order to measure abdominal obesity waist circumference is measured and categorised by sex- specific thresholds as illustrated in Table 1.

Table 1 Classification of Overweight and Obesity by BMI, Waist Circumference, and Associated Disease Risks

Classification of Overweight and Obesity by BMI, Waist Circumference, and Associated Disease Risks						
Disease Risk* Relative to Normal Weight and Waist Circumference						
Men 102 cm Men > 102 cm (40 in)						
Women 88 cm Women > 88 cm (35 in)						
	Definition (BMI score)	Obesity Class	Disease Risk			
Underweight	<18.5					
Healthy weight	18.5 - 24.9		Increased	High		
Overweight	25.0 - 29.9	I	High	Very High		
Obese (exc. morbidly obese)	30.0 - 39.9	II	Very High	Very High		
Morbidly obese	=> 40	III	Extremely	Extremely	High	
For men, waist circumference of less than 94 cm is low, 94–102 cm is high and more than 102 cm is very high. For women, waist circumference of less than 80 cm is low, 80–88 cm is high and more than 88 cm is very high						
BMI classification	Waist circumference			Comorbidities present		Action to take
	Low	High	Very high			
Overweight		1	2	2	3	1 General advice on healthy weight and lifestyle
Obesity I		2	2	2	3	2 Diet and physical activity
Obesity II		3	3	3	4	3 Diet and physical activity; consider drugs
Obesity III		4	4	4	4	4 Diet and physical activity; consider drugs; consider surgery

Source: NICE (2017), Adapted

¹ World Health Organisation Obesity and overweight Fact sheet N°311 Updated October 2017
<http://www.who.int/mediacentre/factsheets/fs311/en/>

Causes of Excess Weight

The simplest explanation of the cause of excess weight is when energy intake exceeds energy expenditure resulting in an imbalance of calories consumed and calories expended.

It is now generally accepted by health and other professionals that the current prevalence of excess weight in the UK population is primarily caused by people's latent biological susceptibility interacting with a changing environment that includes more sedentary lifestyles and increased dietary abundance.

Human biology, early life development, eating and physical activity, individual beliefs and attitudes and broader economic and social factors all have a role to play in determining obesity. The complex nature and inter-relationship of the variables can be explained in terms of:

1. Human Biology

- The inability of the human body to maintain energy balance to keep the body at a constant weight as a result of technological progress outstripping human evolution in a fast-changing world.
- There is a fundamental biological necessity for food and the body has evolved to make sure that its needs are met often with limited sensitivity to abundance and the amount of calories contained in our food.

2. Lifestyle

- Generally in the UK, as society has changed, there have been systematic reductions in energy expenditure, as a consequence of fewer manual jobs, increases in car ownership and the rise of labour saving devices for use at home and work.
- There is a psychological conflict between what people want e.g. fatty, sweet foods and their desire to be healthy and/or slim in addition to mixed feelings and beliefs about healthy lifestyle choices that complicate individual choices to maintain a balanced diet.

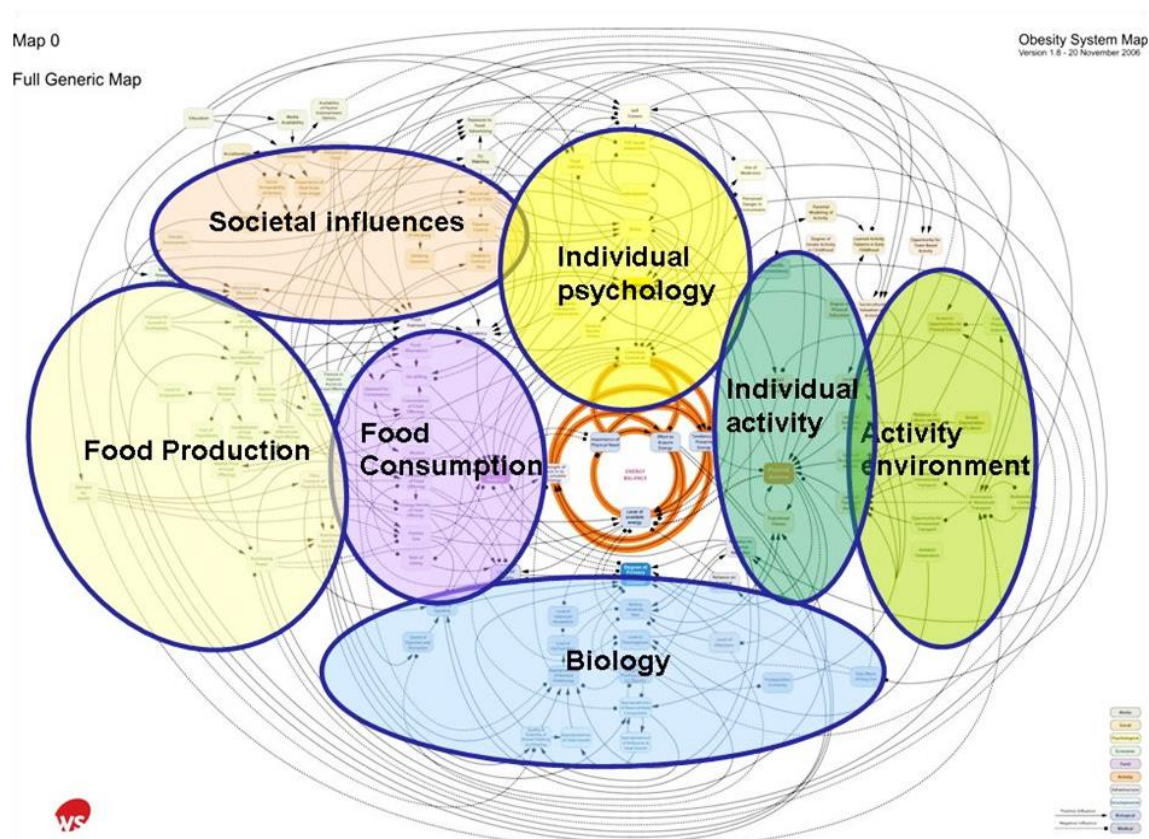
3. The Environment

- Refers to the entire range of social, cultural and infrastructural conditions that influence an individual's ability to adopt a healthy lifestyle including the effect of technological advancement e.g. cars, television and digital interfaces that contribute to time spend sitting down.

Other important components that influence the balance of energy are societal and food production or consumption which may be explained within the three main themes above.

The complexity of relationships and determinants of energy balance is illustrated by The Obesity System Map (Figure 1).

Figure 1 The complex causes of obesity



Source: Foresight UK (2007)

The Obesity System Map provides arguably the most comprehensive ‘whole systems’ view of the relationships and determinants of energy balance. The map encourages interventions to be multi-component in order to influence the different aspects of the system. It also highlights the need to address prevention so that a healthy environment that promotes healthy weight is created in the first place. The map shows the interdependencies, interrelationships and variables from which future scenarios and options for policy responses may be drawn².

Health Implications of Excess Weight

Obesity is a significant public health concern which results in long-term negative social, psychological and physical ill-health often leading to poor quality of life and reduced life expectancy. Higher levels of deprivation are associated with an increased likelihood of obesity in both adults and children, and once established; four out of five children go on to become obese adults whilst many adults struggle to lose excess weight, often regaining any

² Government Office for Science, Tackling Obesities: Future Choices – Project Report; https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/287937/07-1184x-tackling-obesities-future-choices-report.pdf (accessed 20/06/2018)

weight that has been lost through dieting³. According to Foresight UK, common health conditions and statistical information associated with obesity in adults include:

1. Type 2 diabetes
 - 90% of people with type 2 diabetes have a body mass index (BMI) of >23 kg/m²
2. Hypertension
 - 5 fold risk in obesity
 - 66% of hypertension is linked to excess weight
 - 85% of hypertension is associated with a BMI >25 kg/m²
3. Dyslipidaemia progressively develops as BMI increases from 21kg/m² with rise in small particle low-density lipoprotein (LDL)
4. Coronary artery disease (CAD) and stroke
 - 2.4 fold in obese women and two-fold in obese men under the age of 50 years
 - 70% of obese women with hypertension have left ventricular hypertrophy
 - Obesity is a contributing factor to cardiac failure in >10% of patients
 - Overweight/obesity plus hypertension is associated with increased risk of ischaemic stroke
5. Respiratory effects
 - Neck circumference of >43 cm in men and >40.5 cm in women is associated with obstructive sleep apnoea, daytime somnolence and development of pulmonary hypertension
6. Cancers
 - 10% of all cancer deaths among non-smokers are related to obesity (30% of endometrial cancers)
7. Reproductive function
 - 6% of primary infertility in women is attributable to obesity
 - Impotency and infertility are frequently associated with obesity in men
8. Osteoarthritis (OA)
 - Frequent association in the elderly with increasing body weight - risk of disability attributable to OA equal to heart disease and greater than any other medical disorder of the elderly

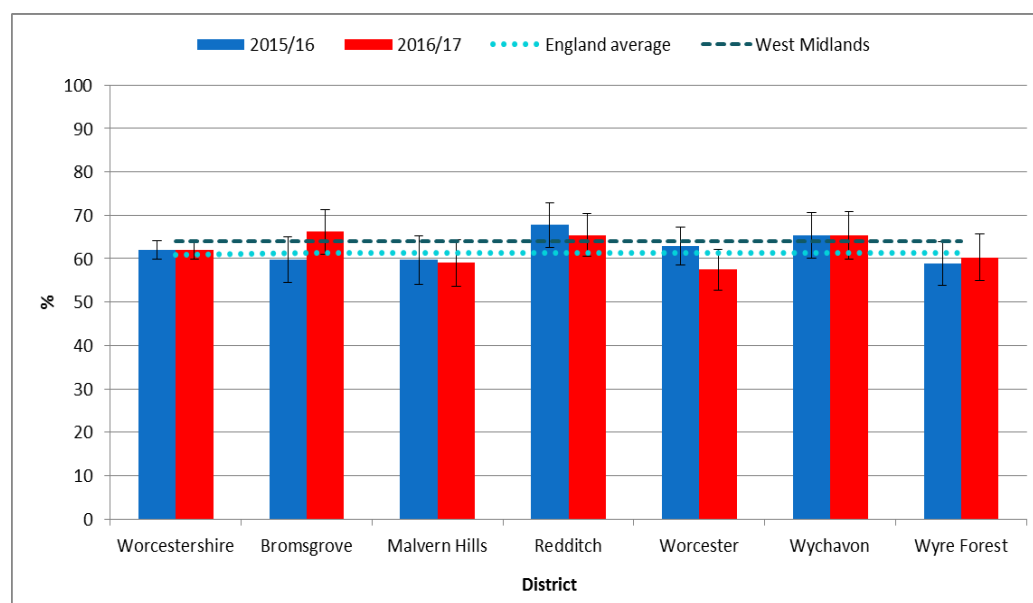
³ Foresight (2007) Government Office for Science: Tackling Obesities: Future Choices –Project report
PHE, (2017) Public Health Outcomes Framework: <https://fingertips.phe.org.uk/profile/public-healthoutcomes-framework>

The Worcestershire Picture

Adult Excess Weight

In Worcestershire, in 2016/17, it was estimated that 62% of adults had excess weight. This was a similar rate to the national average of 61.3%. All Worcestershire districts had estimated rates of adult excess weight that were similar to the England average and to each other (Figure 2).

Figure 2: Percentage of adults (aged 18+) classified as overweight or obese (2015-16) and (2016-17)



Source: Public Health Outcomes Framework (2017). 2.12 - Percentage of adults (aged 18+) classified as overweight or obese.

Other key indicators in the Public Health Outcomes Framework which relate to excess weight include:

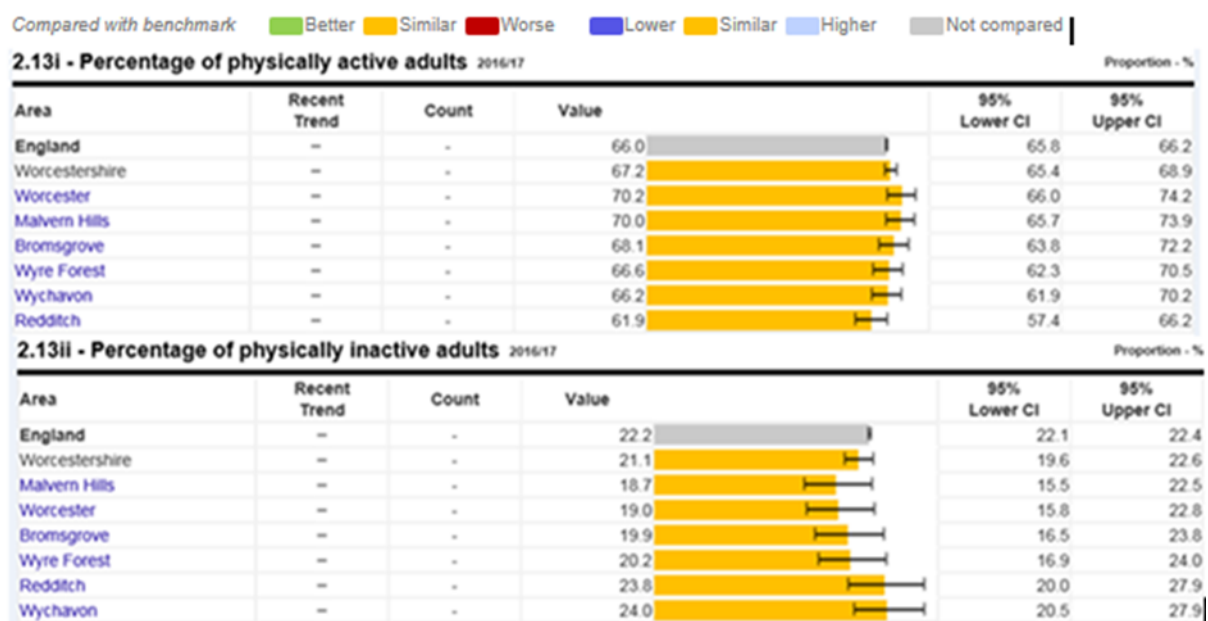
1. **Density of fast food outlets** - gives an understanding of the availability of fast food in an area.
2. **Percentage of Active/Inactive adults** – Regular physical activity is also associated with a reduced risk of diabetes, osteoporosis and colon/breast cancer and with improved mental health.
3. **The proportion of the population eating the recommended ‘5-a-day’** portions of fruit and vegetables.

Percentage of Active/Inactive Adults

In 2016/17, 67.2% of adults were estimated to be physically active⁴ in Worcestershire. This was a similar rate to the national average of 66%. All Worcestershire districts had similar estimated rates of physical activity to the national average (Figure 3).

In 2016/17, 21.1% of adults were estimated to be physically inactive⁵ in Worcestershire. This was a similar rate to the national average of 22.2%. All Worcestershire districts had similar estimated rates of physical inactivity to the national average (Figure 3).

Figure 3: Percentage of Active and Inactive Adults 2016/17



Source: Public Health England (based on Active Lives survey, Sport England: [Public Health Profiles](#))

⁴ Meet the Chief Medical Officer's (CMO's) recommendations for physical activity (150+ moderate intensity equivalent minutes per week).

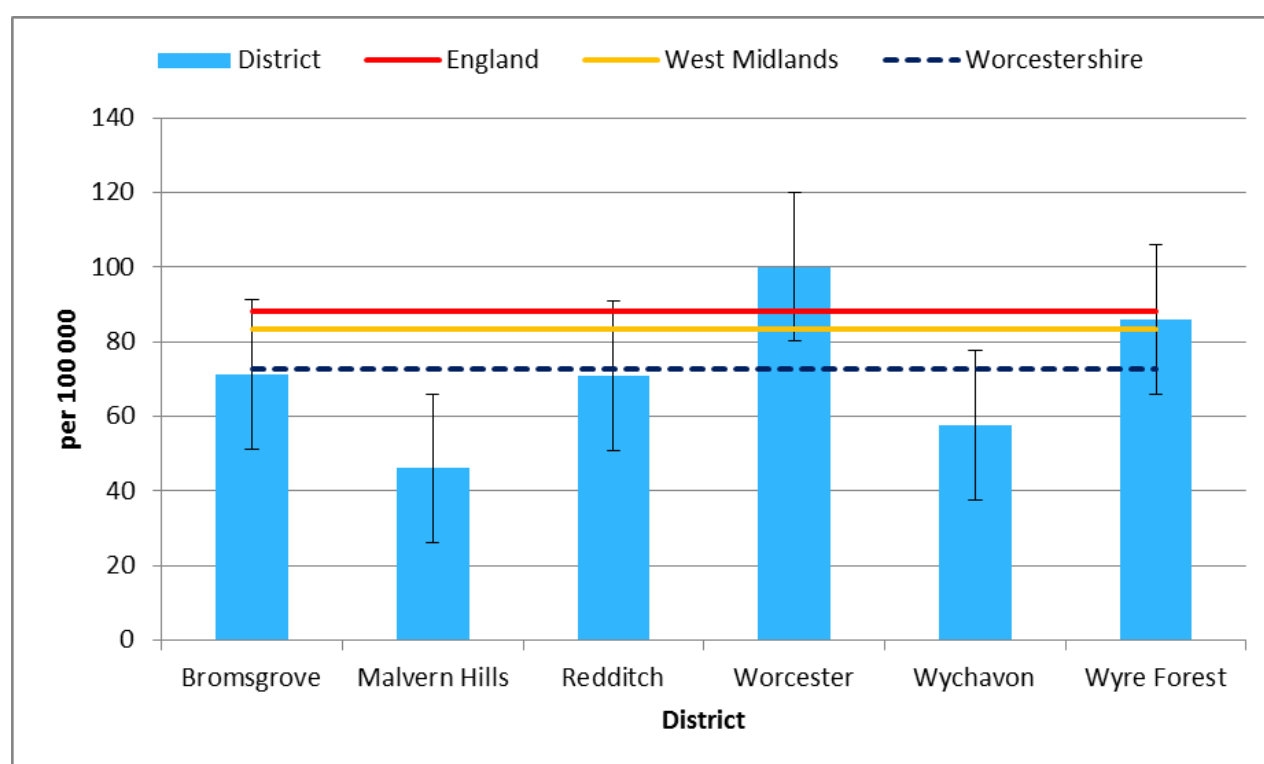
⁵ Undertake less than 30 moderate intensity equivalent minutes per week.

Fast Food Density

According to Foresight UK, there is a strong association between food production and consumption and obesity.

- In 2014, Worcestershire had a lower density of fast food outlets per head of population than England as a whole (72.6 per 100,000 population vs 88.2 per 100,000 population respectively).
- In 2014, Worcester District had a higher density of fast food outlets than the county average (100.2 vs 72.6 per 100,000 population respectively) and Malvern Hills District had a lower density of fast food outlets than both the county and England average (46.1 vs 72.6 and 88.2 per 100,000 population respectively).

Figure 4: Fast Food Density



Source: PHE (2017) Public Health Profiles: <https://fingertips.phe.org.uk/>.

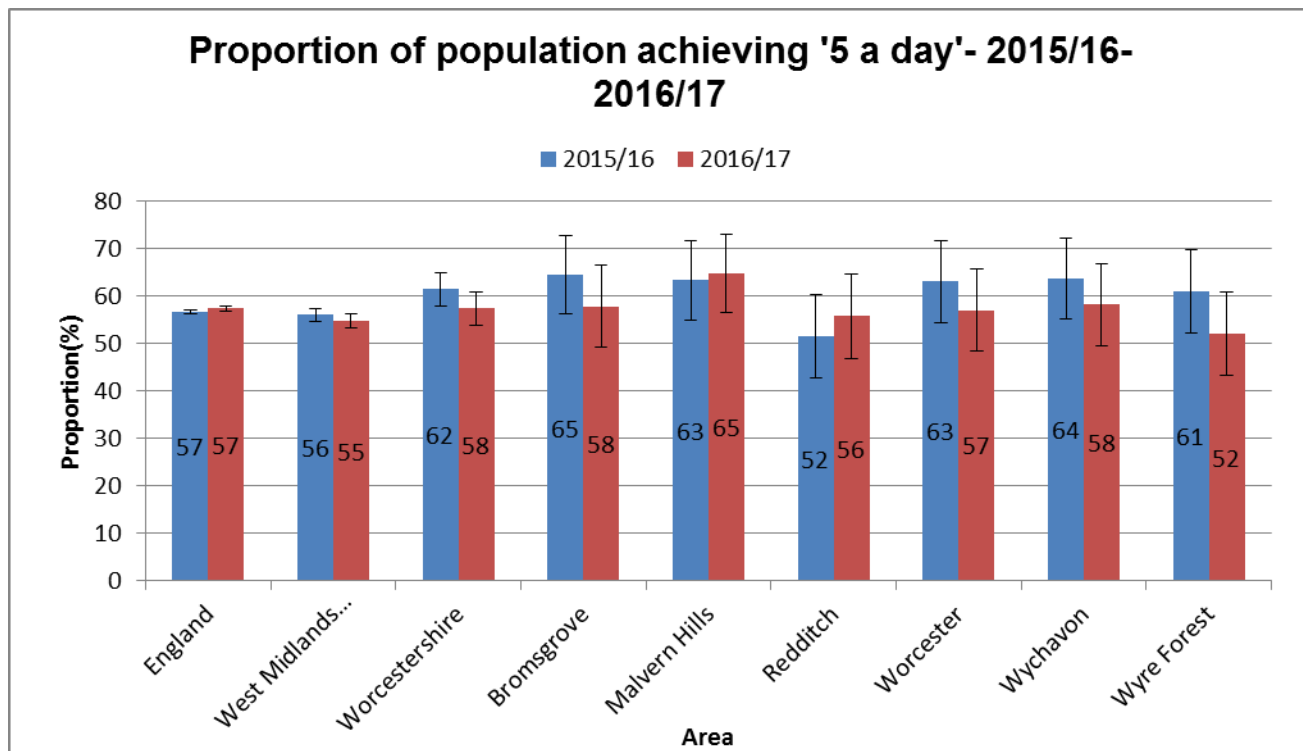
Population Eating the Recommended '5 a day'

In 2016/17 the proportion of the Worcestershire population estimated to be eating the recommended '5 a day' portions of fruit or vegetables was similar to the national average at 57.5% (vs 57.4%).

Of the Worcestershire districts, Wyre Forest performed relatively poorly on this indicator as only 52.1% of adults were estimated to have met the recommendation (lower than the national average).

Malvern Hills performed relatively well on this indicator as 64.9% of adults were estimated to meet the recommendation (higher than the national average). The other districts all performed similarly to the national average (Figure 5).

Figure 5: Proportion of the population meeting the recommended '5-a-day' on a 'usual day' (adults) (2015/16-2016/17)



Source: PHE (2018) Public Health Profiles: <https://fingertips.phe.org.uk/>

Obesity Projections

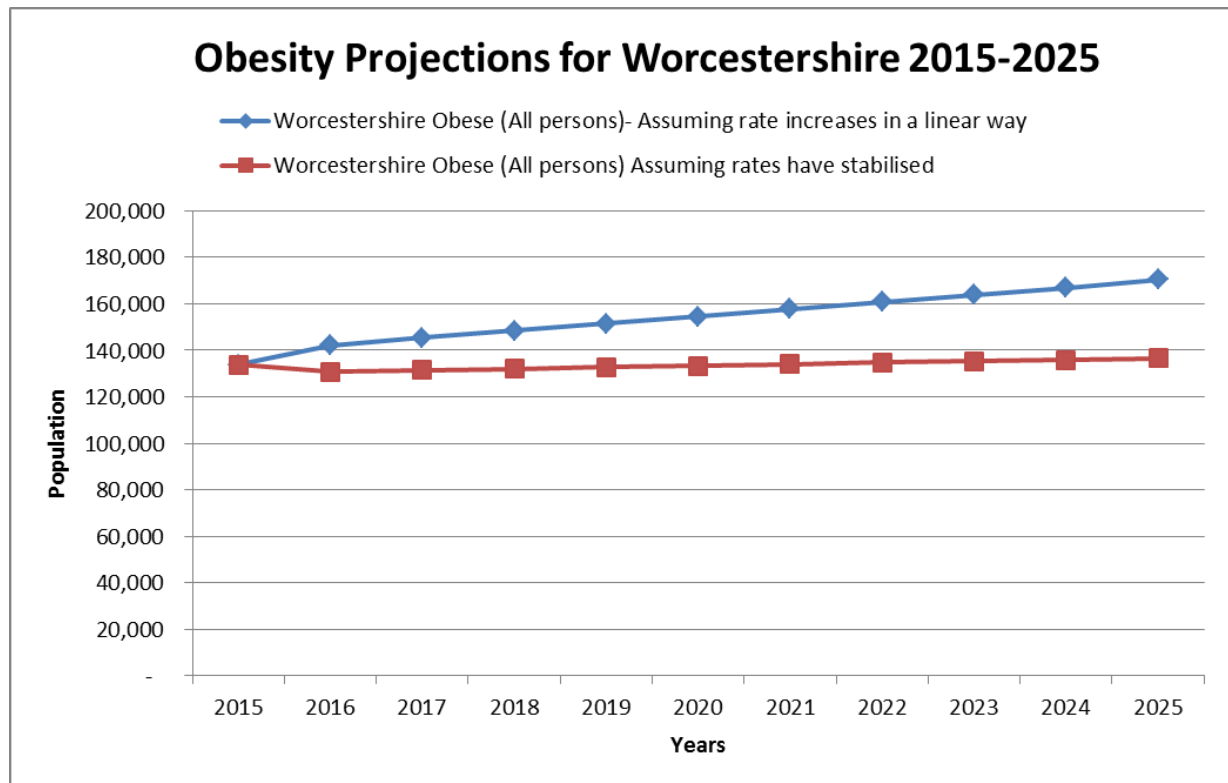
Obesity projections were calculated using an Excel Forecasting function. Two different scenarios were modelled because there is some uncertainty as to whether obesity rates have stabilised or whether they will continue to rise in a linear way⁶.

In Worcestershire, if the obesity rate continues to increase in a linear way, a 27% increase in people classified as obese is projected by 2025. If the rate has stabilised a 1.9% increase is projected over the same period.

Depending on which projection method is used estimates of how many people will be obese in Worcestershire in 2025 vary from 136,536 to 170,472 (Figure 6).

Both methods suggest that by 2025 there will be a large percentage increase in the number of older people (75+) who are obese (Figure 7).

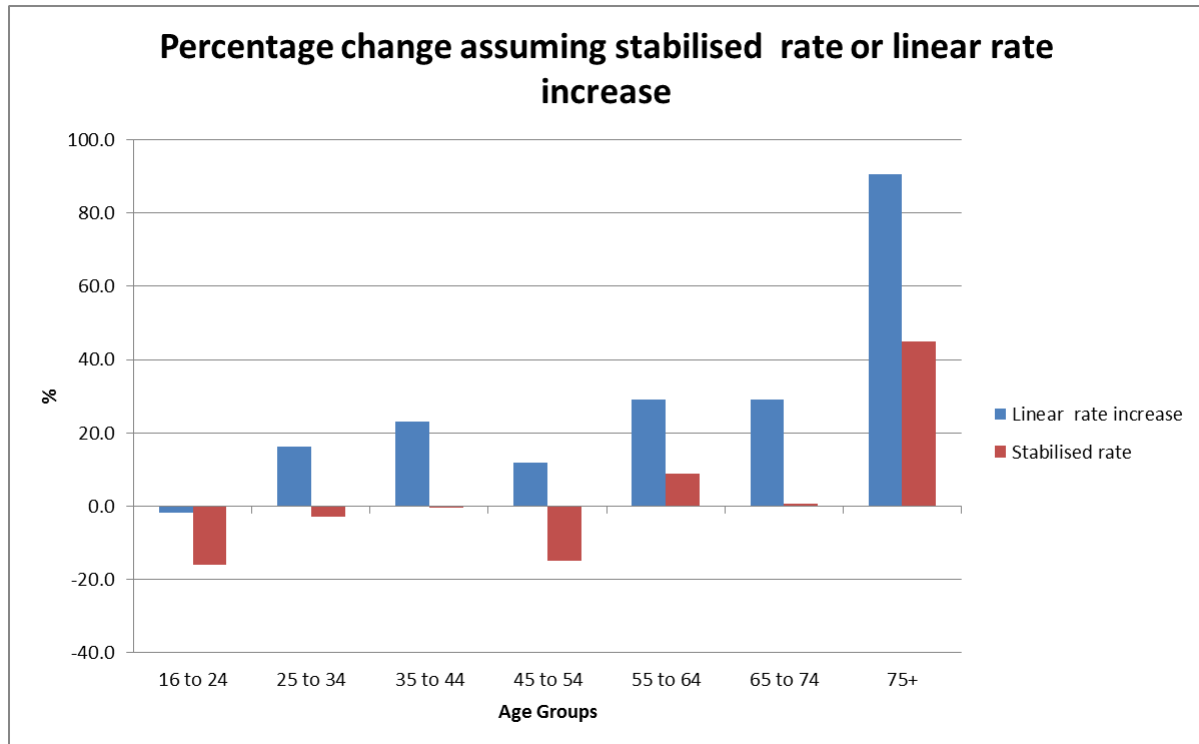
Figure 6 Obesity Projections for Worcestershire



Source: Local calculation using 2014 based ONS population projections and obesity estimates from the Health Survey for England (1993-2014).

⁶ To model a linear increase in obesity rates the 1993-2014 Health Survey for England data series was used to establish the linear trend for age/sex specific groups. These national age/sex specific trends were then applied to local age/sex specific population projections. To model a stabilised rate the current national age/sex specific rates were held constant and applied to local age/sex specific population projections.

Figure 7 Obesity Projections - percentage change in the number of people who are projected to be obese by 2025



Source: Local calculation using 2014 based ONS population projections and obesity estimates from the Health Survey for England (1993-2014).

Best Practice

Public Health England Publications

- 'Applying All Our Health' (2018)
<https://www.gov.uk/government/publications/adult-obesity-applying-all-our-health/adult-obesity-applying-all-our-health>
- Health Matters: obesity and the food environment (2017)
<https://www.gov.uk/government/publications/health-matters-obesity-and-the-food-environment/health-matters-obesity-and-the-food-environment--2>
- Obesity in mental health secure units (2017)
<https://www.gov.uk/government/publications/obesity-in-mental-health-secure-units>

NICE Guidelines

- [Obesity prevention \(CG43\)](#) - the first national guidance on the prevention of overweight and obesity in adults and children in England and Wales.
- [Obesity - identification, assessment and management \(CG189\)](#) - evidence-based advice on the care and treatment of obesity.
- [Weight management: lifestyle services for overweight or obese adults \(PH53\)](#) - makes recommendations on the provision of effective multi-component lifestyle weight management services for adults who are overweight or obese (aged 18 and over).
- [Weight management before, during and after pregnancy \(PH27\)](#) - includes six recommendations based on approaches proven to be effective for the whole population.
- [Preventing excess weight gain \(NG7\)](#) - includes recommendations for children (post-weaning) and adults to support approaches suggested in other NICE guidelines about effective interventions and activities to prevent people becoming overweight or obese.
- [BMI: preventing ill health and premature death in black, Asian and other minority ethnic groups \(PH46\)](#) - aims to determine whether lower cut-off points should be used for black, Asian and other minority ethnic groups in the UK as a trigger for lifestyle interventions to prevent conditions such as diabetes, myocardial infarction or stroke.
- [Obesity: working with local communities \(PH42\)](#) - aims to support effective, sustainable and community-wide action to prevent obesity. It sets out how local communities can achieve this, with support from local organisations and networks.

Key Areas of Work and Local Assets

The Health and Well-being Board identified Obesity as one of four key priorities from 2013-2016. Actions within the Obesity Action Plan (2013-2016) have been embedded into practice and service offers across the County to ensure a continued focus on tackling obesity.

In 2016, the Health and Well-being Board identified 'Being Active' as one of three priorities for 2016-2021, it was prioritised because physical activity is an important component in health and well-being across all ages and being inactive is a major cause of ill health throughout life. Being physically active has well evidenced and wide reaching health benefits to an individual including energy balance and expenditure, it therefore a key determinant of weight control⁷.

The current obesity strategy and guidance for Worcestershire draws on the priorities set out in the previous government's **'Healthy Weight Healthy Lives Strategy'** focusing on the following:

- Describing the Challenge;
- Promoting Children's Health;
- Promoting Healthier Food Choices;
- Building Physical Activity into our Lives;
- Supporting Health at Work;
- Providing Personalised Advice and Support, to encourage healthy behaviours including to people who have become overweight and obese.

Key areas of work targeting adult obesity which involve Worcestershire County Council and partners include the following:

- The Regulatory Services run **'Healthier Choices Food Award'**;
- Development of a range of entry-level sport and physical activity opportunities including **'Walking for Health'**;
- Supporting local businesses to sign up to the **'Worcestershire Works Well'** scheme;
- Rolling out the **'NHS Health Checks'** programme through GPs across Worcestershire;
- The **'NHS Diabetes Prevention Programme'**;
- Piloting **'Social Prescribing'** - where GP practices work with individuals to enable them to access local support (six sites are currently operating throughout Worcestershire).
- Supporting relevant **Public Health England campaigns**.

⁷ WCC (2017) http://www.worcestershire.gov.uk/downloads/file/7051/joint_health_and_well-being_strategy_2016_to_2021 Accessed 13/11/17

Associated Documents and Links

- JSNA Briefing on Physical Activity:
http://www.worcestershire.gov.uk/info/20122/joint_strategic_needs_assessment/1473/jsna_publications_by_category/7
- The Joint Health and Wellbeing Strategy 2016-2021
http://www.worcestershire.gov.uk/downloads/file/7051/joint_health_and_well-being_strategy_2016_to_2021

More support and Guidance may be found on the following websites:

- Public Health England, Public Health Profiles: <https://fingertips.phe.org.uk/>
- Obesity Learning Centre: <http://www.ncdlinks.org/olc/>
- Sport England: <http://www.sportengland.org/>
- Local Health website: <http://www.localhealth.org.uk/#!=-en:v=map9>
- Your Life Your Choice: <https://ylyc.worcestershire.gov.uk/health-and-wellbeing/>
- NHS Health Checks: <http://www.healthcheck.nhs.uk/>
- Living Well Service : <https://www.nhs.uk/livewell/Pages/Livewellhub.aspx>
- NHS Choices: <https://www.nhs.uk/conditions/obesity/>
- NHS Choices - Start the NHS weight loss plan: <https://www.nhs.uk/Livewell/weight-loss-guide/Pages/losing-weight-getting-started.aspx>
- The Eatwell Guide: <https://www.gov.uk/government/publications/the-eatwell-guide>
- Public Health England One You: <https://www.nhs.uk/oneyou/about-one-you#tSslvjY12VmcjdeB.97>
- NHS Choices 5 A Day: <https://www.nhs.uk/livewell/5aday/Pages/5ADAYhome.aspx>
- NHS Choices Eight tips for healthy eating:
<https://www.nhs.uk/Livewell/Goodfood/Pages/eight-tips-healthy-eating.aspx>
- Health walks: <https://www.walkingforhealth.org.uk/>
- Healthwatch: <http://www.healthwatch.co.uk/>
- Good Practice Appraisal Tool for obesity prevention programmes, projects, initiatives and interventions:
http://www.euro.who.int/_data/assets/pdf_file/0007/149740/e95686.pdf
- Public Health England, The scientific principles for developing nutrient-based standards for planning nutritionally balanced menus:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/648744/healthier_and_more_sustainable_nutrition_principles.pdf
- Public Health England, Weight management: guidance for commissioners and providers <https://www.gov.uk/government/collections/weight-management-guidance-for-commissioners-and-providers>
- Public Health England, Adult weight management: a guide to brief interventions:
<https://www.gov.uk/government/publications/adult-weight-management-a-guide-to-brief-interventions>

Data Notes

Physical activity/inactivity - It has not been possible to compare results with previous indicators of physical activity/inactivity due to a change in the data source from the 'Active People Survey' to the 'Active Lives Survey'.

Further Information and Feedback

This briefing has been written by Worcestershire County Council's Public Health Team. We welcome your comments on these briefings and how they could better suit your requirements, please do contact us with your ideas.

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This document can be provided in alternative formats such as Large Print, an audio recording or Braille; it can also be emailed as a Microsoft Word attachment. Please contact Janette Fulton Email: jfulton@worcestershire.gov.uk Tel: 01905 843359.