



lightening the load:

tackling overweight and obesity

A toolkit for developing local strategies to tackle
overweight and obesity in children and adults

NATIONAL 
Heart Forum



NHS

Produced by the **National Heart Forum** in association with the **Faculty of Public Health** and the **Department of Health**

Endorsed by the **National Institute for Health and Clinical Excellence (NICE)**,
the **Food Standards Agency**, the **Royal College of General Practitioners**,
the **Royal College of Nursing** and the **Royal College of Physicians**

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Written by Dr Kerry Swanton and Monica Frost

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Foreword

In 2000 the Faculty of Public Health published *Tackling obesity: A toolbox for local partnership action*, aimed at local teams involved in planning and coordinating strategies for the prevention and management of overweight and obesity. This new toolkit builds on the success of the original and, although primarily designed for use in England, should also be of use to those working in other parts of the UK.

As the levels of overweight and obesity in England have risen, so too have the thinking and best practice of those working in the area developed. It is a fast-moving arena and the publication of the health improvement white paper *Choosing health* has created many opportunities for those working at a local level to develop interventions further. This toolkit provides information and guidance to help your primary care trust or local authority select the most appropriate strategic interventions for your area. It complements the National Institute for Health and Clinical Excellence (NICE) guideline on obesity.

Overweight and obesity are complex conditions closely linked to today's society and the wider determinants of health. As yet, no country has successfully reduced the overweight and obesity burden. The toolkit will help you to consider the best approaches to tackling overweight and obesity in your local area, taking into account the specific needs of your local population and the socioeconomic and psychological experiences they may face. We hope that the toolkit will help you to develop the most appropriate and successful strategy for the needs of your community.

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This toolkit is intended as a resource to help those working at local level to plan and coordinate comprehensive strategies to prevent and manage overweight and obesity. It focuses on multisector partnership approaches. Although specifically tailored for England, much of the information and guidance in the toolkit apply equally to Scotland, Wales and Northern Ireland.

This toolkit can be downloaded from

www.heartforum.org.uk or **www.fph.org.uk**.

These websites provide up-to-date information about developments in the area of obesity.

Introduction

Nearly a quarter of people in England are obese and current trends may mean that today's children have a shorter life expectancy than their parents.¹ It has been estimated that, unless we take effective action, about one-third of adults and one-fifth of children aged 2-10 years will be obese by 2010.²

The rapid increase in levels of overweight and obesity has occurred in a time period too small for genetic changes to be the cause. This means that the growing health problems are likely to be caused by behavioural and environmental changes in our society. Added to this, overweight and obesity are health inequalities issues, with people from the lowest socioeconomic groups most at risk.

This toolkit has been designed to provide a starting point for developing a local strategy to tackle overweight and obesity. It is intended to help local multiagency teams – including public health, health promotion and primary care professionals, and strategic planners in both the NHS and local government in England – to develop and implement strategies and action plans to halt the year-on-year rise of overweight and obesity through prevention and management.

The toolkit provides a comprehensive collection of information and tools to assist with delivering current national and local policies. It purposefully does not provide detailed information about care and treatment of overweight and obesity, but rather offers signposts to well established and comprehensive material covered elsewhere. The toolkit complements the National Institute for Health and Clinical Excellence (NICE) clinical guideline *Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children*.³

The toolkit is designed to equip local action teams with the necessary information and tools to meet and address the challenge of tackling overweight and obesity. It has four sections:

Section A: Overweight and obesity: the public health burden

This section focuses on the public health case for developing a local overweight and obesity strategy.

Section B: Overweight and obesity: reducing the burden

This section looks at ways of reducing the burden of overweight and obesity through prevention and management. It considers the broad principles involved and some of the evidence supporting particular approaches.

Section C: Developing a local overweight and obesity strategy

This section provides a practical guide to developing a local strategy to prevent and manage overweight and obesity.

Section D: Resources

This section contains the tools highlighted in section C, as well as further information on national policy drivers, and details of useful organisations and websites.

KEY FACTS

Overweight and obesity in England

- Overweight and obesity increase the risk of a wide range of diseases and illnesses, including coronary heart disease, type 2 diabetes, high blood pressure and some cancers.⁴
- Obesity reduces life expectancy on average by nine years and is responsible for 9,000 premature deaths a year.⁴
- The prevalence of obesity has trebled since the 1980s.^{4,5} In 2005, 22.1% of men and 24.3% of women were obese and almost two-thirds of all adults – approximately 31 million adults – were either overweight or obese.⁵ (For definitions of 'overweight' and 'obese', see page 13.)
- Overweight and obesity are also increasing in children. In 2005, 31% of children aged 2-10 years were overweight (including obese), and 16.8% were obese.⁵ Among 11-15 year olds, 35.1% were overweight (including obese) and 20.6% were obese. This represents a 33% increase in overweight (including obese) and a 59% increase in obesity since 1995 for 2-15 year old children.⁵ If the proportion of obese children continues to rise, a whole generation may have a shorter average life expectancy than their parents.¹
- It has been estimated that, if current trends continue, about one-third of adults and one-fifth of children aged 2-10 years will be obese by 2010.²
- There are social group differences in obesity, particularly for women and children – 18.7% of women in professional households are obese compared with 29.1% in routine and semi-routine households.⁶ A similar pattern is seen among children, with 12.4% in professional households classified as obese compared with 17.1% in semi-routine households.¹
- Most evidence suggests that the main reason for the rising prevalence of overweight and obesity is a combination of less active lifestyles and changes in eating patterns.⁴
- Obesity has a substantial human cost by contributing to the onset of disease and premature death. It also has serious financial consequences for the NHS and for the economy. The economic costs of obesity are estimated at between £3.3 billion and £3.7 billion per year and the costs of obesity plus overweight at between £6.6 billion and £7.4 billion per year.⁷

Note: The Health Survey for England (HSE) figures are weighted to compensate for non-response. (Before the HSE 2003, data were not weighted for non-response.)

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Overweight and obesity: the public health burden

A

This section of the toolkit focuses on the public health case for developing a local overweight and obesity strategy.

What are 'overweight' and 'obesity'?

Overweight and obesity are terms used to describe increasing degrees of excess body fatness which can lead to increasingly adverse effects on health and wellbeing. Potential problems include respiratory difficulties, chronic musculoskeletal problems, depression, relationship problems and infertility. The more life-threatening problems fall into four main areas: cardiovascular disease problems; conditions associated with insulin resistance such as type 2 diabetes; certain types of cancers, especially the hormonally related and large bowel cancers; and gallbladder disease.¹ (For more on the conditions associated with obesity, see page 21.)

The likelihood of developing life-threatening problems such as type 2 diabetes rises steeply with increasing body fatness. Hence, there is a need to identify the ranges of weight at which health risks to individuals increase, using simple assessment methods such as Body Mass Index (BMI).

Methods of assessing overweight and obesity in adults

Body Mass Index

Overweight and obesity ranges are commonly assessed by using Body Mass Index (BMI), which is defined as the person's weight in kilograms divided by the square of their height in metres (kg/m^2). BMI is used because, for most people, it correlates with their proportion of body fat. The National Institute for Health and Clinical Excellence (NICE) has classified overweight and obesity according to BMI as shown in Table 1 on the next page.² 'Overweight' is classified as a BMI of 25 to 29.9kg/m^2 and 'obesity' is classified as a BMI of 30kg/m^2 or more. This classification accords with that recommended by the World Health Organization (WHO).³

NICE recommends that the BMI measurement should be interpreted with caution because it is not a direct measure of adiposity (amount of body fat).

Table 1 NICE classification of overweight and obesity in adults

Classification	BMI (kg/m ²)
Healthy weight	18.5 – 24.9
Overweight	25 – 29.9
Obesity I	30 – 34.9
Obesity II	35 – 39.9
Obesity III (Severely or morbidly obese)	40 or more

Source: National Institute for Health and Clinical Excellence ²

The concept of different cut-offs for different ethnic groups has been proposed by the WHO because some ethnic groups, notably Asians, have higher cardiovascular and metabolic risks at lower BMIs. This may be because of differences in body shape and fat distribution. However, in the absence of universal agreement on this, including the levels of the different cut-offs, NICE recommends that the same cut-off points as those shown in Table 1 (above) be used to classify overweight and obesity in all ethnic groups in the UK.² * This approach is supported by the Department of Health and the Food Standards Agency.

Note: Although BMI is used as a common method of assessing overweight and obesity, it does not distinguish between mass due to body fat and mass due to muscular physique, so other methods of measurement, particularly waist circumference and waist-hip ratio, can be used to find out more about the proportion and distribution of body fat.

Waist circumference

The waist circumference measurement is used to assess a patient's abdominal fat content or 'central' fat distribution. Central obesity is linked to a higher risk of type 2 diabetes and coronary heart disease. NICE recommends that waist circumference may be used, in addition to BMI, to assess risk in people with a BMI of less than 35kg/m².⁽²⁾ The currently recognised waist circumference thresholds used to assess health risks in the general population are shown in Table 2.

Table 2 Waist circumference thresholds used to assess health risks in the general adult population

At increased risk	Male	Female
Increased risk	94cm (37 inches) or more	80cm (31 inches) or more
Greatly increased risk	102cm (40 inches) or more	88cm (35 inches) or more

Source: National Institute for Health and Clinical Excellence (2006),² International Diabetes Federation (2005),⁵ WHO/IASO/IOTF (2000),⁴ and World Health Organization (2000)³

Different waist circumference cut-offs for different ethnic groups have been proposed by the World Health Organization⁴ and the International Diabetes Federation.⁵ ** This is because ethnic populations differ in the level of risk associated with a particular waist circumference. For example, in South Asians (of Pakistani, Bangladeshi and Indian origin) living in England, a given waist circumference tends to be associated with more features of the metabolic syndrome (see page 23) than in Europeans.² However, because a globally applicable grading system of waist circumference for ethnic populations has not yet been developed, NICE does not recommend separate waist circumference cut-offs for different ethnic groups in the UK.²

* A proposed classification of overweight and obesity for Asian adult populations has been developed by the World Health Organization (WHO).⁴ The proposed cut-offs are 18.5–22.9kg/m² (healthy weight), 23 kg/m² or more (overweight), 23–24.9kg/m² (at risk), 25–29.9kg/m² (obesity I), 30kg/m² or more (obesity II).

** The International Diabetes Federation (IDF) and the WHO have proposed waist circumference thresholds for Asian adult populations of 90cm (35 inches) or more for men, and 80cm (31 inches) or more for women.^{3–5} Note that the IDF definition is for South Asians and Chinese populations only.

Waist-hip ratio

Waist-hip ratio is another measure of body fat distribution. The waist-hip measurement is defined as waist circumference divided by hip circumference, ie waist girth (in metres)/hip girth (in metres). Although there is no consensus about appropriate waist-hip ratio thresholds, a raised waist-hip ratio is commonly taken to be 1.0 or more in men, and 0.85 or more in women.^{2, 4} However, neither NICE² nor the Department of Health⁶ recommends the use of waist-hip ratio as a standard measure of overweight or obesity.

Methods of assessing overweight and obesity in children and young people

Body mass index

The National Institute for Health and Clinical Excellence (NICE) recommends that BMI (adjusted for age and gender) should be used as a practical estimate of overweight in children and young people despite there being no universally accepted BMI-based classification system for childhood obesity. The BMI measurement in children and young people should be related to the UK 1990 BMI growth reference charts to give age- and gender-specific information. Pragmatic indicators for action have been recommended as the 91st centile for overweight, and the 98th centile for obesity.²

Waist circumference

Waist circumference is not currently recommended as a means of diagnosing childhood obesity as there is no clear threshold for waist circumference associated with morbidity outcome in children and young people.⁷ Thus, NICE recommends that waist circumference is not used as a routine measurement in children and young people, but may be used to give additional information on the risk of developing other long-term health problems.²



Tools 3-6 give more information about the various methods for the measurement and assessment of overweight and obesity in adults and children.

Prevalence and trends of overweight and obesity

Prevalence of overweight and obesity among adults

KEY FACTS

Prevalence

According to the latest figures (2005), 22.1% of men and 24.3% of women are obese and almost two-thirds of all adults – approximately 31 million adults – are either overweight or obese. The proportion who are severely (morbidly) obese (with a BMI over 40kg/m²) is 0.9% in men and 2.7% in women.⁸

Age

- In both men and women, mean BMI (kg/m²) generally increases with age, apart from in the oldest age group (those aged 75 plus).⁸
- Among those aged 25-74, almost three-quarters (71.6%) of men are overweight or obese, and more than half of women are overweight or obese (61.1%).⁸
- In men, the proportion who are severely obese (with a BMI over 40kg/m²) is highest in those aged 55-64 (1.8%), and in women in those aged 45-54 (4.3%).⁸
- In both men and women aged 16-74 years, prevalence of raised waist circumference increases with age.⁹

Gender

- Mean BMI levels are the same for men and women (26.9kg/m²).⁸
- A greater proportion of men (42.6%) are overweight than women (32.1%).⁸
- Approximately three times as high a proportion of women (2.7%) as men (0.9%) are severely obese.⁸
- Raised waist circumference is more prevalent in women (41%) than men (31%).⁹

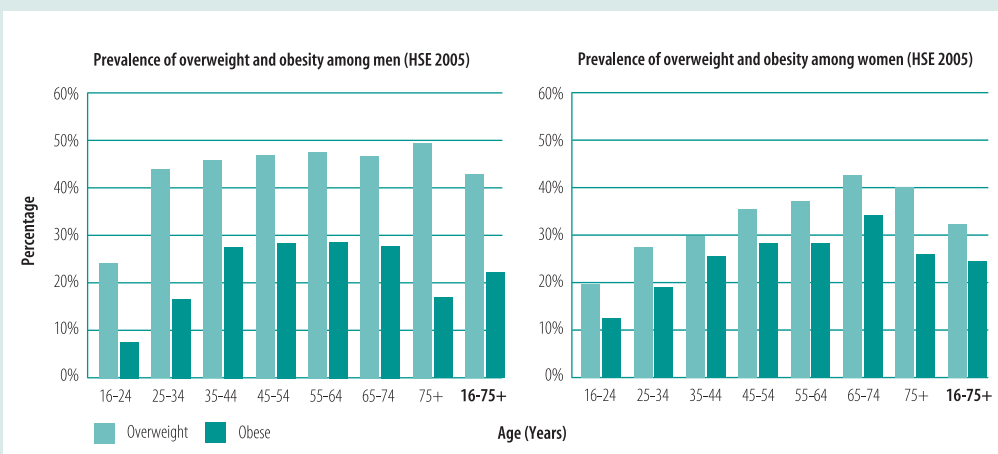
Sociocultural patterns

- Overweight and obesity are more common in lower socioeconomic and socially disadvantaged groups, particularly among women.¹⁰
- Women's obesity prevalence is far lower in managerial and professional households (18.7%) than in households with routine or semi-routine occupations (29.1%).⁹
- The prevalence of morbid obesity (BMI over 40kg/m²) among women is also lower in managerial and professional households (1.6%) than in households with routine or semi-routine occupations (4.1%).⁹

Ethnic differences

- In women, the mean BMI is markedly higher in Black Caribbeans (28.0kg/m²) and Black Africans (28.8kg/m²) than in the general population (26.8kg/m²), and markedly lower in Chinese (23.2kg/m²).¹¹
- In men, the mean BMI of Chinese (24.1kg/m²) and Bangladeshis (24.7kg/m²) is significantly lower than that of the general population (27.1kg/m²).¹¹
- The increase in waist circumference with age occurs in all ethnic groups for both men and women.¹¹

Notes: The Health Survey for England (HSE) figures are weighted to compensate for non-response. (Before the HSE 2003, data were not weighted for non-response.) A raised waist circumference is defined as 102cm or more for men, and 88cm or more for women.⁹

Figure 1 Prevalence of overweight and obesity among adults, by age and sex, England, 2005

Note: Figure 1 uses the Health Survey for England figures which are weighted to compensate for non-response.

Source: Health Survey for England 2005⁸

Table 3 Prevalence of obesity and central obesity among adults aged 16 and over living in England, by ethnic group, 2003/2004

Figures are from the *Health Survey for England 2004: The health of ethnic minority groups*,¹¹ except for those marked 'HSE 2003', which are from the *Health Survey for England 2003*.⁹

GENDER	Black Caribbean	Black African	Indian	Pakistani	Bangladeshi	Chinese	General population
Men							
Overweight (including obese)	67.4%	61.8%	53.2%	55.5%	44.4%	36.8%	66.5%
Obese (including severely obese)	25.2%	17.1%	13.8%	15.1%	5.8%	6.0%	22.7%
Severely obese	0.2%	0.3%	0.4%	1.0%	0.3%	0.3%	0.9%
Raised waist-hip ratio (HSE 2003)	25.0%	16.0%	36.0%	37.0%	32.0%	17.0%	33.0%
Raised waist circumference (HSE 2003)	22.0%	19.0%	20.0%	30.0%	12.0%	8.0%	31.0%
Women							
Overweight (including obese)	64.5%	69.8%	55.2%	62.3%	50.8%	24.9%	57.1%
Obese (including severely obese)	32.1%	38.5%	20.2%	28.1%	17.2%	7.6%	23.2%
Severely obese	4.2%	5.0%	1.2%	2.1%	0.6%	0.3%	2.4%
Raised waist-hip ratio (HSE 2003)	37.0%	32.0%	30.0%	39.0%	50.0%	22.0%	30.0%
Raised waist circumference (HSE 2003)	47.0%	53.0%	38.0%	48.0%	43.0%	16.0%	41.0%

Note: The prevalence figures in this table are weighted to compensate for non-response in different groups.

Source: Health Survey for England 2004: The health of ethnic minority groups,¹¹ and Health Survey for England 2003⁹

Trends in overweight and obesity among adults

KEY FACTS

- There has been a marked increase in the levels of obesity (BMI above 30kg/m²) among adults in England. The proportion of men classified as obese increased from 13.2% in 1993 to 23.1% in 2005 – a relative increase of 75%; and from 16.4% of women in 1993 to 24.8% in 2005 – a relative increase of 51%.⁸
- The prevalence of severe (morbid) obesity (BMI above 40kg/m²) in men rose from 0.2% in 1993 to 1% in 2005 – ie it more than quadrupled. For women it rose from 1.4% to 2.9% – ie it doubled.⁸
- Mean BMI increased by 1.2kg/m² in men and by 1.3kg/m² in women between 1993 and 2005.⁸

Note: For accuracy, unweighted figures have been used for time comparisons. (Before the Health Survey for England 2003, HSE data were not weighted for non-response.)

Prevalence of overweight and obesity among children

KEY FACTS

Prevalence

- The mean BMI in girls aged 0-15 is 18.7kg/m² compared to 18.4kg/m² in boys.⁸
- Among children aged 2-10 years, 16.8% are obese and 31% are overweight (including obese). Among children aged 11-15 years, 20.6% are obese and 35.1% are overweight (including obese). Almost one-third of children aged 2-15 are overweight (including obese) (32.6%) and almost one-fifth are obese (18.3%).⁸
- A greater percentage of boys (33%) than girls (29%) aged 2-10 years are overweight (including obese), but a similar percentage of boys (16.9%) and girls (16.8%) are obese. Among children aged 11-15 years, a similar percentage of boys and girls are overweight (including obese) (35.3% and 34.9% respectively) and obese (20.4% and 20.8% respectively).⁸
- Between the ages of 2 and 10, there is a steady increase in the proportion who are overweight (including obese) and obese only, in both sexes. Also, the percentage of children who are overweight (including obese) and obese increases between 2-10 and 11-15 years, for both sexes.⁸

Sociocultural patterns

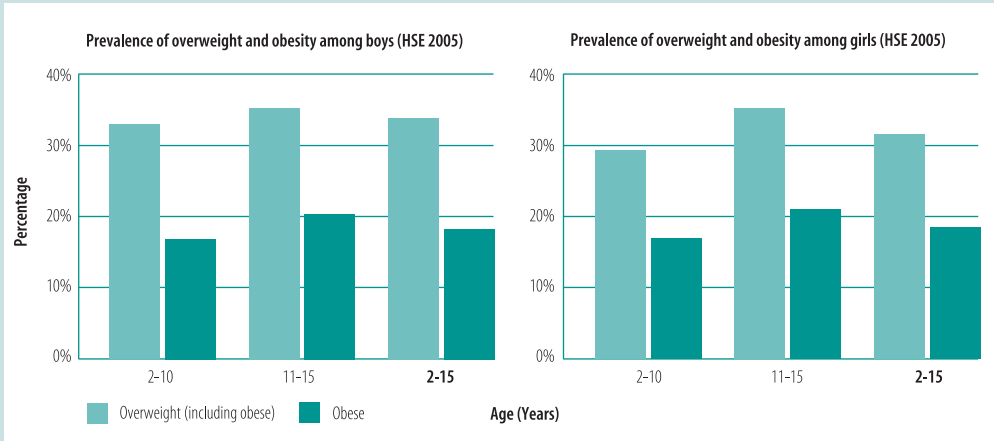
- Obesity prevalence is lowest among children in managerial and professional households (12.4%), and highest among children in routine and semi-routine households (17.1%).¹²

Ethnic differences

- Mean BMIs are significantly higher among Black Caribbean and Black African boys (19.3kg/m² and 19.0kg/m² respectively) and girls (20.0kg/m² and 19.6kg/m² respectively)¹¹ than in the general child population. (In 2001-2002 boys in England had a mean BMI of 18.3kg/m² and girls had a mean BMI of 18.7kg/m².)¹³
- Prevalence of overweight (including obese) among Black African (42%), Black Caribbean (39%) and Pakistani (39%) boys is significantly higher than that of the general population (30%). The same is true of Black Caribbean (42%) and Black African (40%) girls who have a markedly higher prevalence than that of the general population (31%).¹¹
- Obesity is almost four times more common in Asian children than in white children.¹⁴

Note: The Health Survey for England (HSE) figures are weighted to compensate for non-response. (Before the HSE 2003, data were not weighted for non-response.)

Figure 2 Prevalence of overweight and obesity among children, by age and sex, England, 2005



Source: Health Survey for England 2005 ⁸

Table 4 Prevalence of obesity among children aged 2-15 living in England, by ethnic group, 2004

GENDER	Black Caribbean	Black African	Indian	Pakistani	Bangladeshi	Chinese	General population (2001-02)
Boys							
Overweight	11%	11%	12%	14%	12%	8%	14%
Obese	28%	31%	14%	25%	22%	14%	16%
Overweight including obese	39%	42%	26%	39%	34%	22%	30%
Girls							
Overweight	15%	13%	11%	10%	14%	22%	15%
Obese	27%	27%	21%	15%	20%	12%	16%
Overweight including obese	42%	40%	31%	25%	33%	34%	31%

Source: Health Survey for England 2004: The health of ethnic minority groups ¹¹

Trends in overweight and obesity among children

KEY FACTS

- Obesity among children aged 2-10 rose from 9.9% in 1995 to 16.7% in 2005 – an increase of 69%. Among 11-15 year olds, obesity rose from 14.4% in 1995 to 20.5% in 2005 – an increase of 42%.⁸
- The proportion of children aged 2-10 classified as overweight (including obese) increased from 22.7% in 1995 to 30.9% in 2005 – an increase of 36%. For 11-15 year olds, levels increased from 28.1% in 1995 to 35% in 2005 – an increase of 25% ⁸
- There has been a marked gender difference for children aged 2-15 years. Among boys, the proportion of overweight (including obese) rose from 24% in 1995 to 33.9% in 2005 – an increase of 41%; and among girls, from 25% in 1995 to 31% in 2005 – an increase of 24%.⁸
- Between 1995 and 2001, mean BMI (kg/m²) increased among boys (from 17.6kg/m² to 18.1kg/m²). Among girls aged 0-15, mean BMI (kg/m²) increased from 18.2kg/ BMI (kg/m²) in 2001 to 18.6kg/m² in 2005, but there was no significant increase among boys aged 0-15 over that same period.⁸

Note: For accuracy, unweighted figures have been used for time comparisons. (Before the Health Survey for England 2003, HSE data were not weighted for non-response.)

Figure 3 Obesity trends among children aged 2-15, England, by sex, 1995-2005



Note: For accuracy, Figure 3 uses unweighted figures (Before the HSE 2003, data were not weighted for non-response.)

Source: Health Survey for England 2005 ⁸

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Overweight and obesity: the public health burden

The health burden of overweight and obesity

Premature mortality

It has long been known that obesity is associated with premature death. Obesity increases 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 3 and 13 years – the excess mortality being greater the more severe the obesity and the earlier it develops.¹⁵

Obesity-related morbidity

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

Table 5 gives details of the health problems associated with obesity.

Table 5 Relative risks of health problems associated with obesity

Greatly increased risk (Relative risk much greater than 3)	Moderately increased risk (Relative risk 2–3)	Slightly increased risk (Relative risk 1–2)
• Type 2 diabetes • Insulin resistance • Gallbladder disease • Dyslipidaemia (imbalance of fatty substances in the blood, eg high cholesterol) • Breathlessness • Sleep apnoea (disturbance of breathing)	• Coronary heart disease • Hypertension (high blood pressure) • Stroke • Osteoarthritis (knees) • Hyperuricaemia (high levels of uric acid in the blood) and gout • Psychological factors	• Cancer (colon cancer, breast cancer in postmenopausal women, endometrial [womb] cancer) • Reproductive hormone abnormalities • Polycystic ovary syndrome • Impaired fertility • Low back pain • Anaesthetic risk • Foetal defects associated with maternal obesity

Note: All relative risk estimates are approximate. The relative risk indicates the risk measured against that of a non-obese person of the same age and sex. For example, an obese person is two to three times more likely to suffer from hypertension than a non-obese person.

Source: Adapted from World Health Organization, 2000³

The associated health outcomes of childhood obesity are similar to those of adults and include: ^{7, 16}

- hypertension (high blood pressure)
- dyslipidaemia (imbalance of fatty substances in the blood)
- hyperinsulinaemia (abnormally high levels of insulin in the blood).

(The above three abnormal findings constitute the 'metabolic syndrome' – see page 23.)

Other possible consequences for children and young people include:

- mechanical problems such as back pain and foot strain
- exacerbation of asthma

- psychological problems such as poor self-esteem, being perceived as unattractive, depression, disordered eating and bulimia
- type 2 diabetes.

Some of these problems appear in childhood, while others appear in early adulthood as a consequence of childhood obesity. The most important long-term consequence of childhood obesity is its persistence into adulthood and the early appearance of obesity-related disorders and diseases normally associated with middle age, such as type 2 diabetes and hypertension. Studies have shown that the higher a child's BMI (kg/m^2) and the older the child, the more likely they will be an overweight or obese adult.¹⁷ Furthermore, research has demonstrated that the offspring of obese parents have a greater risk of becoming overweight or obese adults,¹⁸ increasing the likelihood of developing such health problems later in life.

Conditions associated with obesity

Type 2 diabetes

Perhaps the most common obesity-related co-morbidity, and that which is likely to cause the greatest health burden, is type 2 diabetes. Around 70% of type 2 diabetes appears to be related to having a BMI over $25\text{kg}/\text{m}^2$. With increasing weight, the risk of developing type 2 diabetes increases exponentially.¹⁹ At a BMI of $35\text{kg}/\text{m}^2$ a woman is more than 80 times more likely and a man more than 40 times more likely to develop type 2 diabetes than at a BMI of $22\text{kg}/\text{m}^2$.⁽²⁰⁾ For women, the Nurses' Health Study showed that the single most important risk factor for type 2 diabetes was overweight and obesity.²¹ The risk is especially high for women with a central pattern of fat distribution, characterised by a large waist circumference (often described as 'apple-shaped') and often mediated through the metabolic syndrome (see page 23). The risk is less for women with a similar BMI who tend to deposit their excess fat on the hips and thighs ('pear-shaped').¹⁵ For men, data from the Health Professionals Follow-up Study indicated that a western diet (high consumption of red meat, processed meat, high-fat dairy products, French fries, refined grains, and sweets and desserts), combined with lack of physical activity and excess weight (BMI in excess of $30\text{kg}/\text{m}^2$), dramatically increases the risk of developing type 2 diabetes.²²

Coronary heart disease

Coronary heart disease is often associated with weight gain and obesity. In general, the relationship between BMI and coronary heart disease is stronger for women than for men. At a BMI of $26\text{kg}/\text{m}^2$, women are two times more likely and men are one and a half times more likely to develop coronary heart disease than at a BMI of $21\text{kg}/\text{m}^2$.⁽²³⁾

For women, the Nurses' Health Study showed a clear relationship between coronary heart disease and elevated BMI even after controlling for other factors such as age, smoking, menopausal status and family history. The risk of coronary heart disease increased two-fold with a BMI between 25 and $28.9\text{kg}/\text{m}^2$, and three-fold (3.6) for a BMI above $29\text{kg}/\text{m}^2$, compared with women with a BMI of less than $21\text{kg}/\text{m}^2$.^(15, 24)

For men younger than 65 years, a US study showed that there was an increased risk of coronary heart disease the higher the BMI. At a BMI of $25\text{--}28.9\text{kg}/\text{m}^2$, men were one and a half times (1.72) at risk, at a BMI of $29.0\text{--}32.9\text{kg}/\text{m}^2$ men were two and a half times (2.61) at risk, and at a BMI of more than $33.0\text{kg}/\text{m}^2$ men were three and a half times at risk, compared with the risk at a BMI of less than $23\text{kg}/\text{m}^2$.⁽²⁵⁾

Hypertension (high blood pressure) and stroke

The Framingham Heart Study estimated that 75% of the cases of hypertension in men and 65% of the cases in women are directly attributable to overweight/obesity.²⁶ Long duration obesity does not appear necessary to elevate blood pressure as the relationship between obesity and hypertension is evident in children.²⁷

Overweight/obesity is thought to be a major risk factor in stroke. Several studies have shown an increased risk for stroke with increasing BMI (kg/m^2) but others have found no association. In some studies there was an association with waist-to-hip ratio, but not BMI, suggesting that central obesity rather than general obesity is the key factor.²⁸ In a 28-year study of men in mid-life, it was found that obesity can have a significant impact on stroke risk, doubling its likelihood later in life. Men with a BMI of between $20\text{kg}/\text{m}^2$ and $22.49\text{kg}/\text{m}^2$ were significantly less likely to suffer a stroke than those with a BMI of more than $30\text{kg}/\text{m}^2$.⁽²⁸⁾

Metabolic syndrome

Metabolic syndrome refers to a cluster of risk factors related to a state of insulin resistance, in which the body gradually becomes less able to respond to the metabolic hormone insulin. People with the metabolic syndrome have an increased risk of developing coronary heart disease, stroke and type 2 diabetes.²⁹ The component risk factors related to insulin resistance are:

- increased waist circumference
- high blood pressure
- high blood glucose
- high serum triglyceride
- low blood HDL cholesterol (the 'good' cholesterol).

The development and severity of all the components are linked to the predominant risk factor of central obesity. Previously known as Syndrome X, metabolic syndrome is becoming increasingly common although the true prevalence of the disease is unknown. In the UK, it is estimated that as much as 25% of the adult population show clear signs of the metabolic syndrome,³⁰ a figure which is expected to increase in parallel with the rising epidemic of obesity.³¹ Incidence has been found to be higher in certain ethnic sub-groups such as Asian and African-Caribbean groups.³² In addition, it has been noted that in people with normal glucose tolerance, the prevalence of the metabolic syndrome increases with age and is higher in men than women, but these differences are not seen in diabetic patients.³³ Childhood obesity is a powerful predictor of the metabolic syndrome in early adulthood.¹⁰

Dyslipidaemia

Obesity is associated with dyslipidaemia. It is characterised by increased triglycerides, elevated LDL cholesterol (the 'bad' cholesterol) and decreased concentrations of HDL cholesterol (the 'good' cholesterol).³⁴ On average, the more fat, the more likely an individual will be dyslipidaemic and to express elements of the metabolic syndrome. However, location of fat, age and gender are important modifiers of the impact of obesity on blood lipids:

- *Location of fat* – Fat cells exert the most damaging impact when they are centrally located because compared to peripheral fat, central fat is insulin resistant and more rapidly recycles fatty acids.³⁵
- *Age* – Among the obese, younger people have relatively larger changes in blood lipids at any given level of obesity.³⁴
- *Gender* – Among overweight women, excess body weight seems to be associated with higher total, non-HDL and LDL cholesterol levels, higher triglyceride levels, and lower HDL cholesterol levels. Total cholesterol to HDL cholesterol ratios seem to be highest in obese postmenopausal women, due to the much lower HDL cholesterol concentrations.³⁴

Cancer

Research suggests that, in women, obesity increases the risk of various types of cancer, including colon, breast (postmenopausal), endometrial (womb), cervical, ovarian and gallbladder cancers; and in men, obesity increases the risk of colorectal and prostate cancer. The clearest association is with cancer of the colon, for which obesity increases the risk by nearly three times in both men and women.³⁶ Obesity is estimated to account for 20% of cancer deaths in women.³⁷

Gallbladder disease

Obesity is an established predictor of gallbladder disease. The risk of developing the disease increases with weight gain although it is unclear how being overweight or obese may cause gallbladder disease. However, the most common reason for gallbladder disease is gallstones, for which obesity is a known risk factor. Research suggests that 30% of overweight and obese people have gallstones compared to 10% of non-obese persons.³⁸

Reproductive problems

Obesity, especially morbid or severe obesity (defined as a BMI of 40kg/m² or over), is linked to infertility and an increased risk of complications during pregnancy. These include hypertension, pre-eclampsia, gestational diabetes and an increased risk of foetal abnormalities including neural tube defects.¹⁵

Mechanical disorders such as osteoarthritis and low back pain

Osteoarthritis, or degenerative disease of the weight-bearing joints such as the knee, is a very common complication of obesity, and causes a great deal of disability. Pain in the lower back is also frequently suffered by obese people, and may be one of the major contributors to obesity-related absences from work. It is likely that the excess weight alone, rather than any metabolic effect, is the cause of these problems.³⁶

Obstructive sleep apnoea

A number of respiratory disorders are exacerbated by obesity, the most serious of which is obstructive sleep apnoea (OSA), a condition characterised by short repetitive episodes of impaired breathing during sleep. It has been estimated that as many as 60-70% of people suffering from OSA are obese.³⁹ Obesity, especially in the upper body, increases the risk of OSA by narrowing the individual's upper airway. OSA can increase the risk of high blood pressure, angina, cardiac arrhythmia, heart attack and stroke.

Breathlessness

Breathlessness on exertion is a very common symptom in the obese.⁴⁰ For example, in a large epidemiological survey, 80% of obese middle-aged subjects reported shortness of breath after climbing two flights of stairs compared with only 16% of similarly aged non-obese controls, and this was despite smoking being significantly less frequent in the obese.⁴¹ In another study of patients with type 2 diabetes, one-third reported troublesome shortness of breath and its severity increased with BMI.⁴² Importantly, breathlessness in the obese may be due to any of several factors including co-existent (but often obesity-related) cardiac disease, unrelated respiratory disease or the effects of obesity itself on breathing, although it is not clear whether breathlessness at rest can be attributable to obesity.⁴⁰

Psychological factors

Psychological damage caused by overweight and obesity is a huge health burden.⁴³

In childhood, overweight and obesity are known to have a significant impact on psychological wellbeing, with many children developing a negative self-image, lowered self-esteem and a higher risk of depression. In addition, almost all obese children have experiences of teasing, social exclusion, discrimination and prejudice.⁴⁴⁻⁴⁸ In one study, it was shown that children as young as six demonstrated negative perceptions of their obese peers.⁴⁹

In adults, the consequences of overweight and obesity have led to clinical depression, with rates of anxiety and depression being three to four times higher among obese individuals.⁵⁰ Obese women are around 37% more likely to commit suicide than women of normal weight.⁴³ Stigma is a fundamental problem. Many studies (for example: Gortmaker *et al*, 1993;⁵¹ Wadden and Stunkard, 1985⁴⁹) have reported widespread negativity regarding obese people, particularly in terms of sexual relations. The psychological experiences of overweight and obesity are extremely complex and linked to culture and societal values and 'norms'.

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The health benefits of losing excess weight

Weight loss in overweight and obese individuals can improve physical, psychological and social health. There is good evidence to suggest that a moderate weight loss of 5-10% of body weight in obese individuals is associated with important health benefits, particularly in a reduction in blood pressure and a reduced risk of developing type 2 diabetes and coronary heart disease.^{52, 53} Table 6 shows the results of losing 10kg.⁵⁴

Table 6 The benefits of a 10kg weight loss

	Benefit
Mortality	• More than 20% fall in total mortality • More than 30% fall in diabetes-related deaths • More than 40% fall in obesity-related cancer deaths
Blood pressure (in hypertensive people)	• Fall of 10mmHg systolic blood pressure • Fall of 20mmHg diastolic blood pressure
Diabetes (in newly diagnosed people)	• Fall of 50% in fasting glucose
Lipids	• Fall of 10% of total cholesterol • Fall of 15% of low density lipoprotein (LDL) cholesterol • Fall of 30% of triglycerides • Increase of 8% of high density lipoprotein (HDL) cholesterol
Other benefits	• Improved lung function, and reduced back and joint pain, breathlessness, and frequency of sleep apnoea • Improved insulin sensitivity and ovarian function

Source: Adapted from Jung, 1997;⁵⁴ Mulvihill and Quigley, 2003¹⁶

In relation to reduction in co-morbidities, the Diabetes Prevention Program in the US has shown that, among individuals with impaired glucose tolerance, a 5-7% decrease in initial weight reduces the risk of developing type 2 diabetes by 58%.⁵⁵

It is important to recognise that, for very obese people, such changes will not necessarily bring them out of the 'at-risk' category, but there are nevertheless worthwhile health gains. A continuous programme of weight reduction should be maintained to help continue to reduce the risks.

Weight reduction in overweight and obese people can improve self-esteem and can help tackle some of the associated psychosocial conditions. It should not be forgotten that small changes can have a positive impact on the overall health and wellbeing of individuals by increasing mobility, energy and confidence.

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The economic burden of overweight and obesity

KEY FACTS

The House of Commons Health Select Committee⁴³ estimated that, in England in 2002*:

- the economic costs of obesity were between £3.3 billion and £3.7 billion per year and the costs of overweight plus obesity between £6.6 billion and £7.4 billion per year
- the direct costs of treating obesity and its consequences were between £990 million and £1,135 million (2.0-2.3% of NHS expenditure), and
- the indirect costs amounted to between £2.3 billion and £2.6 billion.

* Based on data presented in the House of Commons Health Select Committee report (2004)⁴³

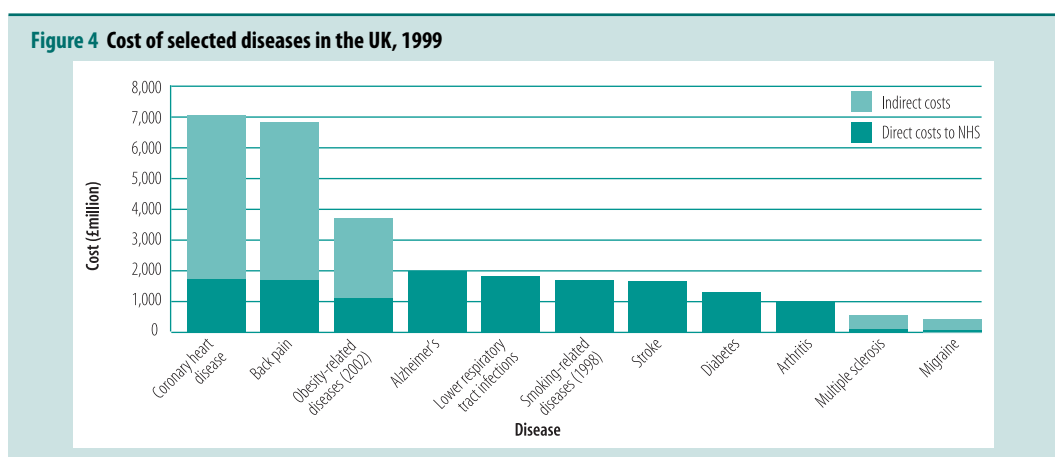
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Direct costs

Illness associated with obesity gives rise to costs to the NHS. Direct costs of obesity arise from NHS consultations, diagnostic tests, drugs and other treatments of diseases attributable to obesity. The total cost for anti-obesity medication has increased rapidly since 1998 with the licensing of orlistat (a drug which reduces the absorption of fat from the diet). Following NICE guidance issued in mid-2001, the number of prescriptions for orlistat increased from 18,000 to over 540,000 in 2002.⁴³ Similar guidance for the other main anti-obesity drug, sibutramine (which reduces cravings to over-eat) also led to an increase in prescriptions. (Note that NICE guidance on orlistat and sibutramine has now been replaced by the NICE guideline on obesity²).

Indirect costs

The indirect costs of obesity are defined in terms of lost output in the economy due to sickness absence or death of workers. The House of Commons Health Select Committee report stated that in 2002 there were 15.5-16 million days of certified incapacity attributable to obesity and other co-morbidities.⁴³ Figure 4 shows the direct and indirect costs of selected diseases.



Note: Obesity figures are for England only.

Source: House of Commons Health Select Committee, 2004;⁴³ Department of Health, 1998;⁵⁶ Liu *et al*, 2002⁵⁷

Implications of trends

It is important to consider the rapid increase in obesity over the past two decades and the possibility that this trend might continue. The current figures do not take into account that most obesity is undiagnosed and if all cases were identified and treatment sought, the NHS would not be able to cope with the demand and costs. At present, obesity is often not treated as a disease or illness but rather its medical complications are addressed.

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What causes overweight and obesity?

Many factors can play a part in causing overweight and obesity for the individual and society. Genes appear to influence the metabolism and distribution of body fat, and are thought to contribute 25-40% to the causes of overweight and obesity.⁵⁸ However, the rapid increase in levels of obesity throughout the developed world has occurred in too short a time for there to have been significant genetic changes within the population. It is therefore likely that this so-called 'epidemic' has been brought about mainly by environmental and behavioural changes which have led to a more energy-dense (high-calorie) diet and more sedentary way of life.³⁶

Food intake

According to the National Food Survey, the average household energy intake (calories consumed in the home) increased from the late 1950s to a peak in 1970, and then declined by around 9% by 2004.⁵⁹ However, the National Food Survey does not take account of food and drink purchased and eaten outside the home, or alcoholic and soft drinks and confectionery brought home.³⁶ In 1998, these components, which have only been recorded since 1994, accounted for about an extra 20% of energy intake. Eating outside the home is becoming increasingly popular,³⁶ and surveys indicate that the food eaten out tends to be higher in fats and added sugars than food consumed in the home.^{15, 36, 59}

Fat contains more than twice as many calories as protein or carbohydrate, so high-fat meals are particularly energy-dense and fattening. (Fat contains 9kcal per gram, compared with 4kcal per gram for protein or carbohydrate.)

Concerns about diet are compounded by the trend towards larger portions of many food items, notably soft drinks, savoury snacks and confectionery – so called 'supersize' packs. Food eaten outside the home is frequently offered in extra-large portions, often at minimal additional cost. Research shows that large portions increase calorie intake without necessarily making the individual feel full.³⁶

Physical inactivity

Over the last 25 years it appears that in the UK there has been a significant decrease in physical activity as part of daily routines, particularly at work, but a small increase in the proportion of

people taking physical activity for leisure. Data from the National Travel Survey⁶⁰ show that in England between 1975/76 and 2003 the average number of miles per year travelled by foot fell by around a quarter and by cycle by around a third. (These data exclude walking and cycling for leisure.) Over the same period the average number of miles per year travelled by car increased by just under 70%.⁶¹

KEY FACTS

Adults

- In 2004, only 35% of men and 24% of women met the current recommended target of achieving at least 30 minutes of moderate intensity physical activity at least five times a week.⁸
- The proportion of the population reaching the recommended target fell steadily with age. For men, levels fell from 56% at ages 16-24, to 9% at ages 75 plus; and for women, levels fell from 31% at ages 16-24 to 4% at ages 75 plus.⁸

Children

- Almost one-third of boys and two-fifths of girls do not achieve the recommended weekly activity level of at least one hour of moderate intensity physical activity a day.¹⁰

Schools in England are at the bottom of the European league in terms of time allocated to physical education in primary and secondary schools. Only 5% of children use their bicycles as a form of transport in the UK compared with 60-70% in the Netherlands, and 30-40% of children are now taken to school by car, compared with 9% in 1971.⁶²

Social and psychological factors

Our eating, drinking and exercise habits are greatly influenced by social and psychological factors.⁶³ High consumption of fatty foods and low consumption of fruit and vegetables are strongly linked to those in routine and manual occupations. Over-consumption of sweet foods and drinks can be a reaction to more negative feelings including low-self esteem or depression. So called 'comfort foods' (ie foods high in sugar, fat and calories) seem to calm the body's response to chronic stress. There may be a link between so-called modern life and increasing rates of over-eating, overweight, and obesity.⁶⁴ One study showed that men were more likely to eat when stressed if they were single, divorced or frequently unemployed. Among women, those who felt a lack of emotional support in their lives had a greater tendency to eat to cope with stress.⁶⁵ Understanding these behavioural determinants in greater depth is critical in engaging with individuals and helping to devise rational treatment strategies.¹⁵

Economic changes

As the average income in a country rises, its reliance on technology and labour-saving devices increases, leading to lower levels of physical activity and higher consumption of processed foods. In many developing countries these trends are leading to an increase in the prevalence of obesity and diabetes.

In fully developed nations, economic prosperity brings greater reliance on convenience foods and eating out, with higher calorie consumption. People increasingly depend on time-saving gadgets, which reduce effort, and children in particular spend hours in front of the TV or computer.¹⁵

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Wider determinants of health

A wide range of factors contribute to the health of individuals including:

- their age, sex and constitutional factors
- individual lifestyle factors
- social and community networks
- living and working conditions, and
- general socioeconomic, cultural and environmental conditions.

These factors or determinants of health are shown in Figure 5 as a series of layers, starting from the individual and moving to the determinants of the wider society. Most of these 'wider determinants' lie outside the direct influence of the health services.

Figure 5 Wider determinants of health



Source: Dahlgren and Whitehead, 1991⁶⁶

Some of the wider determinants can impact on the prevalence of overweight and obesity. For example, the traditional habits and customs of a person's social network can determine the balance of their diet; a poorly built environment or a fear of crime can discourage physical activity; and the accessibility of fresh, affordable fruit and vegetables can influence intake. The *Nutrition and food poverty* toolkit, produced by the National Heart Forum and the Faculty of Public Health, provides further information about the built environment and food accessibility as important factors in food choice. For details of the toolkit, see page 31.

The key risk factors for overweight and obesity are developed over the life course, and many originate during childhood.⁶⁷ Children are particularly vulnerable to social and environmental conditions within the household and the wider community. Socioeconomic deprivation seems to

be an important determinant of obesity in childhood which compounds problems experienced in later life – studies have shown that obese children have poorer educational and social outcomes.^{44, 51, 68} Healthy children are vital to the future health and productivity of society as a whole, so it is important to tackle wider determinants at the earliest possible stage if the prevalence of overweight and obesity is to be reduced and maximum health gain achieved. The National Heart Forum's *young@heart* project has highlighted the issues associated with children's health and well-being.^{67, 69.}

The challenge is to find ways to reduce the burden of overweight and obesity. Section B explores this in more detail.

A
**Overweight and obesity:
the public
health
burden**

For more information

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Overweight and obesity: reducing the burden

B

This section of the toolkit looks at ways of reducing the burden of overweight and obesity through prevention and management. It considers the broad principles involved and some of the evidence supporting particular approaches.

Tackling overweight and obesity

The two broad approaches to tackling overweight and obesity are through:

- **Prevention** – interventions aimed at preventing overweight developing in the first place, from childhood onwards, and
- **Weight management** – interventions aimed at weight reduction or weight control in people who have become overweight or obese.

Both approaches should be undertaken in a range of settings, through a number of partner agencies, and should be working in a coordinated way across the whole system.

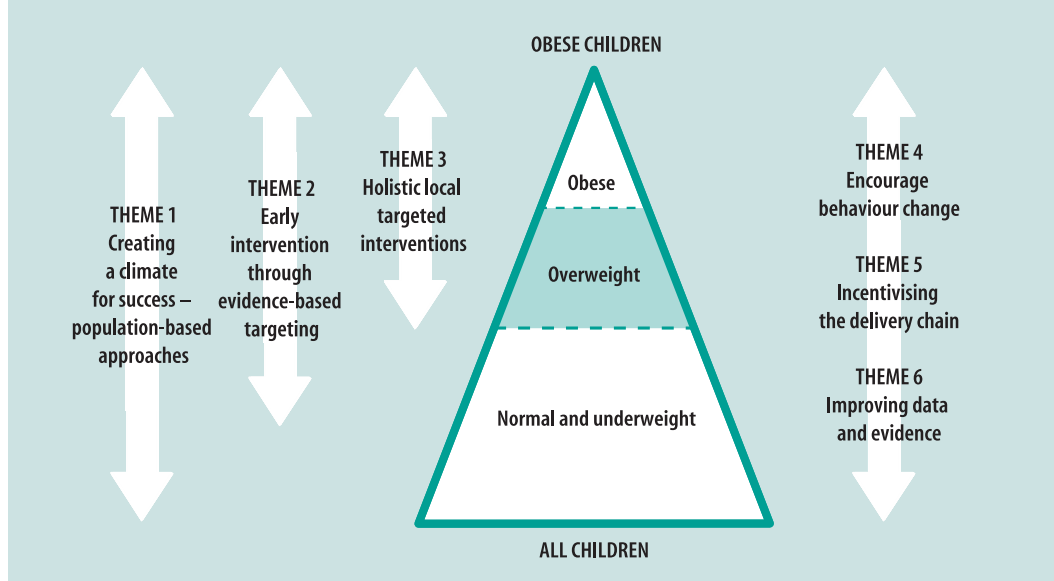
Public Service Agreement (PSA) on obesity

The government has prioritised action to tackle obesity, with a focus on tackling obesity in children. The Public Service Agreement (PSA) on obesity, published in 2004, aims to **halt the year-on-year rise in obesity among children under 11 by 2010 in the context of a broader strategy to tackle obesity in the population as a whole.**¹ This target is jointly owned by the Department of Health, Department for Education and Skills and the Department for Culture, Media and Sport. The government will deliver the PSA target with action on six fronts (see Figure 6 on the next page) ranging from general preventive interventions targeting the whole population and individuals at increased risk (see page 37) to holistic targeted interventions aimed at secondary prevention and treatment. For more information, see www.dh.gov.uk/obesity.

Achieving lifestyle change – the ‘Three E’s model’

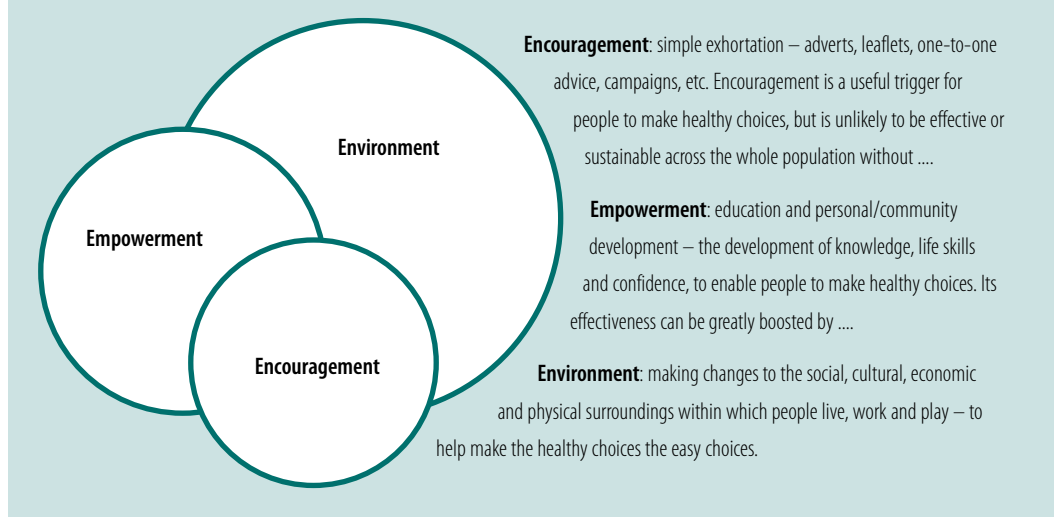
Any attempt at lifestyle modification must consider a holistic approach. A simple model for considering ways to support change in behaviour is shown in Figure 7 on the next page.

Figure 6 Department of Health approach for delivering the PSA target on obesity



Source: Department of Health, unpublished

Figure 7 The 'Three Es model for lifestyle change'



Source: Maryon-Davis, 2005²

In the model shown in Figure 7, **encouragement** refers to simple methods of encouragement to support individuals to change their lifestyle, eg to eat lower-calorie foods or to take more exercise. This approach would include encouragement in clinical situations as well as the simple, persuasive messages of effective media campaigns. **Empowerment** refers to the process of providing knowledge and skills, including life skills, to help an individual make healthy changes (ie an educational approach) that might include, for example, an awareness of basic nutritional principles, food-shopping skills, cooking skills, and building confidence and self-esteem. Encouragement can only be effective in a context of empowerment. **Environment** refers to the totality of the cultural, social, physical and economic environments required to facilitate improvements in lifestyle factors such as diet and physical activity, ie to make the healthy choices the easier choices. Encouragement and empowerment together can achieve little without a conducive total environment. Any steps to assist behaviour change should be taken in partnership with the individual.

In terms of the Three E's model (shown in Figure 7), lifestyle interventions to control obesity in the primary care setting are mainly concerned with individual encouragement and empowerment (the technique of motivational counselling, for example, includes both elements), but should also attempt to create a less 'obesogenic' environment, particularly by influencing the individual's immediate family.²

Preventing overweight and obesity

Overweight and obesity are largely preventable through lifestyle changes.³ Thus the best long-term approach to tackling overweight and obesity is prevention from childhood. Preventing overweight and obesity in children is critical, particularly through improving diet and increasing physical activity levels. Action therefore needs to take a lifecourse approach starting from birth. (Breastfed babies may be less likely to develop obesity later in childhood.⁴)

The National Heart Forum's *young@heart* initiative has highlighted the links between overweight and obesity in children and subsequent development of diabetes and coronary heart disease. A lifecourse approach is required which focuses on ensuring good infant feeding and nutrition during pregnancy as well as working with adolescents to support the healthy physical development of future mothers.⁵

There are two complementary approaches to preventing overweight and obesity:

- the **whole-population approach**, which aims to reduce the average risk of becoming overweight or obese across the whole population, and
- the **individuals-at-risk approach**, which aims to identify those at increased risk of becoming overweight or obese and offer them appropriate advice on how to reduce the risk.

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PREVENTING OVERWEIGHT AND OBESITY IN WHOLE POPULATIONS

At a population level, the intervention strategies required to prevent overweight and obesity involve broad strategies to:

- improve the nutritional balance of the average diet, with an emphasis on lower-calorie alternatives, and
- increase community-wide levels of physical activity.

The recommendations for promoting a healthy balanced diet are presented in *Choosing a better diet: A food and health action plan*⁴ and also in the NICE guideline *Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children*.⁶ They are based on the recommendations of the Committee on Medical Aspects of Food and Nutrition Policy (COMA), the Scientific Advisory Committee on Nutrition (SACN), and the World Health Organization (WHO). As well as promoting lower-calorie alternatives (ie reducing total fat and sugar consumption), action to prevent overweight should include encouraging people to eat more fruit and vegetables as this not only offers a way of stocking up on less calorie-dense food but also has important health benefits particularly in terms of helping to prevent the main co-morbidities of obesity – namely cardiovascular disease and cancer. A reduction in salt is also important. Salt is often used to make fatty foods more palatable, so cutting back on salt will help people to cut back on fats, and also contribute to lowering high blood pressure, which is another co-morbidity of obesity. This advice on healthy eating is reflected in the *National food guide*, in 'The Balance of Good Health' (see Figure 8).

Figure 8 The Balance of Good Health



Reproduced with kind permission of the Food Standards Agency

The Government recommends that all healthy individuals over the age of five years eat a healthy balanced diet that is rich in fruits, vegetables and starchy foods. The *Balance of Good Health* shown in Figure 8 is a pictorial representation of the recommended balance of the different food groups in the diet. It aims to encourage people to choose the right balance and variety of foods to help them obtain the wide range of nutrients they need to stay healthy. A healthy balanced diet should:

- include plenty of fruit and vegetables – aim for at least five portions a day of a variety of different types
- include meals based on starchy foods, such as bread, pasta, rice and potatoes (including high-fibre varieties where possible)
- include moderate amounts of milk and dairy products – choose low-fat options where possible
- include moderate amounts of foods that are good sources of protein, such as meat, fish, eggs, beans and lentils, and
- be low in foods that are high in fat, especially saturated fat, sugar and salt.

The recommendations for active living throughout the life course are presented in *Choosing activity: A physical activity action plan*,⁷ which aims to promote activity for all, in accordance with the evidence and recommendations set out in the Chief Medical Officer's report, *At least five a week*.⁸ Further recommendations to support practitioners in delivering effective interventions to increase physical activity have been developed by NICE.⁹ Action to prevent overweight should include encouraging everyday activity such as stair-climbing, building in a walk or getting off a bus or train a stop earlier. It should also include advice to decrease sedentary behaviour.

Table 7 Government recommendations on diet and physical activity

STANDARD POPULATION DIETARY RECOMMENDATIONS

Note: Standard UK population recommendations on healthy eating are based on the recommendations of the Committee on Medical Aspects of Food Policy (COMA), the Scientific Advisory Committee on Nutrition (SACN) and the World Health Organization (WHO).

Variable	Recommendation	Current levels	
Total fat ⁴	Reduce to no more than 35% of food energy	35.3% ¹⁰	
Saturated fat ⁴	Reduce to no more than 11% of food energy	13.3% ¹⁰	
Total carbohydrate ⁴	Increase to more than 50% of food energy	48.1% ¹⁰	
Sugars (added) ⁴	No more than 11% of food energy (no more than 10% of total dietary energy)	12.7% of food energy ¹⁰	
Dietary fibre ⁴	Increase the average intake of dietary fibre to 18g per day	13.8g per day ¹¹	
Salt ¹²	Adults: No more than 6g of salt per day	9.5g per day ¹³	
	Infants and children: Daily recommended maximum salt intakes:	Boys	Girls
	0-6 months – less than 1g per day	Breast milk will provide all the sodium necessary. ¹⁴	
	7-12 months – maximum of 1g per day	0.8g per day ¹⁴	
	1-3 years – maximum of 2g per day	1.4g per day ¹⁵	
	4-6 years – maximum of 3g per day	5.3g per day ¹⁶	4.7g per day ¹⁶
	7-10 years – maximum of 5g per day	6.1g per day ¹⁶	5.5g per day ¹⁶
	11-14 years – maximum of 6g per day	6.9g per day ¹⁶	5.8g per day ¹⁶
Fruit and vegetables ⁴	Increase to at least 5 portions of a variety of fruit and vegetables per day	2.8 portions per day ¹¹	
Alcohol ¹⁷	Men: A maximum of between 3 and 4 units a day	Men: 18.1 mean units per week ¹⁸	
	Women: A maximum of between 2 and 3 units a day	Women: 7.4 mean units per week ¹⁸	

The consumption of alcohol has not been included in the government’s dietary recommendations even though a reduction in alcohol consumption may be important for preventing overweight and obesity. Excessive alcohol consumption is associated with excessive calorie intake, raised blood pressure, increased risk of liver cirrhosis and some cancers in the long term.

PHYSICAL ACTIVITY RECOMMENDATIONS

Population	Recommendation
Children and young people ⁸	For general health benefits from a physically active lifestyle, children and young people should achieve a total of at least 60 minutes of at least moderate intensity physical activity each day. At least twice a week this should include activities to improve bone health (activities that produce high physical stresses on the bones), muscle strength and flexibility. The PSA target for the Department for Culture, Media and Sport and the Department for Education and Skills is to increase the percentage of schoolchildren doing 2 hours’ high-quality PE each week to 85% by 2008. ¹
Adults ⁸	For cardiovascular health, adults should achieve a total of at least 30 minutes of at least moderate intensity physical activity a day, on 5 or more days a week. More specific activity recommendations for adults are made for beneficial effects for individual diseases and conditions. All movement contributes to energy expenditure and is important for weight management. To prevent obesity, in the absence of an energy intake reduction, 45-60 minutes of moderate intensity physical activity on at least 5 days of the week may be needed. For bone health, activities that produce high physical stresses on the bones are necessary. The PSA target for the Department for Culture, Media and Sport is to achieve a 3% increase by 2008 in the proportion of adults from priority groups achieving at least 30 minutes of moderate-intensity sport and recreational physical activity on at least three days a week. Priority groups are defined as women, black and ethnic minorities, people with a limiting disability and people from lower socioeconomic groups. ¹
Older people ⁸	The recommendations for adults are also appropriate for older adults. Older people should take particular care to keep moving and retain their mobility through daily activity. Additionally, specific activities that promote improved strength, coordination and balance are particularly beneficial for older people.

The recommended levels of activity can be achieved either by doing all the daily activity in one session, or through several shorter bouts of activity of 10 minutes or more. The activity can be lifestyle activity (activities that are performed as part of everyday life), or structured exercise or sport, or a combination of these. ⁸

B

Overweight and obesity: reducing the burden

National action

Examples of current **national action** to help tackle overweight and obesity include the following.

Diet and nutrition

- Sure Start – action to encourage more women to breastfeed and to continue for at least six months.
- Healthy Start – to ensure children in low-income families have access to a healthy diet, and to increase support for breastfeeding.
- The 5 A DAY programme – to increase access to and consumption of fruit and vegetables. The programme includes:
 - the School Fruit and Vegetable Scheme, which provides a free piece of fruit or vegetable each school day to over 2 million 4-6 year old children
 - local community initiatives, and
 - the 5 A DAY logo for use on food and drink packaging.
- Food throughout the school day:
 - the Food in Schools Programme – promoting a ‘whole-school approach’ and encouraging greater access to healthier choices within schools
 - transforming school meals – action to transform school meals with healthier, nutritious food following tough new minimum nutritional standards
 - action to improve training opportunities for school caterers
 - Ofsted to make an assessment of school food as part of their routine evaluation of school performance
 - the School Food Trust – action to promote healthier menus in schools, by championing best practice and providing support to schools facing the change process
 - National Healthy School Standard – using a ‘whole-school approach’ to develop healthy behaviours in young people. (The standard includes a healthy eating theme.)
- Work with the food industry to address the amount of fat, salt and added sugar in the diet. Action includes:
 - food labelling – to ensure accurate and informative food labelling by providing the food industry with guidance on clear food labelling
 - signposting the nutrient content of food on packaging labels using a multiple traffic light system to ensure consumers have ‘at a glance’ information about the nutritional content of foods.
- Promotion of foods to children – action to redress the imbalance in the way foods are currently promoted to children.

Physical activity

- Local Exercise Action Pilots – to test the effectiveness of different PCT-led community approaches to increasing physical activity levels.
- Pedometers – The government will distribute 100,000 pedometers to PCTs across the country, as part of the National Step-O-Meter Programme (NSP). It is also piloting the use of pedometers in schools.
- The national PE, School Sport and Club Links strategy – to enhance the take-up of sporting opportunities by 5-16 year olds so that the percentage of schoolchildren in England who spend a minimum of 2 hours each week on high-quality PE and school sport increases to 75% by 2006 and 85% by 2008.

- One of the targets of the Public Service Agreement for the Department for Culture, Media and Sport is, by 2008, to increase the number of people who participate in active sports at least 12 times a year by 3%, and to increase the number who engage in at least 30 minutes of moderate-intensity sport at least three times a week by 3%.
- National Healthy School Standard – action to promote a whole-school approach to increasing physical activity, including development of a school physical activity strategy.
- Making the Case for Play and Developing Provision for Children's Play – enhancing children's and young people's access to good play experiences.
- Work to improve access and safety in public places to encourage physical activity – including the cross-governmental initiative Cleaner, Safer, Greener Communities.
- Green Gyms – providing people with opportunities to increase their levels of physical activity through involvement in practical conservation activities.
- Walking the Way to Health Initiative – which aims to get more people walking in their own communities. It is estimated that, since 2000, the initiative has encouraged over one million people to walk more. Pedometers are promoted to raise people's awareness of the amount of physical activity they undertake.
- Well@Work pilots – to test ways of making workplaces healthier and more active, involving 47 workplaces (private, public and voluntary sector) across England.
- Department for Transport travel planning – action to encourage schools, workplaces and communities to consider sustainable travel options which also increase physical activity.
- By 2008, most people will have, within 20 minutes' travel time from their home, a good multi-sports environment such as a school, sports club or leisure centre.
- Sports facilities programmes such as Active England, the New Opportunities for PE and Sport initiative and the Community Club Development Programme are supporting the development of over 4,000 new or refurbished sports facilities.
- More playing fields have been created than lost.
- The National Sports Foundation will fund a range of projects to benefit grassroots sport.

Other national initiatives

- The new GP contract – Participating practices are required to offer relevant health promotion advice to patients as part of the Quality and Outcomes Framework (QOF) incentives.
- The new pharmacy contract – A substantial public health role has been built into the new pharmacy contract. Community pharmacies are to offer weight reduction programmes, with signposting to other services and the potential to refer people to personal health trainers.¹⁹
- The new dental contract – Specific functions in relation to dental public health have been included in the contract, including offering relevant health promotion advice to patients.

Local action

Diet and nutrition

There is a wide range of potentially effective population-based interventions in a variety of settings, from promoting breastfeeding by new mothers to campaigns to persuade shopkeepers to stock fruit and vegetables in areas where access would otherwise be difficult (so called 'food deserts').



For a fuller discussion of the options see page 63 and **Tool 16**.

B

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Physical activity

Population-based approaches at local level range from targeting children at home and school by promoting active play and building more physical education and sports sessions into the curriculum and after school, to targeting adults in the workplace by providing facilities such as showers and bike parks to encourage walking or cycling to work.



For a fuller discussion of the options see page 63 and **Tool 16**.

The whole-population approach: advantages and barriers

Advantages of the whole-population approach include:

- Large numbers of people can benefit.
- The lifestyle changes required are modest and achievable.
- Many different sectors and agencies can play a part.
- It may be relatively low-cost.

Barriers include:

- People are often resistant to changes in lifestyle.
- The main determinants are often beyond an individual's scope for control.
- The process may be very long-term.

The effectiveness of population approaches to prevent overweight and obesity

The National Institute for Health and Clinical Excellence (NICE) has recommended evidence-based effective population approaches to prevent overweight and obesity following a comprehensive review of the best available evidence of effectiveness, including cost-effectiveness. They have published reviews⁶ on the evidence of effectiveness of prevention interventions targeted at:

- the general population
- children
- adults
- black, minority ethnic groups
- vulnerable groups, and
- vulnerable life stages.



Tool 13 *Evidence of effectiveness* provides summaries of these evidence reviews. See also **Tool 14** *Evidence of cost-effectiveness*.

Derek Wanless, in his report *Securing good health for the whole population*²⁰ recommended that interventions should be evidence-based, but that the lack of conclusive evidence should not, where there is a serious risk to the nation's health, be used as an excuse for inertia. In *Choosing health*,²¹ the Department of Health acknowledged the lack of investment in public health research and has pledged to increase support for investigations into the effectiveness (and cost-effectiveness) of different preventive strategies.

It is important to remember that a lack of strong evidence of effectiveness does not necessarily mean evidence of ineffectiveness – it simply means that more research is needed and better methods for evaluating interventions need to be developed.

PREVENTING OVERWEIGHT AND OBESITY IN INDIVIDUALS AT RISK

This approach focuses on people known to be at a higher risk of becoming overweight or obese than the general population. A list of categories of individuals who are considered to have a higher risk is given on page 60. In practice it means targeting healthy eating and physical activity interventions at low-income individuals and families, or people from vulnerable ethnic communities. Examples include health promotion through Sure Start children's centres and ethnic minority community programmes. In primary care it may mean giving advice on nutrition and exercise to help prevent overweight or obesity in individuals with co-morbidities such as high blood pressure, insulin resistance or diabetes.²²

The individuals-at-risk approach: advantages and barriers

Advantages of the individuals-at-risk approach are:

- Resources can be focused on those most likely to benefit.
- People who are at risk are usually more motivated to make lifestyle changes.
- It is easier to attribute effects to efforts.
- The evidence of effectiveness is stronger than for the whole-population approach.
- Performance management and remuneration systems can be set to encourage the adoption of the at-risk approach.

Barriers include:

- There may be an element of 'victim-blaming' – placing all the responsibility on the 'at-risk' individual.
- People may feel stigmatised and experience negative body image.
- Weighing and measuring can be sensitive procedures.
- One-to-one or group work is usually resource-intensive.
- Pressure on time allocated for appointments can lead to unsatisfactory consultations for both primary care workers and patients.
- Language and cultural obstacles.

Psychological influences

A number of psychological issues impact on overweight and obesity. These can include low self-esteem and poor self-concept and body image (see pages 25 and 29). When taking an individual approach, it is important to consider personality, socioeconomic status and culture. It is important to tackle the *behaviour* which increases overweight and obesity, and programme designers should be very careful not to inadvertently stigmatise individuals.²³ Studies have shown that overweight and obesity are frequently stigmatised in industrialised societies, and they emphasise the importance of family and peer attitudes in the generation of psychological distress in overweight and obese children.²⁴ When working with children, it is particularly important to work with the whole family, not just the child.²⁴ Children often do not make their own decisions about what and how much they eat. Their parents will influence what they eat and any of the parents' own food issues (such as over-eating, anorexia or body image) can impact on the food available to the child and to the child's subsequent relationship with food. In many cases children may be quite happy being overweight and not experiencing any psychological ill-effects from it, until they are taken by their parents to seek treatment, when they may begin to feel that there is something wrong with them, triggering emotional problems.²⁵

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For more information

At least five a week: Evidence on the impact of physical activity and its relationship to health. A report from the Chief Medical Officer

Department of Health (2004).

London: Department of Health.

Available from: www.dh.gov.uk/assetRoot/04/08/09/81/04080981.pdf

Four commonly used methods to increase physical activity: brief interventions in primary care, exercise referral schemes, pedometers and community-based exercise programmes for walking and cycling. Public Health Intervention Guidance no. 2

National Institute for Health and Clinical Excellence (NICE) (2006).

London: NICE.

Available from: www.publichealth.nice.org.uk/page.aspx?o=PHI002

Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children

National Institute for Health and Clinical Excellence (NICE) (2006).

London: NICE.

Available from: www.nice.org.uk/guidance/CG43

More information on obesity – Choosing health. Resource pack

Department of Health (2004).

London: Department of Health.

Available from: www.dh.gov.uk/assetRoot/04/07/60/80/04076080.pdf

Tackling child obesity – first steps

The Audit Commission, the Healthcare Commission and the National Audit Office (2006).

London: The Stationery Office.

Available from: www.nao.org.uk/publications/nao_reports/05-06/0506801.pdf

Managing overweight and obesity through primary care

The aim of managing overweight and obesity through primary care is to achieve and maintain weight loss by promoting sustainable changes in lifestyle.²⁶ Primary care provides a potentially ideal setting for weight management interventions for adults.² About 75% of the population see their GP in the course of one year and about 90% in five years.²⁷ Contact rates with community pharmacists are even higher.²⁷ Community pharmacists are ideally placed to reach certain groups, such as young men, who are known, on average, to visit their GP less frequently than other population groups. Primary care practitioners, particularly GPs, practice nurses, health visitors, community nurses, community dietitians, midwives and community pharmacists, are potentially well placed to detect and manage obesity in high-risk patients.

In order to provide a structured approach in the prevention and management of overweight and obese patients, clinical guidance has been developed. In England, the National Institute for Health and Clinical Excellence (NICE) has published national guidance on the prevention, identification, assessment and management of overweight and obesity in adults and children.⁶

Evidence-based recommendations are provided on the clinical management of overweight and obesity in the NHS, and advice is offered on the prevention of overweight and obesity that applies in both NHS and non-NHS settings. The NICE guideline on obesity also provides guidance on the use of the anti-obesity drugs orlistat and sibutramine, and on the place of surgical treatment.

Other guidance focuses primarily on the management of overweight and obesity in the primary care setting. For example, in the UK the Department of Health,²⁸ the National Obesity Forum (NOF)²⁶ and PRODIGY Knowledge²⁹ have provided guidance for the management of *adult* overweight and obesity in primary care. The Scottish Intercollegiate Guidelines Network (SIGN)³⁰ has also developed guidelines but these are currently under review. In addition, the Department of Health,²⁸ SIGN³¹ and the Royal College of Paediatrics and Child Health (RCPCH) and NOF³² have produced guidance for the management of obesity in *children and young people* in primary care.

Such guidance also includes obesity care pathways which offer a flowchart of the decisions to be made and the care to be provided for an overweight or obese patient, in a stepwise sequence. In summary, the obesity care pathways include two key stages:

- assessment (weight, risk factors and current health), and
- management (weight and risk factors).



The Department of Health's care pathways are targeted exclusively at primary care clinicians in England. There is one for use with children and young people and one for use with adults.²⁸ (See pages 167-171 in **Tool 17**.) NICE has developed much broader clinical care pathways, one for use with children and one for use with adults.⁶ These pathways focus on the assessment and management of overweight and obesity in primary, secondary and tertiary care. NICE has also taken into account the prevention and management of overweight and obesity in non-NHS settings such as schools, workplaces and the broader environment. (See pages 161-166 in **Tool 17**.) The National Obesity Forum's *Obesity care pathway and toolkit*³³ provides further information about the role of weight management through secondary and tertiary care.

Care pathways have also been produced by the National Health and Medical Research Council of Australia^{34, 35} and the National Heart, Lung and Blood Institute of the US.^{36, 37}

Weight management

Effective weight control usually requires a combination of some or all of the following, depending on the degree of overweight, readiness to change and response to weight management:

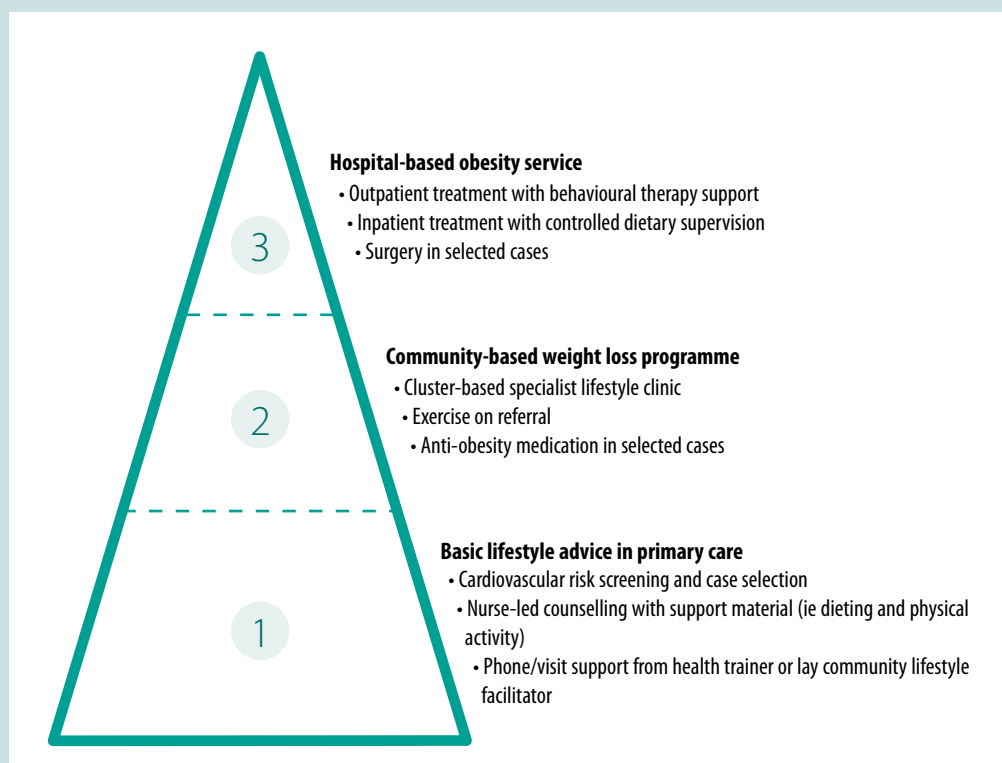
- dietary advice and support
- physical activity advice and support
- motivational counselling
- drug treatment
- behavioural therapy
- surgery.

A model showing how these interventions can be combined into a three-tier weight management service is shown in Figure 9 on the next page.

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Figure 9 Triple-tier service model for weight management



Source: Adapted from Maryon-Davis, 2005²

For the long-term management of obese children, NICE,⁶ SIGN³¹ and the Department of Health²⁸ have recommended that treatment should only be considered when a family is ready to change and willing to make the appropriate lifestyle changes.

The primary goal of weight management is a sustainable healthy lifestyle.^{32, 33}



See **Tool 17** *Dealing with overweight and obesity – Guidance for health professionals.*

The challenge and the opportunities

One of the greatest challenges is to make therapeutic weight management in everyday primary care practicable, effective and sustainable. Research into primary care management in the UK³⁸ found that, although 55% of respondents believed that obesity was one of their top priorities, fewer than half had been involved in setting up weight management clinics, and the majority of general practices (69%) had not established such clinics.

The revised Quality and Outcomes Framework (QOF) for the new GP contract^{39, 40} provides incentives for assessing BMI and associated risk factors, and providing appropriate advice and treatment.

*Choosing health through pharmacy: A programme for pharmaceutical public health 2005-2015*⁴¹ lists 10 key public health roles for pharmacy, one of which is to reduce obesity among children and the population as a whole. Community pharmacists and their staff will provide targeted information and advice on diet and physical activity and offer weight reduction programmes. Pharmacies will also be able to refer people directly on to 'exercise on referral schemes' rather than indirectly through GPs.¹⁹ Overweight and obesity are issues related to inequalities, and community

pharmacies are particularly well located to assist with weight management, as many of them are based close to residential areas and have few physical and psychological barriers related to access.

The role of health trainers, as outlined in *Choosing health: Making healthy choices easier*²¹ will be to provide personalised healthy lifestyle plans for individuals to improve their health and prevent disease. Health trainers will be either lay people drawn from the more disadvantaged communities, or health and other professionals specially trained in offering basic healthy lifestyles advice and motivational counselling.

The challenge is to implement effective prevention and management strategies for overweight and obesity at local level. Section C of this toolkit gives practical guidance on how to do this.

For more information

CLINICAL GUIDANCE: UK

Children and young people

Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children

National Institute for Health and Clinical Excellence (NICE) (2006).
London: NICE.

Available from: www.nice.org.uk/guidance/CG43

Care pathway for the management of overweight and obesity

Department of Health (2006).
London: Department of Health.

Available from: www.dh.gov.uk/obesity

Management of obesity in children and young people. A National Clinical Guideline

Scottish Intercollegiate Guidelines Network (2003).
Edinburgh: SIGN.

Available from: www.sign.ac.uk/pdf/sign69.pdf

An approach to weight management in children and adolescents (2-18 years) in primary care

Royal College of Paediatrics and Child Health and National Obesity Forum (2002).
London: Royal College of Paediatrics and Child Health.

Available from: shop.healthforallchildren.co.uk/pro.epl?DO=IMAGE&ID=Approach_2PAGES_TOGETHER

Adults

Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children

National Institute for Health and Clinical Excellence (NICE) (2006).
London: NICE.

Available from: www.nice.org.uk/guidance/CG43

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Care pathway for the management of overweight and obesity

Department of Health (2006).
London: Department of Health.
Available from: www.dh.gov.uk/obesity

JBS 2: Joint British Societies' guidelines on prevention of cardiovascular disease in clinical practice

British Cardiac Society, British Hypertension Society, Diabetes UK, HEART UK, Primary Care Cardiovascular Society, The Stroke Association (2005).
Heart; 91; Suppl V: v1-v52.
Available from: heart.bmj.com/cgi/content/extract/91/suppl_5/v1

National Obesity Forum obesity care pathway and toolkit

National Obesity Forum (2005).
London: National Obesity Forum.
Available from: nationalobesityforum.org.uk/content/blogcategory/18/170/

National Obesity Forum guidelines on management of adult obesity and overweight in primary care

National Obesity Forum (2004).
London: National Obesity Forum.
Available from: nationalobesityforum.org.uk.pre-dns-change.com/content/blogcategory/31/125/

Obesity

PRODIGY Knowledge (2001).
Newcastle: Sowerby Centre for Health Informatics at Newcastle Ltd (SCHIN).
Available from: www.prodigy.nhs.uk/obesity

Obesity in Scotland. Integrating prevention with weight management. A National Clinical Guideline recommended for use in Scotland (Under review)

Scottish Intercollegiate Guidelines Network (1996).
Edinburgh: SIGN.
Available from: www.sign.ac.uk/pdf/sign8.pdf

CLINICAL GUIDANCE: INTERNATIONAL

Australia

Clinical practice guidelines for the management of overweight and obesity in children and adolescents

National Health and Medical Research Council (2003).
Canberra, ACT: NHMRC.
Available from: www.health.gov.au/internet/wcms/publishing.nsf/Content/obesityguidelines-guidelines-children.htm

Clinical practice guidelines for the management of overweight and obesity in adults

National Health and Medical Research Council (2003).
Canberra, ACT: NHMRC.
Available from: www.health.gov.au/internet/wcms/publishing.nsf/Content/obesityguidelines-guidelines-adults.htm

United States

The practical guide: Identification, evaluation, and treatment of overweight and obesity in adults

National Heart, Lung and Blood Institute (2000).

Bethesda, MD: National Institutes of Health.

Available from: www.nhlbi.nih.gov/guidelines/obesity/prctgd_c.pdf

Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults: The evidence report

National Heart, Lung and Blood Institute (1998).

Bethesda, MD: National Institutes of Health.

Available from: www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.pdf

NICE OBESITY GUIDANCE IMPLEMENTATION SUPPORT TOOLS

Obesity: Costing template

Obesity: Costing report

Obesity: Audit criteria

Obesity: Presenter slides

Obesity: Guide to resources to support implementation

National Institute for Health and Clinical Excellence (NICE) (2006).

London: NICE.

Available from: www.nice.org.uk/guidance/CG43

GP CONTRACT

Standard General Medical Services contract (2006)

Available from: www.dh.gov.uk/assetRoot/04/13/72/68/04137268.pdf

Revisions to the GMS contract, 2006/07. Delivering investment in general practice

British Medical Association and NHS Employers (2006).

London: BMA and NHS Employers.

Available from: www.nhsemployers.org/primary/index.cfm

GENERAL

Diabetes Commissioning Toolkit

Department of Health (2006).

London: Department of Health.

Available from: www.dh.gov.uk/assetRoot/04/14/02/85/04140285.pdf

Weight management in primary care: How can it be made more effective?

A Maryon-Davis (2005).

Proceedings of the Nutrition Society; 64: 97-103.

For details see: www.ingentaconnect.com/content/cabi/pns/2005/00000064/00000001/art00013

B

**Overweight and obesity:
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- 3 Australasian Society for the Study of Obesity (ASSO) (2004) *Obesity in Australian adults: Causes, prevention and management*. Sydney: ASSO
- 4 Department of Health (2005) *Choosing a better diet: A food and health action plan*. London: Department of Health
- 5 National Heart Forum (2002) *Towards a generation free from coronary heart disease. Policy action for children's and young people's health and well-being*. London: National Heart Forum
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- 7 Department of Health (2005) *Choosing activity: A physical activity action plan*. London: Department of Health
- 8 Department of Health (2004) *At least five a week. Evidence on the impact of physical activity and its relationship to health. A report from the Chief Medical Officer*. London: Department of Health
- 9 National Institute for Health and Clinical Excellence (2006) *Four commonly used methods to increase physical activity: brief interventions in primary care, exercise referral schemes, pedometers and community-based exercise programmes for walking and cycling*. London: NICE. www.publichealth.nice.org.uk/page.aspx?o=PHI002
- 10 Office for National Statistics (2003) *National Diet and Nutrition Survey: Adults aged 19 to 64 years. Volume 2: Energy, protein, carbohydrate, fat and alcohol intake*. London: TSO
- 11 Office for National Statistics (2002) *National Diet and Nutrition Survey: Adults aged 19 to 64 years. Volume 1: Types and quantities of foods consumed*. London: TSO
- 12 Scientific Advisory Committee on Nutrition (2003) *Salt and health*. London: TSO. www.food.gov.uk/multimedia/pdfs/saltandhealth0503.pdf
- 13 Office for National Statistics (2002) *National Diet and Nutrition Survey: Adults aged 19 to 64 years. Volume 3: Vitamin and mineral intake and urinary analytes*. London: TSO
- 14 Ministry of Agriculture, Fisheries and Food (1992) *Food and nutrient intakes of British infants aged 6-12 months*. London: HMSO
- 15 Office for Population Censuses and Surveys (1995) *National Diet, Nutrition and Dental Survey of children aged 1½ to 4½ years, 1992-1993*. London: HMSO
- 16 Office for National Statistics (2001) *National Diet and Nutrition Survey: Young people aged 4 to 18 years, 1997*. London: TSO
- 17 Department of Health (1995) *Sensible drinking: The report of an inter-departmental working group*. London: Department of Health
- 18 NHS Health and Social Care Information Centre (2005) *Health Survey for England 2004. Updating of trend tables to include 2004 data*. London: NHS Health and Social Care Information Centre. www.ic.nhs.uk/pubs/hlthsvyeng2004upd
- 19 Royal Pharmaceutical Society of Great Britain (2005) *Practice guidance: Obesity*. London: RPSGB
- 20 Wanless D (2004) *Securing good health for the whole population*. London: HM Treasury
- 21 Department of Health (2004) *Choosing health: Making healthy choices easier*. London: Department of Health
- 22 Department of Health (2003) *Annual report of the Chief Medical Officer 2002: Health check: On the state of the public health*. London: Department of Health
- 23 ESRC (2004) *ESRC Seminar Series: Mapping the policy landscape. Tackling obesity – Changing behaviour*. Swindon: ESRC
- 24 Lobstein T, Baur L, Uauy R (2004) Obesity in children and young people: a crisis in public health. Report to the WHO by the International Association for the Study of Obesity. *Obesity Reviews*; 5; Suppl. 1: 4-85
- 25 Braet C, Mervielde I, Vandereycken W (1997) Psychological aspects of childhood obesity: a controlled study in a clinical and nonclinical sample. *Journal of Pediatric Psychology*; 22: 59-71
- 26 National Obesity Forum (2004) *National Obesity Forum guidelines on management of adult obesity and overweight in primary care*. London: National Obesity Forum. nationalobesityforum.org.uk/pre-dns-change.com/content/blogcategory/31/125
- 27 House of Commons Health Select Committee (2004) *Obesity: Third report of session 2003-2004, volume 1*. London: TSO
- 28 Department of Health (2006) *Care pathway for the management of overweight and obesity*. London: Department of Health
- 29 PRODIGY Knowledge (2001) *Obesity*. Newcastle: Sowerby Centre for Health Informatics at Newcastle Ltd (SCHIN). www.prodigy.nhs.uk/obesity

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- 31 Scottish Intercollegiate Guidelines Network (2003) *Management of obesity in children and young people. A National Clinical Guideline*. Edinburgh: SIGN
- 32 Royal College of Paediatrics and Child Health and National Obesity Forum (2002) *An approach to weight management in children and adolescents (2-18 years) in primary care*. London: Royal College of Paediatrics and Child Health
- 33 National Obesity Forum (2005) *National Obesity Forum obesity care pathway and toolkit*. nationalobesityforum.org.uk/content/blogcategory/18/170
- 34 National Health and Medical Research Council (2003) *Clinical practice guidelines for the management of overweight and obesity in adults*. Canberra, ACT: NHMRC
- 35 National Health and Medical Research Council (2003) *Clinical practice guidelines for the management of overweight and obesity in children and adolescents*. Canberra, ACT: NHMRC
- 36 National Heart, Lung and Blood Institute (2000) *The practical guide: Identification, evaluation, and treatment of overweight and obesity in adults*. Bethesda, MD: National Institutes of Health
- 37 National Heart, Lung and Blood Institute (1998) *Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults: The evidence report*. Bethesda, MD: National Institutes of Health
- 38 Dr Foster (2005) *Primary care management of adult obesity*. London: Dr Foster
- 39 Department of Health (2006) *General Medical Services (GMS contract)*. London: Department of Health
- 40 British Medical Association and NHS Employers (2006) *Revisions to the GMS contract, 2006/07. Delivering investment in general practice*. London: BMA and NHS Employers. www.nhsemployers.org/primary/index.cfm
- 41 Department of Health (2005) *Choosing health through pharmacy*. London: Department of Health

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Developing a local overweight and obesity strategy

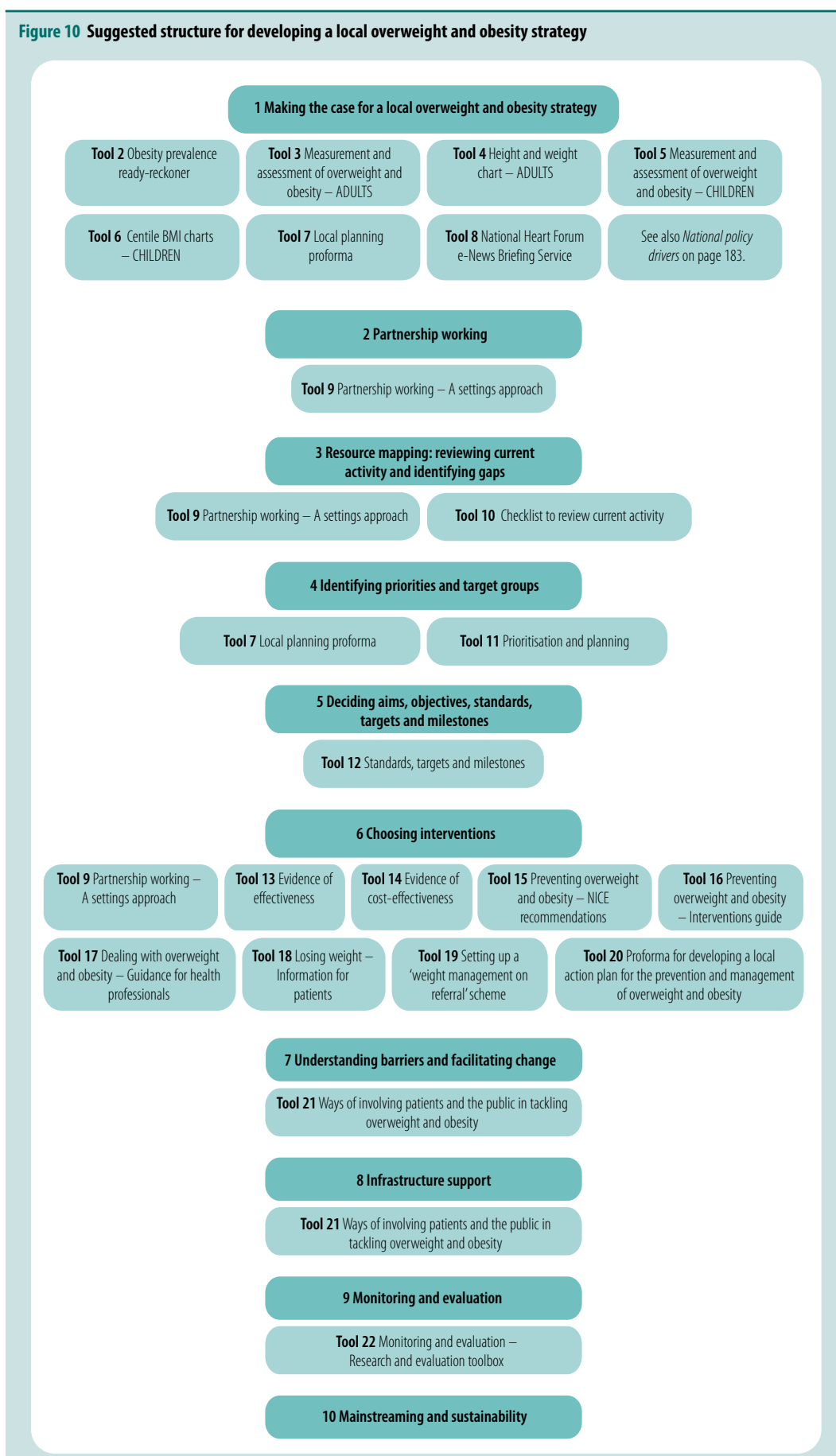
C

This section of the toolkit provides a practical guide to developing a local strategy to prevent and manage overweight and obesity. The diagram in Figure 10 on the next page shows all the aspects covered in this section and signposts the reader to the relevant tools in section D.



Tool 1 shows a suggested structure for a local overweight and obesity strategy containing all the elements displayed in the diagram on the next page.

Figure 10 Suggested structure for developing a local overweight and obesity strategy



Making the case for a local overweight and obesity strategy

The case for a local overweight and obesity strategy should be built on:

- the key policy drivers – both national and local
- an estimate of the local burden of overweight and obesity
- an estimate of the potential benefits of local action, and
- an estimate of the cost of taking action.

Key policy drivers

National policy drivers

The prevention and management of overweight and obesity is a national government priority concern.

The major policy driver published in 2004 as a public health white paper – *Choosing health: Making healthy choices easier*¹ – set out government commitments for action on obesity, including stemming the rise in obesity among children aged under 11. This reflects the Public Service Agreement shared by the Department of Health, the Department for Education and Skills and the Department for Culture, Media and Sport to **halt the year-on-year rise in obesity among children aged under 11 by 2010 in the context of a broader strategy to tackle obesity in the population as a whole.**² The government's delivery plan, published in 2005 in the reports *Delivering Choosing health: Making healthier choices easier*,³ *Choosing a better diet: A food and health action plan*⁴ and *Choosing activity: A physical activity action plan*,⁵ provides further details on the action that needs to be taken at national, regional and local level to improve people's health through improved diet and nutrition and increasing physical activity.

More detailed information on relevant national policy drivers is given on page 183.

Local policy drivers

Local policy drivers to tackle obesity are likely to include local agreements, targets, standards, policies and strategies which relate to the promotion of healthy lifestyles and the provision of high-quality management of chronic diseases such as coronary heart disease, diabetes or cancer. Key policy drivers for local action on adult obesity are already in place through the National Service Frameworks for coronary heart disease⁶ and diabetes.⁷ In addition, the Priorities and Planning Framework⁸ for primary care trusts (PCTs) includes advice on diet and activity.

However, the publication of *Choosing health* has pushed forward the obesity agenda and is the key policy driver for tackling obesity, particularly childhood obesity, at the local level. Delivery planning for *Choosing health* is an integral part of PCTs' Local Delivery Plans (LDPs). LDPs are the strategic plans for PCTs in which they set out in detail their plans for delivery of health and social care over a three-year period as detailed in *National standards, local action: Health and social care standards and planning framework 2005/06-2007/08*.⁹ They should be developed in close consultation with local authority partners and other key stakeholders in Local Strategic Partnerships (LSPs) to ensure the LDP is aligned with the local community strategy. Under these plans, PCTs take all the best experience of whole-systems planning and cross-sector partnerships based on sound analysis of local need. LDP developments include the introduction of a new monitoring line on adult obesity status from 2005/06 and a new monitoring line on prevalence of obesity among children.

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overweight
and obesity
strategy

The Department of Health has stated in its instructions to strategic health authorities (SHAs)¹⁰ that local obesity plans will need to have a strong focus on designing and developing services for:

- dietary improvement (eg Food in Schools, 5 A DAY)
- increasing physical activity (eg the National Healthy Schools Programme, pedometers, exercise on referral, more opportunities for children's play)
- provision of services around obesity care pathways for adults and children
- increasing the health improvement workforce (eg school nurses, health trainers), and
- Local Area Agreements (LAAs) and Local PSA targets (LPSAs).

Estimating the local burden of overweight and obesity

Prevalence

Although some areas have local prevalence data derived from various *ad hoc* local surveys, in most areas estimates must be either extrapolated from national surveys or obtained from general practice registers.

The Health Survey for England provides data on the proportion of adults who are overweight and obese. Robust estimates of adult obesity at strategic health authority level are available based on three-year rolling averages. These data can be applied to the local demographic profile of a PCT to calculate an estimate of prevalence.



Tool 2 is a ready-reckoner to help you estimate the prevalence of obesity among both adults and children in your local area.

The Department of Health has produced guidance for PCTs which provides advice on how to measure the height and weight of children aged between 2 and 11 years.¹¹ PCTs are required to measure all primary school children in the Reception Year (ages 4 to 5 years) and in Year 6 (ages 10 to 11 years). These data will provide an indication of prevalence of overweight and obesity among the population group. (For analysis of the prevalence of overweight and obesity among children measured in 2005/06 data, go to www.dh.gov.uk/assetRoot/04/14/21/56/04142156.pdf). These data will also help inform local planning and targeting of local resources and interventions. The importance of weighing and measuring is detailed further on page 61. (For the Department of Health's guidance on weighing and measuring, go to www.dh.gov.uk/obesity.)

The quality of general practice data has up until now been patchy, but the introduction of standardised clinical systems software and the Quality and Outcomes Framework (QOF) under the General Medical Services (GMS)¹² contract mean that more reliable and more comprehensive data are now becoming available. The data include numbers of patients on practice registers for a range of chronic diseases and risk factors. These are collated centrally through the Quality Management and Analysis System (QMAS) and provided to primary care trusts as annual estimates of prevalence. The revision of the QOF (2006)¹³ has included the addition of obesity as a new area offering 8 points to GP surgeries for producing a register of patients who are obese: "OBESITY 1: The practice can produce a register of patients aged 16 years and over with a BMI greater than or equal to 30kg/m² in the last 15 months." This will provide an indication of prevalence.

Cost

Estimating the costs of overweight and obesity at local level is difficult, and depends on:

- the degree of complexity used in modelling
- the validity of the various assumptions used in calculations
- the clinical guidelines and prescribing regimes followed, and
- the current costs of drugs.

Approximate values can be derived by applying national figures to the local estimates of prevalence, either as calculated using the process described in **Tool 2**, or from the prevalence data derived from general practices through the Quality and Outcomes Framework of the GMS contract (eg via QMAS).

Estimating the potential benefits of local action

Ideally, estimations should include cost-benefit analyses, although these are extremely difficult to quantify. Theoretically, there are two components to analyse:

- the number of cases of overweight and obesity prevented by lifestyle changes in the population (and hence the cost-benefits of prevention), and
- the number of cases of coronary heart disease, diabetes, strokes, and obesity-related cancers prevented by effective identification and management of overweight and obesity (and hence the cost-benefits of screening for obesity).

In practice, however, it has proved difficult to model such analyses with any degree of accuracy.

Estimating the cost of taking action

NICE has produced a costing report and costing template to estimate the financial impact to the NHS of implementing the clinical guideline on obesity. The costing template provides health communities with the ability to assess the likely local impact of the principal recommendations in the clinical guideline based on local population, and other variables can be amended to reflect local circumstances. The costing report focuses on the financial impact of the recommendations that require most change in resources to implement in England. Go to www.nice.org.uk/guidance/CG43 to download the costing report and template.



Other tools which can help with making the case for a local overweight and obesity strategy include:

Tool 3 *Measurement and assessment of overweight and obesity – ADULTS*

Tool 4 *Height and weight chart – ADULTS*

Tool 5 *Measurement and assessment of overweight and obesity – CHILDREN*

Tool 6 *Centile BMI charts – CHILDREN*

Tool 7 *Local planning proforma.*

See also **Tool 8** *National Heart Forum e-News Briefing Service* for how to get up-to-date information on issues related to overweight and obesity.



Key Point

Tackling overweight and obesity should be a given priority – but estimating the size of the problem locally, and the burden it represents, is often useful in securing commitment.

Partnership working

The public health white paper, *Choosing health*,¹ emphasises the importance of partnership working. In a *Planning and performance toolkit*¹⁴ sent to PCTs from the Department of Health, great emphasis was placed on partnership working to ensure the delivery of the plan. Particular importance was placed on the partnership between PCTs, local authorities and other stakeholders in Local Strategic Partnerships.

Identifying key partners

Tackling overweight and obesity at local level requires a 'whole-systems' approach to increase physical activity levels and to promote a balanced diet. This involves a range of partners in planning the strategy, steering its implementation, ensuring that it meshes appropriately with a wide range of related parallel strategies and policies, and implementing the strategy. Many of these partnerships are likely to exist already, either formally or informally – for example, as part of a healthy lifestyles programme, a National Service Framework implementation programme or a chronic disease management programme.

Key partners may include representatives from the NHS, local authorities, the private sector, patient groups, and the voluntary and community sectors.

Benefits of partnership working

The Health Development Agency (HDA)¹⁵ outlined the following advantages created by partnership working:

Good partnership working can:

- generate solutions to problems that single agencies cannot solve
- improve the services local communities receive
- enhance the coordination of services across organisational boundaries, and
- avoid wasteful duplication and gaps in services, thus making better use of existing resources.

Working together should help individual partners to meet their own objectives, as well as contributing to shared targets and objectives through:

- access to additional data and information
- improved understanding of community needs and aspirations
- economies of scale through pooling resources
- access to a broader range of skills through joint appointments, secondments and shared training
- potential for innovation, and
- opportunities for shared learning.

Effective partnerships

There are no unique models for partnership working. Partnerships should be developed to meet local needs and circumstances. Evidence collected by the HDA¹⁶ suggests that the following factors help to build successful partnerships:

- a shared vision and common priorities
- a strategic planning framework – themes, population groups, areas and settings
- a strategic partnership structure and accountability agreements
- champions and leaders at strategic and operational levels
- coordinated needs assessment and community involvement
- cross-cutting commissioning arrangements
- flexible use of resources – staff, money, time and facilities
- a coordinated approach to mainstreaming initiatives
- common local targets and indicators, and
- partnership learning and staff development.



Tool 9 provides examples of partnership working in different settings.

Establishing a local overweight and obesity action team

A key partnership that may need to be created specifically is an overweight and obesity action team to coordinate and steer the elements most relevant to tackling overweight and obesity. This team does not need to be large and unwieldy. Core inputs are:

- health promotion
- public health
- nutrition and dietetics
- leisure/physical activity
- school nursing
- education
- transport.

It is essential to include in the overweight and obesity action team someone with expertise in the evaluation of community projects (see page 83).

Others can be included as and when appropriate. For example, if the focus is on detection and management of existing cases, the team might also include:

- patient or carer
- GP and/or practice nurse
- primary care quality facilitator
- commissioner
- hospital specialist.



Key Point

A useful model is to establish a dedicated operational partnership, such as a local overweight and obesity action team, working under a more strategic partnership framework such as the Local Strategic Partnership.

Resource mapping: reviewing current activity and identifying gaps

This involves a service review, a 'gap analysis' or audit of local services, initiatives and infrastructure including protocols, procedures, pathways and practice, to find out:

- What is currently happening?
- Where are the gaps?
- What are the priorities?
- What are the opportunities for development?



Tool 10 provides a checklist to use when reviewing current activity and assessing how well services and initiatives are delivering in the various settings.

For each service, initiative or infrastructure component, the following questions should be addressed:

- How well does it meet needs?
- Which groups are missing out?
- What development or further action is needed?



Key Point

Each partner agency is usually best placed to undertake the mapping for its own sphere of influence and to feed its findings into the audit.

Identifying priorities and target groups

With limited resources and capacity, and with such a wide range of possible initiatives and interventions, both in terms of prevention and management, decisions will have to be made about where to focus efforts. A balance must be found between a whole-population approach and an 'individuals-at-risk' approach.

First, the balance between prevention and management needs to be considered. How much of the available resources and capacity should go into changing the environment from an obesogenic environment to a supportive environment to prevent overweight and obesity, and how much into case-finding and treatment?

Second, within each of these broad approaches, decisions have to be made about priority interventions and target groups. Each partner agency should contribute to this process, beginning with those interventions for which it has the lead role. So, for example, the leisure department of the local authority might propose that certain physical activity or sports programmes be focused on men aged over 35 years. Or the primary care trust might propose a case-finding and treatment scheme aimed specifically at ethnic groups who have a high risk of obesity.

A number of organisations can assist with mapping high-risk groups and identifying deprivation levels:

- Public Health Observatories – www.apho.org.uk/apho
- The North East Public Health Observatory has an on-line mapping facility which can identify obesity rates at PCT and ward level (North East region data only) www.nepho.org.uk/index.php?c=204
- University of Sheffield Public Health GIS Unit – gis.sheffield.ac.uk/newpages/projects.htm
- Communities and Local Government – Indices of Deprivation – www.communities.gov.uk/index.asp?id=1128440
- Local academic departments – www.hero.ac.uk/uk/home/index.cfm
- A number of commercial organisations can also help with mapping.

Targeting specific population groups

Some sectors of the population are more at risk of developing obesity or its complications¹⁷ and should be considered as priorities for targeting preventive initiatives. These include the following.

- Children from low-income families. There is a correlation between low income and a greater risk of obesity in childhood as well as adulthood.
- Children from families where at least one parent is obese. The increased risk may be due to genetic and/or environmental reasons.
- Individuals of Asian origin, particularly those of South Asian origin, for whom obesity carries a greater risk of metabolic syndrome and its consequences.
- Ethnic groups with a higher than average prevalence of obesity (BMI 30-39.9kg/m² – ie excluding the severely obese). The latest Health Survey for England (2004)¹⁸ shows that the highest prevalences are among Black African women (33.5%), Black Caribbean women (27.9%), Pakistani women (26%), Black Caribbean men (25%), and Irish men (23.6%), compared to 21.7% of men and 20.8% of women in the general population. Other groups have average or below average prevalences. The lowest prevalences are in Chinese women (7.3%), Chinese men (5.7%) and Bangladeshi men (5.5%).
- Adults in semi-routine and routine occupations (using the National Statistics Socio-Economic Classification [NS-SEC]): 18.7% of women in managerial and professional households are obese compared with 29.1% of women in routine and semi-routine households.¹⁹

- People who have a physical disability, particularly in terms of mobility, which makes exercise difficult.
- People with learning difficulties.
- Older people. Increasing age is associated with increasing prevalence of obesity up to the age of 64 years, and then a decline in the prevalence begins.

The national annual weighing and measuring exercise to record the heights and weights of children in Reception (ages 4-5 years) and Year 6 (ages 10-11 years) will enable primary care trusts, local authorities and other partners to gain a better understanding of children's needs in this area. This will enable local organisations to target resources and interventions where they are most needed, and ensure efforts are directed more effectively. Go to www.dh.gov.uk/obesity for the Department of Health's guidance on how to measure the height and weight of children.

CASE STUDY

Using local weighing and measuring data to target resources – Westminster PCT

Westminster PCT is using local weighing and measuring data to tackle childhood obesity in their area. School nurses weighed and measured more than 90% of primary school pupils in Reception Year and in Year 6. Data showed that a third of these children are overweight or obese, putting child obesity levels at the second highest in London. Westminster PCT is therefore targeting two to five year olds by working with families through Children's Centres and the Health Visitor Health Promotion Programme; and targeting nine and ten year olds by working on a one-to-one basis in schools with the highest percentage of obese children. This includes using intensive robust physical exercise and healthy eating programmes.

For more information contact: Alison Wright, Professional Lead for Children's Services, Westminster PCT.

Phone: 020 7150 8030

Targeting individuals

In terms of the individual, there are times when people are more likely to put on weight: for example, men in their late 30s, women entering long-term partnerships, women during and after pregnancy, women at the menopause, people suffering from psychosocial problems such as stress or depression, people who retire, and people giving up smoking.¹⁷



Key Point

Because of the national target to tackle obesity in children under 11, any preventive programme should give priority to this broad group.



The following tools can help with identifying priorities and target groups:

Tool 7 *Local planning proforma*

Tool 11 *Prioritisation and planning*

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Deciding aims, objectives, standards, targets and milestones

Aims and objectives set the 'direction of travel' of the strategy. Standards, targets and milestones are more specific operational goals against which the whole strategy and its component strands can be evaluated.

Aims and objectives

An **aim** is a general statement of strategic intent. For example, the overall aim of your local overweight and obesity strategy could be along the following lines:

- To reduce the burden of death, disability and distress due to overweight and obesity in the population served by [the named PCT].

The strategy should have two basic subsidiary aims reflecting its two main approaches, such as:

- **Prevention:** To prevent overweight and obesity developing in the community, and
- **Management:** To manage existing cases of obesity.

Objectives are more specific than aims. They refer to particular outcomes or outputs of either the preventive or management elements of the strategy. For example, 'prevention' objectives might be:

- To encourage children to adopt and sustain healthy eating patterns in school, at home and in the community.
- To increase the habitual level of physical activity in young women.

A 'management' objective might be:

- To establish a 'weight management on referral' scheme for patients who have a BMI above 30kg/m².

Standards, targets and milestones

A **standard** is an operational goal which usually prescribes a specific level of quality of a service. Standards are particularly useful as 'process' indicators – a way of assessing how well a service is delivering or developing its intended outputs. In practice, standards to be achieved within given timeframes are often used as targets and milestones.

A **target** is an objective or standard with a specified measurable outcome, output or level of quality within a timeframe. For example, a prevention target might be:

- To increase the proportion of the local population who participate in 30 minutes of moderate physical activity five or more times a week to 70% by 2020.

Local target-setting is being encouraged as a core principle of NHS and local partnership planning. For example, the Department of Health has issued the following checklist of principles for local target-setting in its latest planning guidance.⁹ In developing local plans, PCTs should ensure that the plans:

- are in line with population needs
- address local service gaps
- deliver equity
- are evidence-based
- are developed in partnership with other NHS bodies and local authorities, and
- offer value for money.

A **milestone** is an interim position on the way towards a target. It provides a useful means of demonstrating shorter-term progress and is used in monitoring and evaluation.



Tool 12 provides further information about standards, targets and milestones.

The challenge for local overweight and obesity action teams is to choose the appropriate combination of a whole-population approach and an individuals-at-risk approach.

Choosing interventions

A fundamental aspect of planning is to consider which of the many possible interventions or actions should be incorporated into local strategies and plans. Decisions will be based on various factors, including:

- evidence of effectiveness
- outcomes of public health interventions
- appropriateness for the local community or local groups (eg black and minority ethnic communities) and cultural issues
- cost-effectiveness
- national guidance such as the NICE guideline on obesity²⁰
- available resources
- timeframes, and
- organisational and political pressures.



Tool 13 provides evidence of effectiveness of interventions for tackling overweight and obesity, improving diet and nutrition and increasing physical activity levels.

Tool 14 provides evidence of cost-effectiveness of interventions.

Tool 15 gives a summary of the NICE recommendations for preventing overweight obesity. It includes recommendations both for NHS health professionals and for local authorities and partners in the local community.

NICE has also produced *Quick reference guide 1 – For local authorities, schools and early years providers, workplaces and the public*, which contains guidance on how to put the NICE guideline's recommendations into practice. The guide can be downloaded from www.nice.org.uk/guidance/CG43

PREVENTING OVERWEIGHT AND OBESITY

It is important to recognise that the concept of obesity prevention does not simply mean preventing normal-weight individuals from becoming obese. Rather, it encompasses a range of strategies that aim:

- to prevent the development of overweight in normal-weight individuals
- to prevent the progression of overweight to obesity in those who are already overweight, and
- to prevent weight regain in those who have been overweight or obese in the past but who have since lost weight.

The prevention strand of the overweight and obesity strategy should be based on providing supportive and accessible physical environments and on the 'lifecourse' approach. It should include interventions, starting from childhood:

- to improve diet and nutrition (eg providing advice about infant feeding and healthy eating for young families, reducing salt consumption and increasing fruit and vegetable consumption), and
- to increase community-wide levels of physical activity (eg promoting walking and cycling, promoting use of leisure facilities, and local transport policies).

The selection of interventions might involve:

- assessing the feasibility and probability of success
- where possible, considering the cost-effectiveness of particular interventions
- achieving a balance between the preventive and management strands of the overall strategy
- taking into account national guidance such as the NICE guideline on obesity²⁰
- assessing what can be done within budget and infrastructure constraints
- developing action plans for the key settings, and identifying specific 'deliverables', the lead agency or individual for each deliverable, and the date by which these must be achieved, and
- choosing appropriate settings for interventions as detailed below.

A practical framework for local programmes could be that offered by the so-called 'healthy settings' approach, which focuses on interventions in a number of key settings to develop a coordinated programme for obesity prevention. There are many possible settings to develop: from home to hospital, from park to prison, and from community group to club or pub. Each provides a particular opportunity to influence people's eating, drinking and physical activity habits. A range of settings for action to prevent overweight and obesity is shown in Table 8. Some examples of interventions to prevent obesity by improving nutrition and increasing physical activity are given on pages 65-69.²¹



Tool 9 describes how partnerships can work in different settings.

Table 8 Main settings for preventing overweight and obesity

Setting	Main target group(s)
Home (including pre-school)	Infants, pre-school children and their parents or carers
School	School-age children, parents, teachers, school governors
Workplace	Employees and employers, and their families; catering providers
Community (community groups and faith groups)	Minority groups, eg people with cultural or ethnic identities, refugees and asylum-seekers, travellers, homeless people
Leisure outlets	General public and specific sub-groups (eg older people)
Retail and commerce outlets	General public and specific sub-groups (eg younger people), food retailers, catering providers
Media	General public and specific sub-groups (eg younger people, older people)

Source: Adapted from Maryon-Davis, 2005²²

Home (including pre-school)

- Promotion of breastfeeding.
- Promotion of healthy infant feeding.
- Promotion of healthy eating and active lifestyles for young families, eg encouraging parents to actively play with their children and to reduce sedentary behaviour (by limiting the amount of television a child watches, or visiting the local park, play area or swimming pool).
- 'Positive parenting', eg action to promote breastfeeding, and appropriate weaning and infant feeding, with one-to-one verbal advice by health visitors or lay workers (mother-to-mother schemes); breastfeeding drop-ins and cafés; written support materials; mass media features; Sure Start programmes; National Breastfeeding Awareness Week.
- Action to promote healthy eating and active living for young children including 'positive parenting' advice or classes; training for childminders and playgroup leaders around healthy eating and active play; providing safe play areas.

School

- Creating a whole-school health-promoting environment, eg National Healthy Schools Standard and Healthy Schools Partnerships.
- Developing a 'whole-school food policy' through engagement with the entire school community, including young people.
- Teaching healthy eating and cooking skills, eg slots for nutrition in the curriculum; and slots for teaching healthy cooking skills.
- Providing healthy food and drink throughout the school day – healthier breakfast club provision, implementing guidelines on minimum nutritional standards for school food, replacing drinks and snacks which are high in fat, salt and sugar with healthier alternatives (eg fruit tuck-shops, healthier vending machines, freely available drinking water).
- Healthy catering guidelines written into catering contracts.
- For more information and detailed recommendations for improving food in schools, see www.foodinschools.org and www.schoolfoodtrust.org.uk.

The Food in Schools Programme

The Food in Schools Programme encourages a whole-school approach to healthy eating and drinking. There are two main strands, one of which is the implementation of strategies to support and enhance food education in schools. These include professional development for teachers, and curriculum materials supporting links with science and technology. The other strand is the *Food in Schools Toolkit* which provides schools and other stakeholders with guidance and resources on activities such as healthy breakfast clubs, healthy tuck shops and healthy cookery clubs. The new school food standards will build on this and take schools a step further.

For more information, visit www.foodinschools.org

- Increased uptake of physical activity and sports, eg enjoyable activities, physical education and sports sessions built into the curriculum and after school, including non-traditional forms such as dance in order to develop skills in enjoyable ways; safe routes to schools, and walking buses (schoolchildren walking in supervised groups); cycling training; and other forms of active travel to and from school.
- Provision of personalised support and a range of options for children and young people seeking help to control their weight, eg with the school nursing service able to support children and parents, and to make referrals to relevant community and specialist services when needed.

Workplace

- Interventions to encourage healthy lifestyles among staff include weight control through healthy eating and increased physical activity, eg healthy catering; providing cycle-parking racks, tax-free cycle-to-work schemes, and shower facilities; fitness sessions; providing recreational facilities; occupational health checks; providing information to employers and employees; making stairwells attractive (as an alternative to using lifts); and workplace health programmes.

CASE STUDY

Choosing activity in the workplace – St Helens PCT

Activity in the workplace is featured within the Active St Helens programme. The Metropolitan Borough Council (MBC) and the PCT have set up regular lunchtime walks for staff. They have also set up a 'stepometer league', which has been so successful in the MBC that it has received national media coverage. The PCT organised a unique 'Olympic' stepometer league, with departments being awarded medals for outstanding walking achievements. In addition to this, physical activity opportunities are advertised through PCT and MBC communication channels. The PCT has a policy which entitles staff to take 30 minutes out of their normal working hours to engage in a physical activity of their choice. The MBC is also promoting low-cost corporate passes to leisure centres as incentives for employees, under the branding of 'Go active'.

For more information contact: Neil Davies, Health Improvement Specialist, St Helens PCT. Phone: 01744 697433

Community

- Healthy eating campaigns, eg media campaigns; work with local supermarkets; healthy eating accreditation schemes for restaurants and food outlets; removal of promotion of high-fat and high-sugar foods and drinks from leisure centres, schools and hospitals.
- Strategies to minimise barriers to healthy eating by improving availability and access, eg mapping of 'food deserts'; supermarket pricing policies to encourage healthier choices; and town planning to site food shops selling fruit and vegetables close to areas of deprivation.
- Group work on healthy eating for higher risk or disadvantaged groups, eg identification and mapping of at-risk groups; culturally sensitive group work; and peer education.
- Physical activity and fitness campaigns, eg physical activity for older people; home-based exercise; and campaigns targeted at at-risk groups.
- Encouraging the use of leisure facilities, eg improved leisure facilities at affordable prices.
- Use of community centres and schools for leisure and physical activity. The introduction of extended schools provides opportunities for more community links to be developed.
- Increased walking or cycling to school and to the workplace, eg safe routes to school and the workplace; and walking buses (schoolchildren walking to and from school in supervised groups).
- Local transport policies which encourage walking and cycling, eg provision of reliable, comfortable, frequent, safe and affordable public transport; restriction of use of cars in urban areas; better traffic-calming; creation of safe cycling and walking routes; and wider use of CCTV cameras.
- Local planning to encourage physical activity, eg more parks and open spaces; better street lighting and safe, clean environments.

5 A DAY locally

5 A DAY initiatives are taking place across the country in PCTs and can be used for increasing fruit and vegetable consumption among the general population from school through to primary care. Below are some examples of local initiatives. For more information, visit the website www.5aday.nhs.uk

Cook and eat sessions

These generally involve a group of people attending one or a series of practical cookery sessions to learn about preparing fruit- and vegetable-based dishes and other healthy options. In addition to teaching cooking skills, these sessions can also teach food preparation skills, food safety and basic nutrition. They give people the chance to try different foods without the fear of wasting money if they do not like them.

Growing schemes

These include allotment schemes, community orchards and gardens, school-based growing schemes and 'grow your own' initiatives. The produce is used for growers' own consumption, for the community, or to supply other initiatives such as food co-ops or community cafés.

Fruit and vegetable co-ops

Local people group together to buy fruit and vegetables in bulk from wholesalers or direct from local producers. The savings from the bulk-buying are passed on to the co-op members so that the fruit and vegetables are sold at reasonable prices. They can operate in places such as community centres, schools and workplaces, and are generally run by volunteers.

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Voucher schemes

Families on low incomes or those at risk of diet-related disease receive vouchers for money off the cost of fruit and vegetables in local shops over a period of time, to encourage purchase and consumption of fruit and vegetables. The vouchers can be given or 'prescribed' by primary health care professionals such as GPs or nurses.

5 A DAY with retailers and caterers

Work with shops and caterers to make fruit and vegetables more accessible by increasing the range on offer, having prominent and eye-catching displays, offering promotional discounts, and providing information on fruit and vegetable preparation and recipes.

5 A DAY in a primary care setting

Activities can include nutrition training for health professionals, offering fruit and vegetables at surgeries and clinics, and fruit and vegetables 'on prescription' for patients.

Leisure outlets

- Offering free or inexpensive access to a wide range of activities, eg use of subsidised access schemes for less wealthy local residents.
- Providing healthy catering at all leisure venues, eg inexpensive healthy choices in leisure centre cafés and vending machines; removing the promotion of less healthy foods and drinks in leisure centres.
- Providing coordinated outreach physical activities for specific groups, eg healthy walks schemes; and exercise sessions for older people in care homes.
- Encouraging more users to walk or cycle to leisure venues, eg providing cycle-parking racks at all leisure venues.
- Closer links with local schools, eg collaborating with local schools to integrate sports and physical activity into the curriculum, organising after-school initiatives, and extending the use of educational facilities as a community resource for physical activity.
- Making the countryside more accessible and attractive for all, to encourage outdoor recreation in the countryside.

CASE STUDY

Walking and cycling – Rushcliffe PCT

The Rushcliffe Walking and Cycling group was formed in 2004 to encourage people to take up these forms of everyday activity. The group includes Rushcliffe Primary Care Trust, Rushcliffe Community Service Volunteers, Rushcliffe Borough Council, Nottinghamshire County Council and local voluntary groups. The group has been involved in the provision of training for volunteer walk leaders to set up local 'walking for health' groups, and is developing an *Easy Walk Guide* for Rushcliffe residents with details of short walks over Rushcliffe.

The 'Easy Rides' cycle programme has been expanded. These are short, led cycle rides along traffic-free and quiet roads in Rushcliffe suitable for cycling novices and those returning to cycling. The group has also continued to work with Ridewise which provides adult cycle training to develop people's skills, knowledge and confidence from riding a bike to route planning.

For more information contact: Lucy Durling, Rushcliffe PCT. Phone: 0115 878 3000

Retail outlets

- Harnessing the power of the retail industry to create a climate where physical activity and healthy eating are considered 'cool' – for example, engaging large chain stores and other local retailers in promotions and campaigns to sell the 'get physical' message to young people; or involving retailers of fruit and vegetables and juices in the same way.

Media

- Harnessing the power of the local media to create a 'buzz' around a series of mass participation events – eg articles, features or interviews in local newspapers and radio or TV programmes to promote local health days, mini-marathons, healthy cook-ins, 'aerobathons' and other events.

Advice on the choice of interventions for improving diet and nutrition and physical activity are available from two toolkits: *Let's get moving!*²³ and *Nutrition and food poverty*²⁴ both produced by the Faculty of Public Health and the National Heart Forum.



Tool 13 provides evidence of effectiveness of interventions for tackling overweight and obesity.

Tool 14 provides evidence of cost-effectiveness of interventions.

Tool 15 summarises the NICE recommendations.

Tool 16 provides a comprehensive guide to interventions for the prevention of overweight and obesity in different settings.

The challenge is to make the best use of the opportunities created by action at national level.

For more information

Physical activity

Active for later life – Promoting physical activity with older people. A resource for agencies and organisations

BHF National Centre for Physical Activity and Health (2003).

London: British Heart Foundation.

Four commonly used methods to increase physical activity: brief interventions in primary care, exercise referral schemes, pedometers and community-based exercise programmes for walking and cycling. Public Health Intervention Guidance no. 2

National Institute for Health and Clinical Excellence (NICE) (2006).

London: NICE.

Available from: www.publhealth.nice.org.uk/page.aspx?o=PHI002

Let's get moving! A physical activity handbook for developing local programmes

A Maryon-Davis, L Sarch, M Morris, B Laventure (2001).

London: Faculty of Public Health and National Heart Forum.

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The effectiveness of public health interventions for increasing physical activity among adults: A review of reviews. 2nd edition

M Hillsdon, C Foster, B Naidoo and H Crombie (2005).

London: Health Development Agency.

Available from: www.publichealth.nice.org.uk/page.aspx?o=505281

Think fit! Be active! A guide to developing a workplace activity programme

British Heart Foundation (2005).

London: British Heart Foundation.

For details see: www.bhf.org.uk/thinkfit/index_home.asp?SecID=1590

Diet and nutrition

Food in Schools toolkit

Department of Health (2005).

London: Department of Health.

Available from: www.foodinschools.org/fis_toolkit.php

Eating well at school. Nutritional and practical guidelines

H Crawley, on behalf of the Caroline Walker Trust and the National Heart Forum (2005).

The Caroline Walker Trust.

For details see: www.cwt.org.uk

Nutrition and food poverty. A toolkit for those involved in developing or implementing a local nutrition and food poverty strategy

V Press, on behalf of the National Heart Forum and the Faculty of Public Health (2004).

London: National Heart Forum.

Available from: www.heartforum.org.uk/downloads/Nut_TkitAll.pdf

Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children

National Institute for Health and Clinical Excellence (NICE) (2006).

London: NICE.

Available from: www.nice.org.uk/guidance/CG43

General

Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults: The evidence report

National Heart, Lung, and Blood Institute (1998).

Bethesda, MD: National Institutes of Health (NIH).

Available from: www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.pdf

Creating a healthy workplace

(Leaflet and accompanying booklet.)

London: Faculty of Public Health and Faculty of Occupational Medicine (2006).

Available from: www.fph.org.uk/policy_communication/publications/leaflets/healthy_workplaces.asp

The management of obesity and overweight: An analysis of reviews of diet, physical activity and behavioural approaches. Evidence briefing. 1st edition

C Mulvihill and R Quigley (2003).

London: Health Development Agency.

Available from: www.phel.gov.uk/evidence/evidencedetails.asp?recordid=71

Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children

National Institute for Health and Clinical Excellence (NICE) (2006).

London: NICE.

Available from: www.nice.org.uk/guidance/CG43

Preventing childhood obesity: Health in the balance

Institute of Medicine of the National Academies (2005).

Washington DC: Institute of Medicine of the National Academies.

Available from: www.nap.edu/books/0309091969/html

Obesity guidance for healthy schools coordinators and their partners

Department of Health (2007).

London: Department of Health.

Available from: www.dh.gov.uk/assetRoot/04/14/21/71/04142171.pdf

MANAGING OVERWEIGHT AND OBESITY

As well as prevention, the other basic strand to any local overweight and obesity strategy is assessing and managing overweight and obese patients, mainly in primary care but also in the community and hospital settings. This section focuses on the tools that could help in the development of a comprehensive primary care weight management service.

Clinical guidance

Clinical guidance has been established to ensure that there is a systematic approach to the assessment and management of overweight and obesity. Examples of guidance available are shown in Table 9. In England the National Institute for Health and Clinical Excellence (NICE) has developed evidence-based guidance for the prevention, identification, assessment and management of overweight and obesity in children and adults.²⁰ The guidance is broad, focusing on clinical and non-clinical management with the following aims: 1) to stem the rising prevalence of obesity and diseases associated with it; 2) to increase the effectiveness of interventions to prevent overweight and obesity; and 3) to improve the care provided to adults and children with obesity, particularly in primary care. The Department of Health has also developed evidence-based guidance for use in England although this has been produced to support primary care clinicians to identify and treat children, young people and adults who are overweight or obese.²⁵ Included within these sets of guidance are care pathways which direct healthcare professionals to appropriate measures for assessing and managing overweight and obesity.



Tool 17 *Dealing with overweight and obesity – Guidance for health professionals* provides further details of the NICE and Department of Health care pathways for children, young people and adults.

Tool 18 *Losing weight – Information for patients* gives details of sources of information for adults and children who need to lose weight.

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Table 9 Clinical guidance for managing overweight and obesity in adults, children and young people

	Adults	Children and young people
England	National Institute for Health and Clinical Excellence (NICE) (2006) ²⁰ www.nice.org.uk/guidance/CG43 Department of Health (2006) ²⁵ www.dh.gov.uk/assetRoot/04/13/45/60/04134560.pdf	National Institute for Health and Clinical Excellence (NICE) (2006) ²⁰ www.nice.org.uk/guidance/CG43 Department of Health (2006) ²⁵ www.dh.gov.uk/assetRoot/04/13/45/60/04134560.pdf
United Kingdom	PRODIGY Knowledge (2001) ²⁶ www.prodigy.nhs.uk/obesity	Royal College of Paediatrics and Child Health and National Obesity Forum (2002) ²⁷ nationalobesityforum.org.uk/pre-dns-change.com/images/stories/W_M_guidelines/Children_and_adolescents.pdf
	National Obesity Forum (2004) ²⁸ nationalobesityforum.org.uk/pre-dns-change.com/content/blogcategory/31/125/	
	National Obesity Forum (2005) ²⁹ nationalobesityforum.org.uk/content/blogcategory/18/170/	
Scotland	Scottish Intercollegiate Guidelines Network (SIGN) (1996) ³⁰ www.sign.ac.uk/pdf/sign8.pdf Note: This guidance is currently under review.	Scottish Intercollegiate Guidelines Network (SIGN) (2003) ³¹ www.sign.ac.uk/pdf/sign69.pdf
United States	National Heart, Lung and Blood Institute (1998) ³² www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.pdf www.nhlbi.nih.gov/guidelines/obesity/prctgd_c.pdf	
Australia	National Health and Medical Research Council (2003) ³³ www.health.gov.au/internet/wcms/publishing.nsf/Content/obesityguidelines-guidelines-adults.htm	National Health and Medical Research Council (2003) ³⁴ www.health.gov.au/internet/wcms/publishing.nsf/Content/obesityguidelines-guidelines-children.htm

The important aspect of assessment is that people with greatest clinical need are prioritised and offered systematic weight management. This is a substantial task and practices will need appropriate support from PCTs and strategic health authorities. It is essential that practices not only record patients' weight details as outlined in clinical guidance, but also maintain a register of these patients including their risk factors. As an incentive to record and store this information, participating practices can use the Quality Management and Analysis System (QMAS) central database. This can also be used for local epidemiological analysis. Furthermore, the addition of obesity as a new area of the QOF is another incentive for GP surgeries to maintain a register of patients who are obese. Eight points are offered to those surgeries who do record patients' weight details. When recording patients' BMI and waist circumference it is important to use a standard template. The National Institute for Health and Clinical Excellence (NICE),²⁰ the Department of Health,²⁵ PRODIGY Knowledge,²⁶ the National Obesity Forum,^{28, 29} and the Royal College of Paediatrics and Child Health and National Obesity Forum²⁷ all provide advice for assessing patients.



Tool 4 provides a height and weight chart for adults.

Tool 6 provides centile BMI charts for children.

Exercise referral schemes

Following on from assessment some patients may benefit from an exercise referral. The Department of Health has published a National Quality Assurance Framework for exercise referral schemes.³⁵ This provides guidelines with the aim of improving standards among existing exercise referral schemes, and helping the development of new ones. The Framework focuses primarily on

the most common model of exercise referral system, where the GP or practice nurse refers patients to facilities such as leisure centres or gyms for supervised exercise programmes.

The National Quality Assurance Framework provides a range of tools for use in both primary and secondary prevention. See www.dh.gov.uk/assetRoot/04/07/90/09/04079009.pdf.

*NICE guidance on exercise referral schemes*³⁶

The Public Health Independent Advisory Committee (PHIAC) determined that there was insufficient evidence to recommend the use of exercise referral schemes to promote physical activity other than as part of research studies where their effectiveness can be evaluated. NICE recommends that practitioners, policy makers and commissioners should only endorse exercise referral schemes to promote physical activity if they are part of a properly designed and controlled research study to determine effectiveness. Measures should include intermediate outcomes such as knowledge, attitudes and skills, as well as measures of physical activity levels. Individuals should only be referred to schemes that are part of such a study.³⁶

Walking and cycling schemes

Primary care teams may also consider referring patients directly to walking or cycling programmes.

The Walking the Way to Health Initiative (WHI) of the British Heart Foundation and the Countryside Agency aims to improve the health and fitness of people who do little exercise or who live in areas of poor health. The scheme offers local walks in a wide variety of areas. The National Step-O-Meter Programme (NSP), managed by the Countryside Agency, aims to make it possible for NHS patients (especially those who take little exercise) to have the use of a Step-O-Meter (pedometer) free of charge for a limited loan period. Step-O-Meters are being made available to patients through health professionals. For more information about WHI and NSP see www.whi.org.uk.

Cycling referral programmes are a relatively new innovation, but can be useful for people who prefer cycling to walking or gym-based exercise. For more information, *Health on wheels: A guide to developing cycling referral projects*³⁷ is available from Cycling England: see www.cyclingengland.co.uk/health9.php.

*NICE guidance on pedometers, walking and cycling schemes*³⁶

PHIAC determined that there was insufficient evidence to recommend the use of pedometers and walking and cycling schemes to promote physical activity, other than as part of research studies where effectiveness can be evaluated. However, they concluded that professionals should continue to promote walking and cycling (along with other forms of physical activity, eg gardening, household activities and recreational activities) as a means of incorporating regular physical activity into people's daily lives.

NICE recommends that practitioners, policy makers and commissioners should only endorse pedometers and walking and cycling schemes to promote physical activity if they are part of a properly designed and controlled research study to determine effectiveness. Measures should include intermediate outcomes such as knowledge, attitude and skills, as well as measures of physical activity levels.

Weight control groups and 'weight management on referral' (or 'slimming on referral')

Other examples of interventions to manage overweight and obesity are weight control groups and, more recently, weight management on referral schemes. Many weight control groups have been set up as part of PCT local obesity programmes. Following an assessment of the patient and if appropriate, the GP refers the patient to a local group. For more on this, see the case studies on pages 74 and 75.

A number of PCTs are working with commercial slimming organisations to produce weight management on referral schemes.

NICE guidance on weight management on referral schemes²⁰

NICE suggests that primary care organisations and local authorities should recommend to patients, or consider endorsing, self-help, commercial and community weight management programmes only if they follow best practice by:

- helping people assess their weight and decide on a realistic healthy target weight (people should usually aim to lose 5-10% of their original weight)
- aiming for a maximum weekly weight loss of 0.5-1kg
- focusing on long-term lifestyle changes rather than a short-term, quick-fix approach
- being multicomponent, addressing both diet and activity, and offering a variety of approaches using a balanced, healthy-eating approach
- recommending regular physical activity (particularly activities that can be part of daily life, such as brisk walking and gardening) and offering practical, safe advice about being more active
- including some behaviour-change techniques, such as keeping a diary and advice on how to cope with 'lapses' and 'high-risk' situations
- recommending and/or providing ongoing support.



Tool 19 provides information on setting up a 'weight management on referral' scheme with a commercial slimming company.

CASE STUDY

Slimming on referral – Southern Derbyshire Health Authority

A slimming on referral programme was set up in to investigate the feasibility of referring patients to a local commercial slimming organisation. 107 obese patients from two GP practices were offered vouchers covering free membership and 12 weeks' attendance at a local group. After the free period, participants were able to continue attending but had to pay their own weekly fees. Follow-up arrangements were made in the primary care setting at both three and six months. An important element of the slimming on referral scheme was that referred patients were not made to feel any different to paying members. The approach is designed to empower members to have the skills and confidence to make healthy lifestyle changes over a sustained period of time. Of the 91 patients who enrolled, 62 completed the 12 weeks and 47 participants continued to pay weekly fees. Of the 62 patients who completed 12 weeks, mean weight loss was 5.4kg (6.4% weight loss).³⁸ In those who continued after 12 weeks by self-funding their attendance, mean weight loss was 11.1kg (11.3% weight loss) at 24 weeks. Significant improvements were also observed in mental well-being at 12 and 24 weeks.

For more information contact: Amanda Avery. Phone 01773 546084

CASE STUDY

Healthy eating service: Weight Wise programme – Rushcliffe PCT

A Weight Wise programme of education and information has been developed following a pilot. The Weight Wise group in Cotgrave sees patients who have been referred by their GP and who have additional problems associated with being overweight, such as high blood pressure or diabetes. Each person is set the target to lose 10% of their weight and once this is achieved and celebrated, the next target is set. Priority is given to those who are obese and cannot afford to join a commercially-run weight reduction group. At weekly appointments, patients are weighed and measured and have their blood pressure checked. They then have the opportunity to discuss progress and ask questions. Different topics are discussed each week such as eating low-fat foods, cutting down on sugar, eating smaller portions, eating more fruit and vegetables and becoming more active.

For more information contact: Julie Rippon, Head of Communications, Rushcliffe PCT.

Phone: 0115 878 3013 or 0115 956 0300

CASE STUDY

The MEND Programme – for overweight and obese children and their families

The MEND Programme is a community, family-based programme for overweight and obese children aged 7-13 and their families. The multi-component programme puts equal emphasis on Mind, Exercise and Nutrition ... and Do it! It combines all the elements known to be vital in treating and preventing overweight and obesity in children, including family involvement, practical education in nutrition, increasing physical activity, and behavioural change. As such, it is in line with all the key recommendations stipulated in the NICE guidance for management of overweight and obesity in children.²⁰ MEND does not advocate dieting for children, but instead aims to educate and empower families by providing them with the tools or foundation for healthy living for life.

The core MEND Programme consists of 18 two-hour sessions over nine weeks. Each session includes an hour of discussion – alternating between ‘mind’ (behaviour change) and nutrition topics – and an hour of fun exercise. The discussion sessions emphasise practical, hands-on learning using specially designed games, visual demonstrations and activities, including a supermarket tour and a recipe-tasting session. At least one parent or carer must accompany each child at every session.

The Programme has been designed so that it can be delivered and taught by a broad range of frontline staff, and not just health care professionals. A comprehensive trainer’s manual with detailed lesson plans enables non-health-professionals (with appropriate ‘on call’ support from specialists, if needed) to be fully equipped to lead the Programme. MEND also provides a full ‘kit’ containing all the teaching aids (posters, games, demonstration aids, and stationery) needed to run the programme, as well as more than 100 pages of colour handouts for the participants to keep.

The feasibility study for the MEND Programme showed statistically significant improvements in key outcome measures such as BMI, waist circumference, fitness and self-esteem.³⁹ The programme is currently being researched in the form of a large, multi-site randomised control trial under the auspices of the Institute of Child Health at Great Ormond Street Children’s Hospital, London.

MEND will be rolling out more than 300 Programmes across the country from 2007.

For more information visit www.mendprogramme.org. Phone: 0870 609 1405. Email: info@mendprogramme.org

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Roles of health professionals

The roles of health professionals are extremely important for ensuring that interventions can be developed and actioned effectively. Mulvihill and Quigley⁴⁰ found that there is evidence to support improving the role of health professionals in the management of overweight and obesity, in particular by:

- reminding GPs to recommend healthy eating plans
- a brief educational training intervention on obesity management delivered to GPs by behavioural psychologists
- encouraging shared care between GPs and a hospital service
- use of inpatient obesity treatment services, and
- training for both health professionals and leaders of self-help weight loss clinics.

Furthermore, NICE has identified that health professionals play an important and highly cost-effective role in providing brief advice on physical activity in primary care. They recommend that primary care practitioners should take the opportunity, whenever possible, to identify inactive adults and advise them to aim for 30 minutes of moderate activity on five days of the week (or more).³⁶

Health professionals in a range of settings have an important role in providing advice to overweight and obese patients. Examples may include: dentists who provide support relating to oral health; health trainers who work within communities promoting healthy lifestyles; and pharmacists who come into contact with patients who may not seek advice from their GP. The Royal Pharmaceutical Society of Great Britain⁴¹ has produced guidance for community pharmacists who provide advice on overweight and obesity. See www.rpsgb.org.uk/pdfs/obesityguid.pdf

In addition, the government has recognised the importance of developing the advice-giving role of health professionals, in order to improve local services to patients. Research undertaken for the *Choosing health* consultation found that some healthcare professionals, including GPs, were uncomfortable about raising the issue of weight with patients. They lacked confidence when it came to giving patients advice and also they were unaware of what weight loss services were available. Improving the training of front-line primary care staff – in terms of nutrition, physical activity and helping patients to change lifestyles – is an important requirement.

Dietitians in Obesity Management UK (DOM UK)⁴² have produced a directory providing details of a range of training. The directory specifically targets obesity management and provides contact details of trainers. The directory will continue to expand and broaden its focus over time and as more information and training courses become available. The intention at this stage is to provide a selection of examples of training courses.

CASE STUDY

Local Health Link Workers – Coventry Training Primary Care Trust

Local Health Link Workers are being employed to act as a bridge between services provided and local communities, to act as key message-bearers within the community, and to provide signposting for local people enabling them to access services appropriate to their needs. These workers, who are employed from the local community, have the potential to reduce the workload of GPs and primary care workers, and support access to services. One of the services they provide is to offer up-to-date information and consistent messages on lifestyle issues – including healthy eating and physical activity – signposting residents to services where appropriate, or simply reinforcing sensible messages.

For more information contact: Rebecca Blyth, Partnership Recruitment Lead.

Phone: 02476 246114. Email: rebecca.blyth@coventrypct.nhs.uk



The following tools can also help with choosing interventions:

Tool 13 *Evidence of effectiveness*

Tool 14 *Evidence of cost-effectiveness*

Tool 15 *Preventing overweight and obesity – NICE recommendations*

Tool 16 *Preventing overweight and obesity – Interventions guide*



Tool 20 provides a proforma for developing a local action plan for the prevention and management of overweight and obesity.

For more information

CLINICAL GUIDANCE: UK

Children and young people

Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children

National Institute for Health and Clinical Excellence (NICE) (2006).

London: NICE.

Available from: www.nice.org.uk/guidance/CG43

Care pathway for the management of overweight and obesity

Department of Health (2006).

London: Department of Health.

Available from: www.dh.gov.uk/obesity

Management of obesity in children and young people. A National Clinical Guideline

Scottish Intercollegiate Guidelines Network (2003).

Edinburgh: SIGN.

Available from: www.sign.ac.uk/pdf/sign69.pdf

An approach to weight management in children and adolescents (2-18 years) in primary care

Royal College of Paediatrics and Child Health and National Obesity Forum (2002).

London: Royal College of Paediatrics and Child Health.

Available from: nationalobesityforum.org.uk/pre-dns-change.com/images/stories/W_M_guidelines/Children_and_adolescents.pdf

Adults

Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children

National Institute for Health and Clinical Excellence (NICE) (2006).

London: NICE.

Available from: www.nice.org.uk/guidance/CG43

Care pathway for the management of overweight and obesity

Department of Health (2006).

London: Department of Health.

Available from: www.dh.gov.uk/obesity

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JBS 2: Joint British Societies' guidelines on prevention of cardiovascular disease in clinical practice

British Cardiac Society, British Hypertension Society, Diabetes UK, HEART UK, Primary Care Cardiovascular Society and The Stroke Association (2005).

Heart; 91; Suppl V: v1-v52.

Available from: heart.bmj.com/cgi/content/extract/91/suppl_5/v1

National Obesity Forum obesity care pathway and toolkit

National Obesity Forum (2005).

London: National Obesity Forum.

Available from: nationalobesityforum.org.uk/content/blogcategory/18/170/

National Obesity Forum guidelines on management of adult obesity and overweight in primary care

National Obesity Forum (2004).

London: National Obesity Forum.

Available from: nationalobesityforumorguk.pre-dns-change.com/content/blogcategory/31/125/

Practice guidance: Obesity

Royal Pharmaceutical Society of Great Britain (2005).

London: RPSGB.

Available from: www.rpsgb.org.uk/pdfs/obesityguid.pdf

Obesity

PRODIGY Knowledge (2001).

Newcastle: Sowerby Centre for Health Informatics at Newcastle Ltd (SCHIN).

Available from: www.prodigy.nhs.uk/obesity

Obesity in Scotland. Integrating prevention with weight management. A National Clinical Guideline recommended for use in Scotland (Under review)

Scottish Intercollegiate Guidelines Network (1996).

Edinburgh: SIGN.

Available from: www.sign.ac.uk/pdf/sign8.pdf

CLINICAL GUIDANCE: INTERNATIONAL

Australia

Clinical practice guidelines for the management of overweight and obesity in adults

National Health and Medical Research Council (2003).

Canberra, ACT: NHMRC.

Available from: www.health.gov.au/internet/wcms/publishing.nsf/Content/obesityguidelines-guidelines-adults.htm

Clinical practice guidelines for the management of overweight and obesity in children and adolescents

National Health and Medical Research Council (2003).

Canberra, ACT: NHMRC.

Available from: www.health.gov.au/internet/wcms/publishing.nsf/Content/obesityguidelines-guidelines-children.htm

United States

The practical guide: Identification, evaluation, and treatment of overweight and obesity in adults

National Heart, Lung, and Blood Institute (2000).

Bethesda, MD: National Institutes of Health.

Available from: www.nhlbi.nih.gov/guidelines/obesity/prctgd_c.pdf

Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults: The evidence report

National Heart, Lung, and Blood Institute (1998).

Bethesda, MD: National Institutes of Health.

Available from: www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.pdf

NICE OBESITY GUIDANCE IMPLEMENTATION SUPPORT TOOLS

Obesity: Costing template, Costing report, Audit criteria, Presenter slides, and Guide to resources to support implementation

National Institute for Health and Clinical Excellence (NICE) (2006). London: NICE.

Available from: www.nice.org.uk/guidance/CG43

INTERVENTION GUIDANCE

Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children

National Institute for Health and Clinical Excellence (NICE) (2006). London: NICE.

Available from: www.nice.org.uk/guidance/CG43

Four commonly used methods to increase physical activity: brief interventions in primary care, exercise referral schemes, pedometers and community-based exercise programmes for walking and cycling. Public Health Intervention Guidance no. 2

National Institute for Health and Clinical Excellence (NICE) (2006). London: NICE.

Available from: www.publichealth.nice.org.uk/page.aspx?o=PHI002

Obesity training resources

Directory: Obesity training courses for primary care

Dietitians in Obesity Management UK (2005). London: DOM (UK).

Available from: www.domuk.org/obesity_training.php

National Obesity Forum training resource for health professionals

National Obesity Forum. London: National Obesity Forum.

Available from: nationalobesityforum.org.uk/content/blogcategory/62/133/

GP CONTRACT

Standard General Medical Services contract (2006)

Available from: www.dh.gov.uk/assetRoot/04/13/72/68/04137268.pdf

Revisions to the GMS contract, 2006/07. Delivering investment in general practice

British Medical Association and NHS Employers (2006).

London: BMA and NHS Employers.

Available from: www.nhsemployers.org/primary/index.cfm

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GENERAL

Diabetes Commissioning Toolkit

Department of Health (2006).

London: Department of Health.

Available from: www.dh.gov.uk/assetRoot/04/14/02/85/04140285.pdf

Tackling child obesity – first steps

The Audit Commission, the Healthcare Commission, and the National Audit Office (2006).

London: The Stationery Office.

Available from: www.nao.org.uk/publications/nao_reports/05-06/0506801.pdf

Weight management in primary care: How can it be made more effective?

A Maryon-Davis (2005).

Proceedings of the Nutrition Society; 64: 97-103.

www.ingentaconnect.com/content/cabi/pns/2005/00000064/00000001/art00013

Understanding barriers and facilitating change

The main barriers to eating a healthier diet and being more physically active have been extensively considered in the public health white paper, *Choosing health: Making healthy choices easier*.¹ They include psychological, social, cultural, environmental and economic barriers.

Overcoming such barriers is clearly key to success.

Social marketing

Social marketing is about gaining an understanding of people and their 'relationships' with an issue and using that understanding to help design something you want them to interact with – such as a service, intervention or piece of communication. The objective is to support them in changing their behaviours to deliver improved health outcomes.

We all recognise that, in our daily lives, people are not all the same. People's attitudes, behaviours, peers, cultural heritage, incomes, education and knowledge, and other influences, determine the way they interact with other people and the world around them. These factors determine both what influences people, and the sources from which they will either seek or accept this influence. Social marketing is about developing this understanding and translating that knowledge into the design of initiatives in order to support people in changing their behaviours to deliver improved health outcomes. For more information on social marketing go to the National Social Marketing Centre's website on www.nsms.org.uk.

In relation to the national obesity programme, the social marketing team at the Department of Health has developed an understanding of the relationships of the target audience – families with children under 11 – with food and physical activity habits. This work has identified six groups of families, which appear to have markedly different attitudes and claimed behaviours. The groups vary in how susceptible they are to factors such as lack of access to inexpensive, energy-dense foods or to an environment which promotes sedentary behaviour and, as a result, some groups are more at risk of unhealthy weight gain than others. This work has also provided an understanding of the behaviours that need to be influenced for each of these groups and the barriers that stand in the way of people achieving positive change. This understanding underpins the overall obesity programme and should be reflected in the development of any local strategies aimed at preventing obesity.

The national obesity social marketing team can support local developments by working with colleagues to 'map' local populations and thereby identify the priority groups and behaviours that any initiatives should focus on. The national team will also be developing Health Improvement Partnerships with external organisations such as retail outlets. There will be significant opportunities to use these initiatives as a platform on which to build local activities. For more information, go to www.dh.gov.uk/obesity.

Public and patient involvement

One mechanism for helping to overcome barriers is through the involvement of the public and patients in the planning of healthy lifestyle programmes. For example, in England local residents are represented on Local Strategic Partnerships in three important ways: through direct representation on community councils; through elected members (councillors); and through the voluntary sector. There are also statutory requirements for effective patient and public involvement (PPI) throughout the NHS in all parts of the UK.



See **Tool 21** *Ways of involving patients and the public in tackling overweight and obesity*.

Communicating effectively

Information given to individuals by a variety of health professionals must be consistent. Delivering good information is also a matter of repeating it as often as the person needs to have it reaffirmed, timing it to be useful at the right moment, and allowing the person the opportunity to scrutinise and ask questions about any information given.

The Expert Patients Programme

The Expert Patients Programme (EPP) is a national NHS-based self-management training programme which provides opportunities for people who live with long-term conditions to develop new skills to manage their condition better on a day-to-day basis. For example, in tackling overweight and obesity, patients with diabetes or heart disease can learn how to start and maintain an appropriate exercise or physical activity programme. Set up in 2002, the Expert Patients Programme is based on research from the US and UK over the last two decades which shows that people living with long-term conditions are often in the best position to know what they need to manage their own condition. Provided with the necessary 'self-management' skills, people with long-term conditions can make a tangible impact on their own condition and on their quality of life more generally. EPP courses are being run by primary care trusts throughout England.

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For more information

Children and healthy eating: A systematic review of barriers and facilitators

J Thomas, K Sutcliffe, A Harden, A Oakley, *et al* (2003).

London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.

Available from: eppi.ioe.ac.uk/EPPIWebContent/hp/reports/healthy_eating02/Final_Report_web.pdf

Children and physical activity: A systematic review of barriers and facilitators

G Brunton, A Harden, R Rees, J Kavanagh, *et al* (2003).

London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.

Available from: eppi.ioe.ac.uk/EPPIWebContent/hp/reports/physical_activity02/Children_PA.pdf

Choosing health: Making healthy choices easier

Department of Health (2004).

London: TSO.

Available from:

www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4094550&chk=aN5Cor

Expert Patients Programme

For details see: www.expertpatients.nhs.uk

The nation's diet: The social science of food choice

A Murcott (ed) (1998).

London: Longman.

Infrastructure support

The main issues concerning infrastructure support are around the need to:

- involve the public, patients and carers
- build capacity in terms of staff, equipment and facilities
- set up appropriate education and training programmes
- ensure effective IT systems in primary care
- ensure good communications, and
- provide sufficient funding for all elements of the strategy.



See **Tool 21** *Ways of involving patients and the public in tackling overweight and obesity.*

Monitoring and evaluation

Evaluation of strategies and programmes for overweight and obesity is essential for:

- clinical governance
- audit and quality improvement
- providing information to the public
- strategy and performance development
- assessing value for money
- assessing sustainability, and
- increasing the evidence base.

There are two basic rules for successful evaluation:

- The evaluation process must be thought through from the start, at the same time as you develop the strategy's aims, objectives and targets.
- Adequate funding must be set aside for the evaluation. A good guide is 10% of the total budget.

Evaluation of community projects is not easy and not everything can be evaluated. The rationale for evaluation can include:

- to inform the day-to-day running of the project, to try to improve interventions and possibly to develop new ones
- to demonstrate worth and value for money to the funder, in order to support requests for continued or additional funding
- to define and examine successes and failures with all stakeholders, and to know how and why something works, as well as attempting to understand why it may not
- to assess behavioural change and environmental improvements
- to develop models of good practice that are then disseminated to others
- to contribute to the debate on obesity, and
- to assist with performance improvement.

The key areas to evaluate must be agreed among the partners, including the participants, to reflect their different agendas. Evaluation will include:

- measuring indicators of progress, including progress towards any targets
- assessing how well various aspects of the strategy were perceived to work from the viewpoint of professionals from all sectors and by communities, and
- assessing whether the changes were a result of the intervention.

It is essential to include in the overweight and obesity action team someone with expertise in the evaluation of community projects. This could be someone from the health or environment departments of a local university or further education college, a local dietitian, or someone from the nutrition department of a hospital or the community.



Tool 22 gives details of the *HEBS Research and evaluation toolbox*, produced by the Health Education Board for Scotland.

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Audit criteria for NICE guideline on obesity

NICE has developed audit criteria for the clinical guideline on obesity. The aim of the audit is to help health services and local authorities to determine whether they are implementing the guidance. The implementation of the audit will help organisations meet developmental standard D13 of *Standards for better health* set by the Department of Health. Standard C5(d) states that *"Healthcare organisations ensure that clinicians participate in regular clinical audit and reviews of clinical services."*²⁰ To download the NICE audit criteria, go to www.nice.org.uk/guidance/CG43.

For more information

Obesity: Audit criteria

National Institute for Health and Clinical Excellence (NICE) (2006).

London: NICE.

Available from: www.nice.org.uk/guidance/CG43

Evaluation resources for community food projects

P McGlone, J Dallison and M Caraher (2005).

London: Health Development Agency.

Available from: www.nice.org.uk/download.aspx?o=503365

HEBS Research and evaluation toolbox

Health Education Board for Scotland (HEBS).

Available from: www.hebs.com/research/retool

Self-evaluation: A handy guide to sources

New Opportunities Fund (2003).

London: New Opportunities Fund.

Available from: www.biglotteryfund.org.uk/er_eval_self_evaluation_uk.pdf

Mainstreaming and sustainability

A perennial problem facing local healthcare planners and providers is ensuring that effective practice is sustainable and 'mainstreamed' in terms of continued funding. Many innovative approaches are piloted using short-term funding streams and then, despite favourable evaluation, it is difficult to build them into budget baselines due to intense competition for mainstream funding. This is particularly true of preventive lifestyle initiatives which often have less measurable, less attributable, and shorter-term outcomes than interventions to manage overweight and obesity. However, a clear national focus on tackling overweight and obesity will strengthen the delivery of increased life expectancy, the prevention of avoidable illness, a reduction in health inequalities and an improvement in accessing healthcare services.

The challenge is to develop an overweight and obesity action plan.



Tool 20 provides a proforma for developing a local action plan for the prevention and management of overweight and obesity.

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- 2 HM Treasury (2004) *Stability, security and opportunity for all: Investing for Britain's long-term future. 2004 spending review: New public spending plans 2005-2008*. London: HM Treasury
- 3 Department of Health (2005) *Delivering Choosing health: Making healthier choices easier*. London: Department of Health
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- 5 Department of Health (2005) *Choosing activity: A physical activity action plan*. London: Department of Health
- 6 Department of Health (2000) *National Service Framework for coronary heart disease*. London: Department of Health
- 7 Department of Health (2001) *National Service Framework for diabetes: Standards*. London: Department of Health
- 8 Department of Health (2001) *Improvement, expansion and reform – the next 3 years: Priorities and planning framework*. London: Department of Health
- 9 Department of Health (2004) *National standards, local action: Health and social care standards and planning framework 2005/06–2007/08*. London: Department of Health
- 10 Department of Health (2005) *LDP 2005-08: Process for sign-off and Choosing health toolkit*. London: Department of Health
- 11 Department of Health (2006) *Measuring childhood obesity. Guidance to primary care trusts*. London: Department of Health
- 12 Department of Health (2004) *General Medical Services (GMS contract)*. London: Department of Health
- 13 British Medical Association and NHS Employers (2006) *Revisions to the GMS contract, 2006/07. Delivering investment in general practice*. London: BMA and NHS Employers. www.nhsemployers.org/primary/index.cfm
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Resources

D

This section contains:

- Tools 1-22, as highlighted in section C 89
- For more information 183
 - National policy drivers 183
 - Useful organisations and websites 189

Suggested structure for a local overweight and obesity strategy

Tool 1

Strategy section	Sections of this toolkit that can help
Making the case for a local overweight and obesity strategy The introduction to the strategy should outline the main elements – prevention and management – and give the reasons why local action is necessary to tackle overweight and obesity. For example: • national and local policy drivers • an estimate of the local prevalence and costs of overweight and obesity • an outline of the benefits of preventing, detecting and controlling overweight and obesity • an estimate of the cost of taking action.	<i>Pages 55-57</i> Tool 1 Suggested structure for a local overweight and obesity strategy Tool 2 Obesity prevalence ready-reckoner Tool 3 Measurement and assessment of overweight and obesity – ADULTS Tool 4 Height and weight chart – ADULTS Tool 5 Measurement and assessment of overweight and obesity – CHILDREN Tool 6 Centile BMI charts – CHILDREN Tool 7 Local planning proforma Tool 8 National Heart Forum e-News Briefing Service <i>Further reading</i> National policy drivers (page 183)
Partnership working This section should detail the key partners who will help to plan, implement and evaluate the strategy, and outline the establishment of an overweight and obesity action team and who it will include.	<i>Pages 57-59</i> Tool 9 Partnership working – A settings approach
Resource mapping: Reviewing current activity and identifying gaps This section of the strategy looks at what is currently happening at the local level on prevention and management of overweight and obesity. It could include the results of an audit to map local action and identify gaps, and the action each partner agency needs to take.	<i>Page 59</i> Tool 9 Partnership working – A settings approach Tool 10 Checklist to review current activity
Identifying priorities and target groups This section should consider how resources will be targeted and where to focus efforts.	<i>Pages 60-61</i> Tool 7 Local planning proforma Tool 11 Prioritisation and planning

Aims, objectives, standards, targets and milestones

Pages 62-63

This section should give the broad aims of the strategy, specific objectives and standards, and time-scheduled targets and milestones.

Tool 12 Standards, targets and milestones

Further reading:

National policy drivers (page 183)

Interventions to prevent and manage overweight and obesity

Pages 63-80

Using a settings approach, this section should outline the interventions that will be used to prevent and manage overweight and obesity.

Tool 9 Partnership working – A settings approach

Tool 13 Evidence of effectiveness

Tool 14 Evidence of cost-effectiveness

Tool 15 Preventing overweight and obesity – NICE recommendations

Tool 16 Preventing overweight and obesity – Interventions guide

Tool 17 Dealing with overweight and obesity – Guidance for health professionals

Tool 18 Losing weight – Information for patients

Tool 19 Setting up a 'weight management on referral' scheme

Tool 20 Proforma for developing a local action plan for the prevention and management of overweight and obesity

Understanding barriers and facilitating change

Pages 80-82

This section should outline:

- the obstacles which prevent people from adopting healthier lifestyles or adhering to treatment
 - ways in which these can be overcome, and
 - the roles of the individual and of health professionals and partner agencies.
-

Tool 21 Ways of involving patients and the public in tackling overweight and obesity

Infrastructure support

Page 82

This section should give details of the structures that need to be in place at the local level to implement an overweight and obesity strategy, such as capacity, IT systems, sufficient funding, and public and patient involvement.

Tool 21 Ways of involving patients and the public in tackling overweight and obesity

Monitoring and evaluation

Pages 83-84

This section should outline the methods that will be used for monitoring progress, assessing performance and evaluating the strategy.

Tool 22 Monitoring and evaluation – Research and evaluation toolbox

Mainstreaming and sustainability

Page 84

The strategy should also include plans on how to ensure that local action to prevent and manage overweight and obesity is mainstreamed and sustained.

Obesity prevalence ready-reckoner

Tool 2

This tool can be used to estimate the number of adults (aged 16 and above) or the number of children aged 4-10 years within a primary care trust who are obese or overweight.



An electronic version of the *Obesity prevalence ready-reckoner* – which can be completed online – can be found at: www.heartforum.org.uk or www.fph.org.uk

Estimating the prevalence of obesity and central obesity

The ready-reckoner on the next page can be used to estimate:

- the number of people who are obese – measured by Body Mass Index (BMI) of more than 30.0kg/m²
- the number of people with central obesity as measured by a raised waist circumference. A raised waist circumference has been taken to be 102cm (40 inches) or more in men and 88cm (35 inches) or more in women. These levels have been used to identify people at risk of the metabolic syndrome, a disorder characterised by increased risk of developing diabetes and cardiovascular disease. Central obesity, as measured by waist circumference, is reported to be more highly correlated with metabolic risk factors (high levels of triglycerides and low HDL cholesterol) than is elevated BMI.¹

How to use the ready-reckoner

- 1 In cells A1 to A7 and B1 to B7, enter the actual numbers of residents in each age group, based on latest population estimates for your area.
- 2 Calculate the other cell values according to the formulae.

Note: The ready-reckoner uses national data and does not take into account local factors such as ethnicity, deprivation or other factors that might affect overweight and obesity prevalence.

D

Resources

OBESITY PREVALENCE READY-RECKONER: Adults aged 16 and over

	A B		C D		E F	
	PCT population (Enter actual numbers)		Estimate of number of people who are obese (BMI greater than 30kg/m ²)		Estimate of number of people who have a raised waist circumference (Male 102cm or above. Female 88cm or above)	
Age	Male	Female	Male	Female	Male	Female
1 16-24	Enter actual number	Enter actual number	A1 x 0.08	B1 x 0.12	A1 x 0.09	B1 x 0.21
2 25-34	Enter actual number	Enter actual number	A2 x 0.19	B2 x 0.19	A2 x 0.20	B2 x 0.30
3 35-44	Enter actual number	Enter actual number	A3 x 0.27	B3 x 0.25	A3 x 0.30	B3 x 0.37
4 45-54	Enter actual number	Enter actual number	A4 x 0.28	B4 x 0.28	A4 x 0.38	B4 x 0.42
5 55-64	Enter actual number	Enter actual number	A5 x 0.29	B5 x 0.28	A5 x 0.41	B5 x 0.51
6 65-74	Enter actual number	Enter actual number	A6 x 0.28	B6 x 0.34	A6 x 0.49	B6 x 0.61
7 75 +	Enter actual number	Enter actual number	A7 x 0.17	B7 x 0.26	A7 x 0.46	B7 x 0.56
8 Sub-total	Sum of A1-A7	Sum of B1-B7	Sum of C1-C7	Sum of D1-D7	Sum of E1-E7	Sum of F1-F7
9 Total	Sum of A8 and B8		Sum of C8 and D8		Sum of E8 and F8	

Source: The formulae for obesity are based on the Health Survey for England 2005. ² The formulae for waist circumference are based on the Health Survey for England 2003. ¹

Example – Southwark Primary Care Trust: Adults aged 16 and over

The following is an example of how to use the ready-reckoner, based on 2001 census figures for Southwark Primary Care Trust, London.

	A B		C D		E F	
	Southwark PCT population (2001)		Estimate of number of people who are obese (BMI greater than 30kg/m ²)		Estimate of number of people who have a raised waist circumference (Male 102cm or above. Female 88cm or above)	
Age	Male	Female	Male	Female	Male	Female
1 16-24	17,812	18,011	1,425	2,161	1,603	3,782
2 25-34	25,894	26,865	4,920	5,104	5,179	8,060
3 35-44	21,501	20,998	5,805	5,250	6,450	7,769
4 45-54	11,960	12,478	3,349	3,494	4,545	5,241
5 55-64	8,137	8,831	2,360	2,473	3,336	4,504
6 65-74	6,421	7,213	1,798	2,452	3,146	4,400
7 75 +	4,286	7,434	729	1,933	1,972	4,163
8 Sub-total	96,011	101,830	20,386	22,867	26,231	37,919
9 Total	197,841		43,253		64,150	

Thus, the total estimated number of adults (aged 16 years and above) who are obese in Southwark PCT is 43,253, and the total number who have a greater health risk due to a raised waist circumference is 64,150.

OBSESITY PREVALENCE READY-RECKONER: Children aged 4 – 10 years

	A	B	C	D	E	F
	PCT population (Enter actual numbers)		Estimate of number of children who are obese (International Classification)		Estimate of number of children who are obese (UK National BMI Percentile Classification)	
Age	Boys	Girls	Boys	Girls	Boys	Girls
1 4	Enter actual number	Enter actual number	A1 x 0.046	B1 x 0.073	A1 x 0.138	B1 x 0.118
2 5	Enter actual number	Enter actual number	A2 x 0.049	B2 x 0.072	A2 x 0.139	B2 x 0.104
3 6	Enter actual number	Enter actual number	A3 x 0.043	B3 x 0.076	A3 x 0.120	B3 x 0.131
4 7	Enter actual number	Enter actual number	A4 x 0.044	B4 x 0.073	A4 x 0.111	B4 x 0.147
5 8	Enter actual number	Enter actual number	A5 x 0.056	B5 x 0.079	A5 x 0.177	B5 x 0.165
6 9	Enter actual number	Enter actual number	A6 x 0.059	B6 x 0.108	A6 x 0.177	B6 x 0.219
7 10	Enter actual number	Enter actual number	A7 x 0.064	B7 x 0.066	A7 x 0.179	B7 x 0.184
8 Sub-total	Sum of A1-A7	Sum of B1-B7	Sum of C1-C7	Sum of D1-D7	Sum of E1-E7	Sum of F1-F7
9 Total	Sum of A8 and B8		Sum of C8 and D8		Sum of E8 and F8	

Source: The formulae are based on the Health Survey for England 2002: The health of children and young people. ³

Estimating the prevalence of obesity and central obesity among adults in ethnic groups

To model for ethnicity, using the results from the ready-reckoner as a base, apply the ethnicity breakdown for each age/gender group, and for each cell apply the following adjustment factors (derived from Table 3 on page 17) to calculate the prevalence of obesity and central obesity by age/gender/ethnicity. The resulting prevalence estimates can be summed whichever way you choose. These adjustment factors represent the national prevalence of obesity and central obesity in adults (aged 16 and over) by ethnic group compared to the general population (= 1.0).

Adjustment factors

Ethnic group	Obesity		Central obesity	
	Men	Women	Men	Women
Black Caribbean	1.11	1.38	0.71	1.15
Black African	0.75	1.66	0.61	1.29
Indian	0.61	0.87	0.65	0.93
Pakistani	0.67	1.21	0.97	1.17
Bangladeshi	0.26	0.74	0.39	1.05
Chinese	0.26	0.33	0.26	0.39

Estimating the prevalence of overweight among adults

A modified version of the ready-reckoner can be used to estimate the number of overweight people – those with a BMI more than 25.0kg/m² – using the data on prevalence of overweight in different age groups from the Health Survey for England 2005. To estimate the prevalence of overweight for ethnic groups, follow the same procedure as described above. Use Table 3 on page 17 to calculate the adjustment factors.

References

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Measurement and assessment of overweight and obesity – ADULTS

Tool 3

Measuring overweight and obesity using Body Mass Index (BMI)

Adults

Overweight and obesity can be measured by recording the Body Mass Index (BMI) which is calculated by dividing an individual's weight in kilograms by the square of their height in metres (kg/m²).

For example, an individual weighs 95kg and is 180 cm tall. To calculate their BMI:

$$\text{BMI} = \frac{95}{(1.80 \times 1.80)} = \frac{95}{3.24} = 29.32\text{kg/m}^2$$

Thus their BMI would be approximately 29kg/m².

There is little disagreement about the classification of 'overweight' and 'obese' using BMI in adults. A BMI between 18.5kg/m² and under 25kg/m² is accepted to be within normal ranges, whereas a BMI of between 25kg/m² and 30kg/m² is classified as overweight and a BMI of 30kg/m² and over as obesity. Further classifications linked with morbidity are shown below. These cut-off points are based on epidemiological evidence of the link between mortality and BMI in adults.¹

Classification of overweight and obesity among adults

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

Note: Co-morbidities are the health risks associated with obesity, ie type 2 diabetes, hypertension (high blood pressure), stroke, coronary heart disease, cancer, osteoarthritis and dyslipidaemia (imbalance of fatty substances in the blood).

Source: National Institute for Health and Clinical Excellence, 2006,² adapted from World Health Organization, 2000¹

Adults of Asian origin

Asian populations have a higher proportion of body fat in comparison to people of the same age, gender and BMI in the general UK population. Thus, the proportion of Asian people with a high risk of type 2 diabetes and cardiovascular disease is substantial even at BMIs lower than the existing WHO cut-off point for overweight. However, levels of morbidity vary between different Asian populations and for this reason it is difficult to identify one clear BMI cut-off point.³ * Thus, NICE recommends that the current universal cut-off points for the general adult population (see table above) be retained for all population groups.² This is in agreement with the WHO expert

* A proposed classification of overweight and obesity for Asian adult populations has been developed by the World Health Organization.⁴ The proposed cut-offs are 18.5–22.9kg/m² (healthy weight), 23kg/m² or more (overweight), 23–24.9kg/m² (at risk), 25–29.9kg/m² (obesity I), 30kg/m² or more (obesity II).

consultation group which also recommends trigger points for public health action for adults of Asian origin – 23kg/m² for increased risk and 27.5kg/m² for high risk.³ NICE has recommended that healthcare professionals should use clinical judgement when considering risk factors in Asian population groups, even in people not classified as overweight or obese using the current BMI classification.²

Using the BMI measurement in isolation

Although BMI is an acceptable approximation of total body fat at the population level and can be used to estimate the relative risk of disease in most people, it is not always an accurate predictor of body fat or fat distribution, particularly in muscular individuals, because of differences in body-fat proportions and distribution. Some other population groups, such as Asians and older people, have co-morbidity risk factors that would be of concern at different BMIs (lower for Asian adults as detailed above and higher for older people). Therefore, NICE recommends that waist circumference should be used *in addition* to BMI to measure central obesity and disease risk in individuals with a BMI less than 35kg/m².^(2, 5) (See ‘Measuring BMI and waist circumference in adults to assess health risks’ on the next page.)

Measuring waist circumference in adults

Waist circumference has been shown to be positively, although not perfectly, correlated to disease risk, and is the most practical measurement for assessing central obesity.⁶ It can be used as a valuable measure in adults with a BMI of less than 35kg/m².⁽²⁾ However, where BMI is greater than 35kg/m², waist circumference adds little to the absolute measure of risk provided by BMI.⁵ This is because patients who have a BMI of 35kg/m² will exceed the cut-off points (detailed below) used to identify people at risk of the metabolic syndrome.⁶

Waist circumference thresholds used to assess health risks in the general adult population

At increased risk	Male	Female
Increased risk	94cm (37 inches) or more	80cm (31 inches) or more
Greatly increased risk	102cm (40 inches) or more	88cm (35 inches) or more

Source: National Institute for Health and Clinical Excellence, 2006,² International Diabetes Federation (2005),⁷ WHO/IASO/IOTF (2000),⁴ World Health Organization (2000)¹

Adults of Asian origin

Adults of Asian origin have higher cardiovascular risk factors at lower BMIs and waist circumferences than Western populations.⁸ However, different Asian populations differ in the level of risk associated with a particular waist circumference. For example, a study evaluating the average waist circumference of more than 30,000 individuals from East Asia (China, Hong Kong, Korea, and Taiwan), South Asia (India and Pakistan) and South-east Asia (Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam) found that there were major differences between regions. Thus, the researchers concluded that the impact of obesity may begin at different thresholds in different Asian populations and that a unique threshold for all Asian populations would therefore appear to be inappropriate.⁹ *

Note: The National Institute for Health and Clinical Excellence (NICE) does not recommend different waist circumference cut-offs for Asian populations in the UK.²

* The International Diabetes Federation (IDF) and the World Health Organization have proposed separate waist circumference thresholds for adults of Asian origin of 90cm (35 inches) or more for men, and 80cm (31 inches) or more for women. Note that the IDF definition is for South Asians and Chinese populations only. ^{1, 4, 7}

Waist circumference should never be used in isolation, as a proportion of subjects who require weight management may not be identified.⁵ Thus NICE recommends the use of the table below to assess the level of weight management required.²

NICE states that: "The level of intervention should be higher for patients with comorbidities, regardless of their waist circumference."²

Assessing the level of weight management: a guide

BMI classification	Waist circumference			Co-morbidities present
	Low	High	Very high	
Overweight				
Obesity I				
Obesity II				
Obesity III				

	General advice on healthy weight and lifestyle
	Diet and physical activity
	Diet and physical activity; consider drugs
	Diet and physical activity; consider drugs; consider surgery

Source: National Institute for Health and Clinical Excellence, 2006²

Measuring BMI and waist circumference in adults to assess health risks

The World Health Organization (WHO) has recommended that an individual's relative health risk could be more accurately classified using both BMI and waist circumference.¹ This is shown below for the general adult population.

Combining BMI and waist measurement to assess obesity and the risk of type 2 diabetes and cardiovascular disease – general adult population^{1, 2, 5}

Classification	BMI (kg/m ²)	Waist circumference and risk of co-morbidities	
		Men: 94-102 cm	Men: More than 102 cm
		Women: 80-88 cm	Women: More than 88 cm
Underweight	Less than 18.5	-	-
Healthy weight	18.5 - 24.9	-	Increased
Overweight	25 - 29.9	Increased	High
Obesity	30 or more	High	Very high

Source: National Institute for Health and Clinical Excellence, 2006²

Measuring waist-hip ratio in adults

Another measurement of the deposition of abdominal fat is the waist-hip ratio (WHR). This can be defined as waist circumference divided by hip circumference, ie waist girth (m)/hip girth (m). Although there is no consensus about appropriate waist-hip ratio criterion levels, a raised waist-hip ratio has been taken to be 1.0 or more in men, and 0.85 or more in women.^{2, 4}

Assessment

Management should begin with the assessment of overweight and obesity in the patient. BMI should be used to classify the degree of obesity, and waist circumference may be used in people with a BMI less than 35kg/m² to determine the presence of central obesity. NICE recommends that

the assessment of health risks associated with overweight and obesity in adults should be based on BMI and waist circumference as shown below.²

Assessing risks from overweight and obesity

BMI classification	Waist circumference		
	Low	High	Very high
Overweight	No increased risk	Increased risk	High risk
Obesity I	Increased risk	High risk	Very high risk
For men, waist circumference of less than 94cm is low, 94-102cm is high and more than 102cm is very high. For women, waist circumference of less than 80cm is low, 80-88cm is high and more than 88cm is very high.			

Source: National Institute for Health and Clinical Excellence, 2006 ²

Assessments also need to include holistic aspects focusing on psychological, social and environmental issues. There is a need for training for professionals who carry out assessments due to the sensitive and multifaceted nature of overweight and obesity. Professionals need to be aware of patients' motivations and expectations. Effective assessment and intervention require support, understanding and a non-judgemental approach.

Assessing and classifying overweight and obesity in adults

NICE recommends the following approach to assessing and classifying overweight and obesity in adults.

Determine degree of overweight or obesity

- Use clinical judgement to decide when to measure weight and height
- Use BMI to classify degree of obesity...but use clinical judgement:
 - BMI may be less accurate in highly muscular people
 - for Asian adults, risk factors may be of concern at lower BMI
 - for older people, risk factors may become important at higher BMIs
- Use waist circumference in people with a BMI less than 35 kg/m² to assess health risks
- Bioimpedance is not recommended as a substitute for BMI
- Tell the person their classification, and how this affects their risk of long-term health problems.

Assess lifestyle, comorbidities and willingness to change, including:

- presenting symptoms and underlying causes of overweight or obesity
- eating behaviour
- comorbidities (such as type 2 diabetes, hypertension, cardiovascular disease, osteoarthritis, dyslipidaemia and sleep apnoea) and risk factors, using the following tests – lipid profile and blood glucose (both preferably fasting) and blood pressure measurement
- lifestyle – diet and physical activity
- psychosocial distress and lifestyle, environmental, social and family factors – including family history of overweight and obesity and comorbidities
- willingness and motivation to change
- potential of weight loss to improve health
- psychological problems
- medical problems and medication.

Source: Reproduced from National Institute for Health and Clinical Excellence, 2006 ²



Tool 17 *Dealing with overweight and obesity – Guidance for health professionals* provides further information on NICE guidance for assessing and managing overweight and obesity in a clinical setting.

Note: The NHS Local Delivery Plan monitoring line on adult obesity status requires general practices to monitor and return data on the obesity status (BMI) of GP-registered adults within the past 15 months.

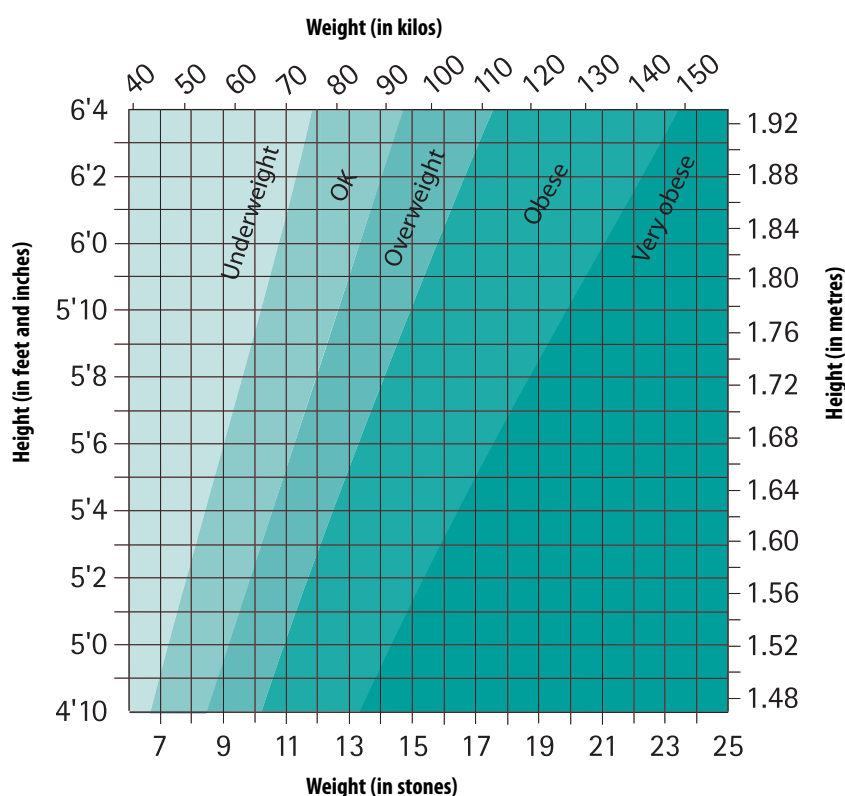
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- 9 Bassand JP (2006) Results from a region-by-region analysis of the IDEA study highlight the differences in anthropometric characteristics between Asian and European populations. European Society of Cardiology, www.escardio.org

Height and weight chart – ADULTS

Tool 4

Take a straight line across from the person's height (without shoes), and a line up or down from their weight (without clothes). Put a mark where the two lines meet to find out if the person needs to lose weight.



Underweight (BMI less than 18.5kg/m²)

A more calorie-dense diet may be needed to maintain current activity levels. In cases of very low weight for height, medical advice should be considered.

OK (BMI 18.5 – 24.9kg/m²)

This is the optimal, desirable or 'normal' range. Calorie intake is appropriate for current activity levels.

Overweight (BMI 25 – 29.9kg/m²)

Some loss of weight might be beneficial to health.

Obese (BMI 30 – 39.9kg/m²)

There is an increased risk of ill health and a need to lose weight. Regular health checks are required.

Very obese (BMI 40kg/m² or above)

This is severe or 'morbid' obesity. There is a greatly increased risk of developing complications of obesity and an urgent need to lose weight. Specialist advice should be sought.

D

Resources

Measurement and assessment of overweight and obesity – CHILDREN

Tool 5

Measuring overweight and obesity using Body Mass Index (BMI)

BMI is calculated by dividing an individual's weight in kilograms by the square of their height in metres (kg/m^2).

There is widespread international support for the use of BMI to define obesity in children^{1, 2, 3} even though there is no universally accepted BMI-based classification system for childhood obesity. This is because for children and young people, BMI is not a static measurement, but varies from birth to adulthood, and is different between boys and girls. Interpretation of BMI values in children and young people therefore depends on comparisons with population reference data, using cut-off points in the BMI distribution (BMI percentiles).¹

Different growth reference charts can be used to assess the degree of overweight or obesity of a child. These are calculated to allow for age, sex and height. **The National Institute for Health and Clinical Excellence (NICE) has recommended that the BMI measurement in children and young people should be related to the UK 1990 BMI growth reference charts⁴ to give age- and gender-specific information.**⁵ The Growth Reference Review Group, a working group convened by the Royal College of Paediatrics and Child Health (RCPCH), has also recommended that for children under the age of 2 years, the UK 1990 reference charts⁴ are the only suitable charts for weight, length and head circumference. It also recommended that the UK 1990 BMI reference is the only suitable reference for assessing weight relative to height.⁶ However, the Australian NHMRC guidelines for children highlighted several difficulties with the BMI-for-age percentile cut-offs:

- Data are derived from a reference population.
- Classifying a child as overweight or obese on the basis of BMI being above a certain percentile is an arbitrary decision and is not based on known medical or health risk.⁷

These difficulties have resulted in different BMI centiles being used. For example, the NHMRC guidelines have recommended that a BMI above the 95th percentile is indicative of obesity and a BMI above the 85th percentile is indicative of overweight.⁷ However, the SIGN guidelines have recommended that a BMI at the 98th percentile or over is indicative of obesity (on the UK 1990 reference charts for BMI centiles for children⁴), and a BMI at the 91st percentile is indicative of overweight.¹ The Department of Health has also recommended that the 98th and 91st centiles of the UK 1990 reference chart for age and sex be used to define obesity and overweight, respectively.³ This is because when using the BMI of more than the 91st centile on the UK 1990 charts, sensitivity is moderately high (it diagnoses few obese children as lean) and specificity is high (it diagnoses few lean children as obese) which is paramount for routine clinical use.^{1, 8}

NICE recommendation for specific cut-offs for overweight and obesity

NICE considered that there was a lack of evidence to support specific cut-offs in children. However, the recommended pragmatic indicators for action are the 91st and 98th centiles (overweight and obese, respectively).⁵



See **Tool 6** for centile BMI charts for children.

D

Resources

Use of growth reference charts in clinical settings

The growth reference or BMI charts are used in two broad clinical settings: for the assessment and monitoring of individual children, and for screening whole populations.⁶

Assessing and monitoring individual children

- *BMI reference curves for the UK, 1990*⁴ – NICE recommends that the 91st centile (overweight) and the 98th centile (obese) of the 1990 UK reference chart be used for assessing and monitoring individual children.⁵ The Department of Health and SIGN make the same recommendation.^{1, 3}

Screening whole populations

- *UK National BMI Percentile Classification*⁴ – The majority of published epidemiological work has used a definition of obesity as a BMI of more than the 95th centile and overweight as a BMI of more than the 85th centile of the UK 1990 reference chart for age and sex.¹ SIGN has recommended that, for comparative epidemiological purposes, it is important to retain this definition. Furthermore, the obesity PSA target defines childhood overweight and obesity using this classification.
- *International Classification* – An alternative method for measuring childhood obesity is the International Obesity Task Force (IOTF) international classification⁹ using data collected from six countries (UK, Brazil, Hong Kong, the Netherlands, Singapore and the United States) of a total of 190,000 subjects aged from 0 to 25 years. This classification links childhood and adult obesity/overweight standards using evidence of clear associations between the adult BMI cut-off values of 25kg/m² and 30kg/m² and health risk. However, it has been reported that the international cut-offs exaggerate the differences in overweight and obesity prevalence between boys and girls by underestimating prevalence in boys. Other possible limitations include concerns about sensitivity (the ability to identify all obese children as obese), the limited sample size of the reference population and the lack of BMI cut-off points for underweight.¹⁰

Measuring waist circumference

Until recently, waist circumference in children had not been regarded as being an important measure of fatness. Although the health risks associated with an excessive abdominal fat distribution in children in comparison with adults remain unclear, mounting evidence suggests that this is an important measurement. For example, data from the Bogalusa Heart Study showed that an abdominal fat distribution (indicated by waist circumference) in children aged between 5 and 17 years was associated with adverse concentrations of triglyceride, LDL cholesterol, HDL cholesterol and insulin.¹¹ The first set of working waist circumference percentiles was produced using data collected from British children.¹² Although there is no consensus about how to define obesity among children using waist measurement, for clinical use the 99.6th or 98th centiles are the suggested cut-offs for obesity and the 91st centile is the cut-off for overweight.¹²

Note: Neither the National Institute for Health and Clinical Excellence (NICE)⁵ nor the Department of Health³ recommend the routine measurement of waist circumference for children, and the Department of Health's guidance to PCTs on how to measure childhood obesity does not include the measurement of waist circumference.¹³ NICE suggests that waist circumference measurements may be used to give additional information, as appropriate.

Assessment

NICE recommends that assessment should begin by measuring BMI and relating it to the UK 1990 BMI charts to give age- and gender-specific information.⁵

It recommends the approach to assessing and classifying overweight and obesity in children shown in the box below.

Assessment and classification of overweight and obesity in children

Determine degree of overweight or obesity

- Use clinical judgement to decide when to measure weight and height.
- Use BMI; relate to UK 1990 BMI charts to give age- and gender-specific information.
- Do not use waist circumference routinely; however, it can give information on risk of long-term health problems.
- Discuss with the child and family.

Consider intervention or assessment

- Consider tailored clinical intervention if BMI at 91st centile or above.
- Consider assessing for comorbidities if BMI at 98th centile or above.

Assess lifestyle, comorbidities and willingness to change, including:

- presenting symptoms and underlying causes of overweight or obesity
- willingness and motivation to change
- comorbidities (such as hypertension, hyperinsulinaemia, dyslipidaemia, type 2 diabetes, psychosocial dysfunction and exacerbation of asthma) and risk factors
- psychosocial distress such as low self-esteem, teasing and bullying
- family history of overweight and obesity and comorbidities
- lifestyle – diet and physical activity
- environmental, social and family factors that may contribute to overweight and obesity and the success of treatment
- growth and pubertal status.

Source: Reproduced from National Institute for Health and Clinical Excellence, 2006⁵

The Department of Health³, the Royal College of Paediatrics and Child Health (RCPCH) and the National Obesity Forum (NOF)¹⁴ provide similar recommendations for assessing childhood overweight and obesity.



Tool 17 *Dealing with overweight and obesity – Guidance for health professionals* provides further information on NICE guidance for assessing and managing overweight and obesity in a clinical setting.

Recording of children's data

The Department of Health has developed guidance for PCTs on how to measure the height and weight of children aged between 4 and 11 years. All children in the Reception Year (ages 4-5 years) and Year 6 (ages 10-11 years) should be measured on an annual basis.¹³ The guidance is available at www.dh.gov.uk/obesity.

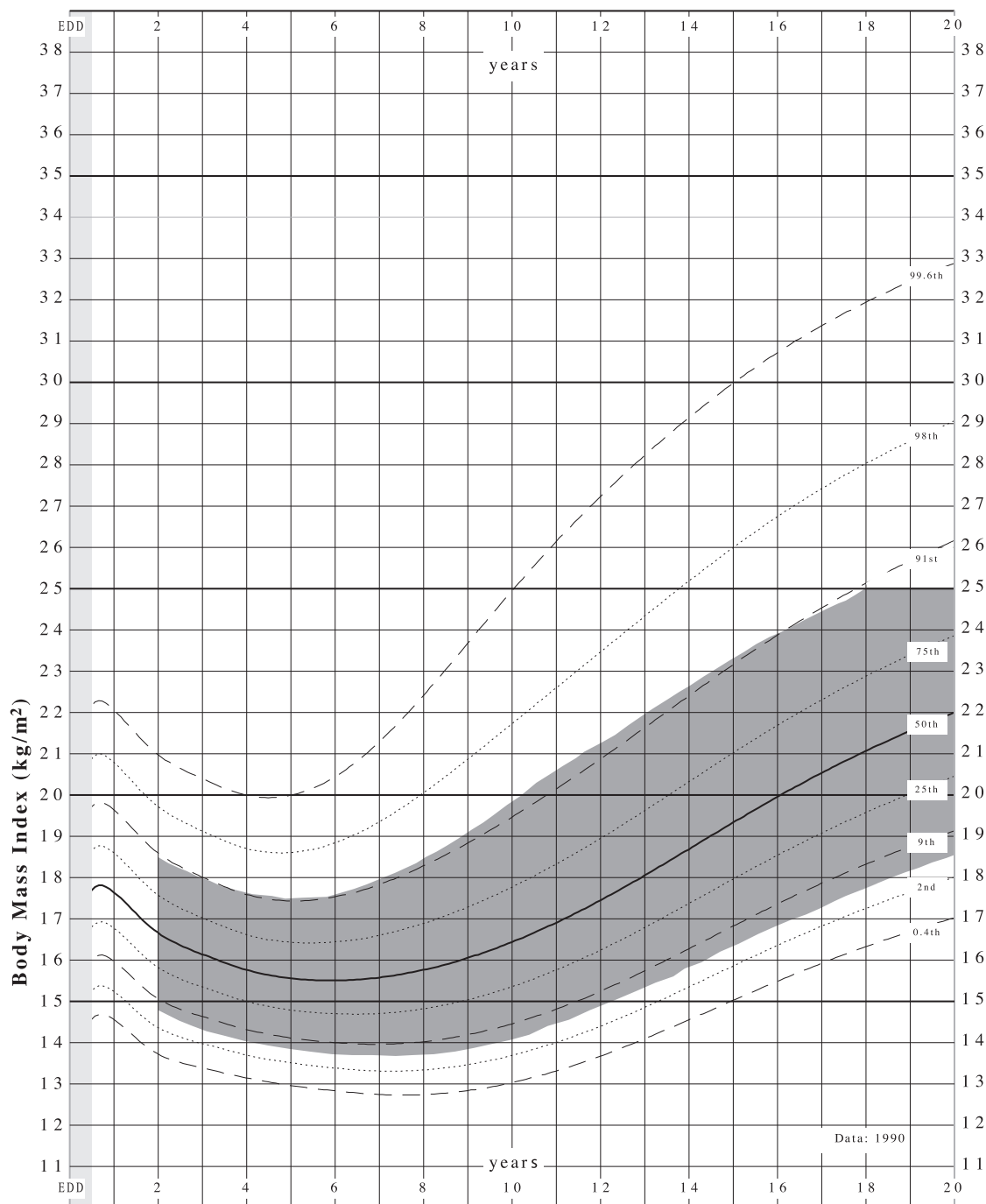
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References

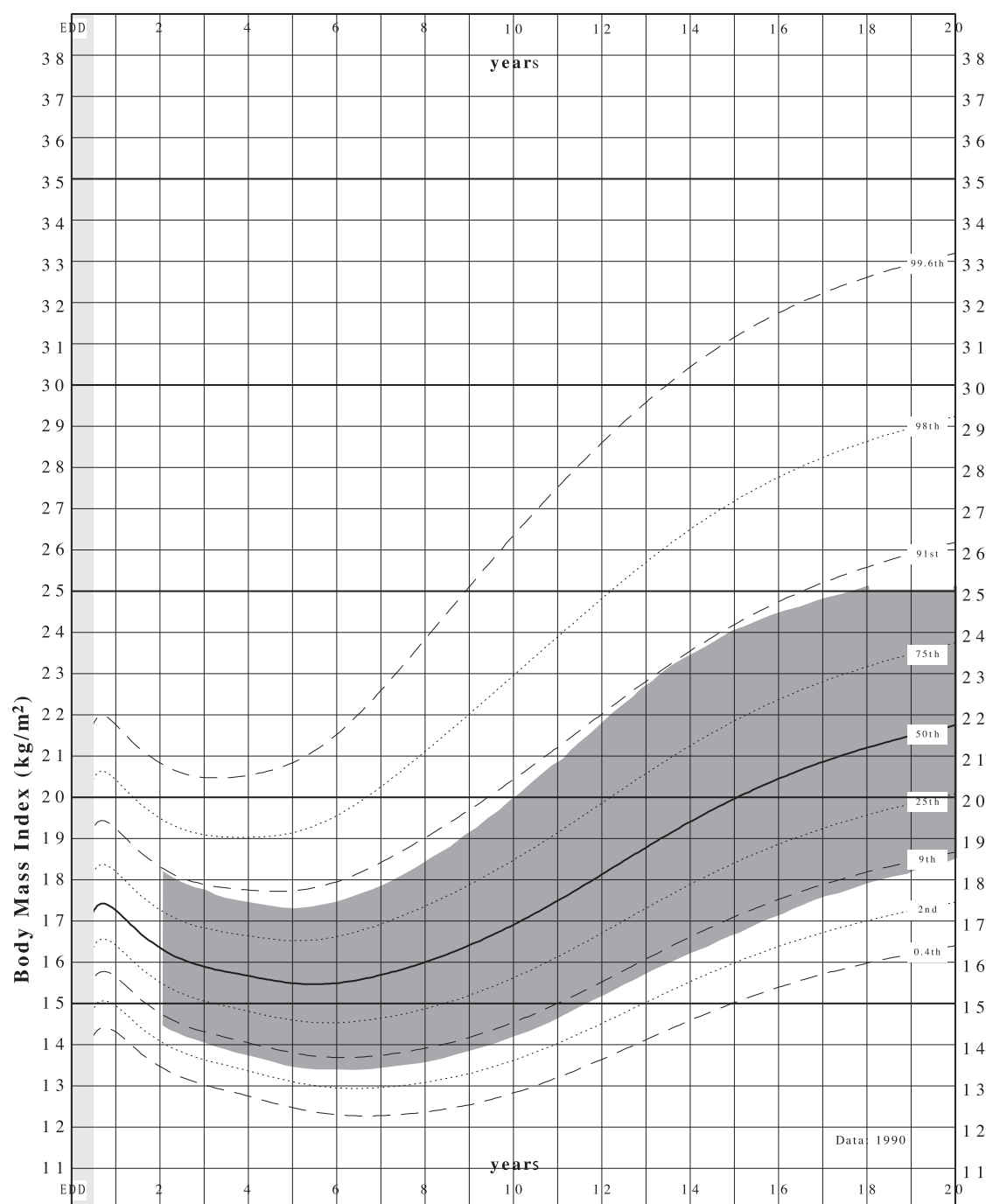
- 1 Scottish Intercollegiate Guidelines Network (2003) *Management of obesity in children and young people. A National Clinical Guideline*. Edinburgh: SIGN
- 2 Jotangia D, Moody A, Stamatakis E, Wardle H (2005) *Obesity among children under 11*. London: National Centre for Social Research, Department of Epidemiology and Public Health at the Royal Free and University College Medical School
- 3 Department of Health (2006) *Care pathway for the management of overweight and obesity*. London: Department of Health
- 4 Cole TJ, Freeman JV, Preece MA (1995) Body mass index reference curves for the UK, 1990. *Archives of Disease in Childhood*; 73: 25-29
- 5 National Institute for Health and Clinical Excellence (NICE) (2006) *Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children*. London: NICE. www.nice.org.uk/guidance/CG43
- 6 Wright CM, Booth IW, Buckler JM, Cameron N, et al (2002) Growth reference charts for use in the United Kingdom. *Archives of Disease in Childhood*; 86: 11-14
- 7 National Health and Medical Research Council (2003) *Clinical practice guidelines for the management of overweight and obesity in children and adolescents*. Canberra, ACT: NHMRC
- 8 Reilly JJ, Wilson ML, Summerbell CD, Wilson DC (2002) Obesity: diagnosis, prevention, and treatment. Evidence based answers to common questions. *Archives of Disease in Childhood*; 86: 392-94
- 9 Cole TJ, Bellizzi MC, Flegal KM, Dietz WH (2000) Establishing a standard definition for child overweight and obesity worldwide: international survey. *British Medical Journal*; 320: 1240
- 10 Stamatakis E (2003) Anthropometric measurements, overweight, and obesity. In: Sproston K, Primatesta P (eds.) *Health Survey for England. Volume 1. The health of children and young people*. London: TSO
- 11 Freedman DS, Serdula MK, Srinivasan SR, Berenson GS (1999) Relation of circumferences and skinfold thickness to lipid and insulin concentrations in children and adolescents: The Bogalusa Heart Study. *American Journal of Clinical Nutrition*; 69: 308-17
- 12 McCarthy HD, Jarrett KV, Crawley HF (2001) The development of waist circumference percentiles in British children aged 5.0 - 6.9y. *European Journal of Clinical Nutrition*; 55: 902-07
- 13 Department of Health (2006) *Measuring childhood obesity. Guidance to primary care trusts*. London: Department of Health
- 14 Royal College of Paediatrics and Child Health and National Obesity Forum (2002) *An approach to weight management in children and adolescents (2-18 years) in primary care*. London: Royal College of Paediatrics and Child Health

Boys BMI chart – Identification



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Girls BMI chart – Identification



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 2 Mayfield Avenue, London W4 1PW

References

- Cole TJ, Bellizzi MC, Flegal KM, Dietz WH (2000) Establishing a standard definition for child overweight and obesity worldwide: international survey. *British Medical Journal*; 320: 1240-03
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Local planning proforma

Tool 7

Local plans for obesity will need to show a strong focus on designing and developing services for:

- Dietary improvement, eg Food in Schools programme, 5 A DAY
- Increasing physical activity, eg National Healthy Schools Programme, pedometers, exercise on referral
- Provision of services around obesity care pathways for adults and children
- Increasing the health improvement workforce, eg school nurses, health trainers.

For each of these areas, consider the following questions:

- 1 How have you identified local needs for services to address obesity in your area for the next three years (eg local health needs assessment) and service models to improve outcomes?**
- 2 Have the needs of children and adults been clearly identified and addressed?**
- 3 How is the explicit contribution of the NHS towards wider determinants of lifestyle affecting the level of obesity in the population addressed?**
- 4 How will local targets in your area meet the gaps identified in your needs assessment and how will they reduce inequalities, especially in Spearhead PCTs?**
- 5 How will they address the needs of high-risk individuals and populations and those with co-morbidities such as diabetes or coronary heart disease?**
- 6 Are there clear and explicit measures to assess and monitor progress, with clear, realistic timescales?**
- 7 Will health equity audit be used?**

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Resources

National Heart Forum e-News Briefing Service

Tool 8

Delivering breaking news on the prevention agenda

About the service

The *National Heart Forum e-News Briefing Service* was launched in 2002. Since then it has grown to provide subscribers with electronic information on the latest developments and reports relevant to the prevention of avoidable coronary heart disease and related conditions in the UK.

The *e-News Briefing Service* covers a broad range of topics including nutrition, physical activity, obesity, tobacco control, child poverty and health inequalities. It contains details of current media reports, public consultations, policy developments, new resources and forthcoming events.

It is an essential information source for all policy makers, strategic health authorities, public health and primary care professionals and others with an interest in preventing coronary heart disease and related conditions.

To subscribe

The *e-News Briefing Service* is available FREE by e-mail either three times a week (Monday, Wednesday and Friday) or once a week (Wednesday only).

To subscribe, simply email **subscribe@heartforum.org.uk** requesting either "e-News Briefing Service – weekly" or "e-News Briefing Service – 3 x a week" in the subject heading.

Visit the National Heart Forum website to view a sample of the e-News Briefing at **www.heartforum.org.uk/nhfwhatwedo.html**

Promotion opportunity

The National Heart Forum encourages you to take advantage of this free resource to promote your organisation's activities by forwarding any press releases, new resource information or forthcoming events to **briefings@heartforum.org.uk**



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Resources

Partnership working – A settings approach

Tool 9

Potential partners	Potential role of partners	Potential benefits for partners
HOME (under-5s)		
Parents and children, midwives, health visitors, social workers, Sure Start children's centres, GPs, community dietitians, community pharmacists, dentists, playgroup leaders, voluntary and community groups, food retailers, health promotion and public health specialists, play leaders, leisure services, healthy living centres, town planners, health commissioners	- Promoting breastfeeding and healthy nutrition for young children - Providing access to fresh and affordable healthy food choices such as fruit and vegetables - Promoting safe, active play	- Providing safe places to play - Individual health improvement and wellbeing - Implementation of the 'Be healthy' strand of <i>Every child matters</i>¹ - Achievement of breastfeeding target - Achievement of under-11 obesity target
SCHOOL		
Pupils and students, parents, school nurses, teachers, head teachers, school governors, school travel advisers, local education authority, Healthy Schools Partnership, local communities, road safety officers, community dietitians, leisure services, local sports clubs, health promotion and public health specialists, health commissioners	- Creating a whole-school health-promoting environment – both curricular and non-curricular - Providing healthy choices in school meals and snacks (including vending machines) - Developing food choice skills and cooking skills - Creating opportunities for sports and physical activities - Encouraging active travel to and from school - Developing family and community involvement - Advising on children's personal health guides	- Individual health improvement and wellbeing - Achievement of National Healthy School Standard - Achievement of Food in Schools targets - Satisfying OFSTED requirements - Achievement of under-11 obesity target
WORKPLACE (including colleges)		
Employees and their families, managers, human resources staff, occupational health professionals, facilities managers, leisure services, catering providers, trade unions, health promotion and public health specialists, health commissioners	- Providing healthy choices in catering - Providing opportunities and facilities for sports and games - Encouraging active team pursuits - Encouraging active transport - Developing family and community involvement in initiatives – eg work sports days, or cycle challenges - Promoting and supporting employee health checks	- Individual health improvement and wellbeing - Achievement of life expectancy target - Less sickness absence - Improved staff relations - Better staff retention - Enhanced corporate image

Potential partners	Potential role of partners	Potential benefits for partners
COMMUNITY		
Community group members and leaders, faith groups, voluntary organisations, outreach workers, project workers, primary care staff, health trainers, planning and regeneration officers, community safety officers, road safety officers, neighbourhood renewal workers, local businesses, supermarkets, leisure providers, local sports clubs, commercial slimming organisations, health clubs, local media, healthy living centres, health promotion and public health specialists, health commissioners	• Engaging local people in healthy lifestyle initiatives • Encouraging local advocacy for culturally appropriate, health-promoting environments and facilities • Developing awareness of overweight and obesity and its prevention and management among vulnerable, at-risk communities • Fostering a culture of prevention and adherence to health checks • Making changes to the built environment and improving safety and security in order to increase opportunities for physical activity	• Individual health improvement and wellbeing • Achievement of life expectancy target • Increased social cohesion • Improved quality of the local environment • Greater choice of healthy eating options • Improved local leisure and sports facilities • Improved community safety and road safety • Greater use of parks and open spaces • More walking and cycling, and less use of cars • More stair-climbing, and less use of lifts
PRIMARY CARE		
Patients and carers, practice staff, community pharmacists, community dietitians, health trainers, exercise facilitators, fitness coaches, leisure providers, commercial slimming organisations, patient groups, health clubs, secondary care providers, health promotion and public health specialists, health commissioners	• Contributing to the primary prevention of hypertension, type 2 diabetes, coronary heart disease and stroke, etc by providing appropriate lifestyles advice and motivation • Fostering a culture of prevention and adherence to health checks • Setting up an overweight and obesity case-finding management programme • Referring suitable patients for specialist dietetic advice or an exercise programme • Setting up a weight control programme for the most at-risk patients	• Individual health improvement and wellbeing • Achievement of life expectancy target • Links with chronic disease management • Reduced demand for hospital treatment • Achievement of National Service Framework targets • Achievement of Quality and Outcomes Framework (QOF) targets

Potential partners	Potential role of partners	Potential benefits for partners
MEDIA AND MARKETING		
General public, local media, health commissioners, leisure providers, marketing and advertising agencies, supermarkets, local businesses	• Media campaigns – eg articles, features and interviews in local newspapers and on radio and TV programmes • Marketing – eg promotion of local health days and other events • Advertising using a combination of various media including broadcast television, cable networks, DVDs, video games, computers, internet and mobile phones • Agreements preventing children from exposure to unnecessary marketing of high-fat, high-sugar foods and drinks • Agreements with local leisure outlets such as cinemas and promotional events to provide healthy food options for visitors	• Individual health improvement and wellbeing • Achievement of life expectancy target • Increased involvement in community activities and events • Increased participation in sports and active pastimes • Increased sales of healthy food choices • Higher public profile of health initiatives • Improved corporate image

Reference

- 1 Department for Education and Skills (2003) *Every child matters*. London: TSO.
www.everychildmatters.gov.uk/_files/EBE7EEAC90382663E0D5BBF24C99A7AC.pdf

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Resources

Checklist to review current activity

Tool 10

Carrying out an audit of local services and initiatives to identify priorities and target groups (and gaps in provision) is particularly helpful when resources and budgets are limited.

The audit checklist below can be used to help map current services and initiatives, grouped under various settings. Identifying any gaps will help inform the development of a local overweight and obesity strategy.

For each service or initiative listed below, assess:

- How well does it meet needs? Measure using a ranking scale of 1, 2 or 3, with 3 being the highest score.
- Specify which groups are missing out.
- Specify what development or further action is needed.

Add your own local services or initiatives as appropriate.

Service/initiative	How well does it meet needs? (Score 1, 2 or 3. 3 = highest)	Which groups are missing out?	What development or further action is needed?
PREVENTION			
Home (under-5s)			
School			
Workplace			
Community			
Primary care			
MANAGEMENT			
Community			
Primary care			

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Service/initiative	How well does it meet needs? (Score 1, 2 or 3. 3 = highest)	Which groups are missing out?	What development or further action is needed?
Secondary care			
INFRASTRUCTURE			
Training			
IT systems			
Premises			
Workforce planning			
Sustainable funding			
...and so on...			

Prioritisation and planning

Tool 11

This tool provides a shorthand way of ensuring that proposed policies and/or initiatives are subject to systematic scrutiny. It is intended to provide a checklist of issues which can be used to confirm whether planned action is well understood with shared goals. It is also intended to help determine when projects are in a pilot or roll-out phase. The intention is that the tool be used flexibly and can be adapted to suit local planning circumstances.

1 Planning checklist

Subject/priority/proposal _____			
Questions	Evidence		Outputs/outcomes
	Existing	Needed	
Do something	<i>Does evidence exist that shows the need for action?</i>	<i>What further evidence is needed to confirm need?</i>	
What/who is the target?	<i>Is there clear evidence of the rationale for targeting?</i>	<i>What further evidence is needed to confirm targets?</i>	
How/where to intervene?	<i>Is there a clear understanding of the methodology and cause and effect chain?</i>	<i>What further evidence is needed to define the methodology?</i>	
What specifically could be done?	<i>What is the full range of potential action?</i>	<i>Are there gaps in understanding?</i>	
What specifically should be done?	<i>What is it practical to deliver?</i>	<i>Is there a need for feasibility tests?</i>	

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2 Impact screening tool

Subject/priority/proposal _____			
Certainty of efficacy	Potential impact on the population		
	Low	Moderate	High
High There is high degree of certainty of success.	Successful interventions but for relatively small population	Successful interventions but would require roll-out across large population group	Successful interventions that by their nature affect the whole population
Medium There is some evidence of success in right circumstances.	Some evidence of success but only for small population	Some evidence of success but not effective for whole population	Some evidence of success, with the potential to reach the whole population
Low There is limited evidence of success and/or evidence is limited to unique circumstances.	Little evidence of success and for small population	Little evidence of success and not effective for the whole population	Little evidence of success but has focus on whole population

3 Convergence check

Subject/priority/proposal _____		
Agreement on need to implement	Certainty about what works	
	Low	High
High	All signed up but not sure of where to go Planning implication?	All signed up, with clear understanding of action required Planning implication?
Low	Don't agree on need to act and don't know what to do Planning implication?	Clear about what works but little agreement on whether to implement Planning implication?

4 Ranking tool

Subject/priority/proposal _____			
Factor/ determinant	a) Relevance/ impact	b) Changeability	c) Score (a x b)
	1 = Little relevance/impact 2 = Moderate relevance/impact 3 = Major relevance/impact	1 = Little scope for change 2 = Moderate scope for change 3 = Major scope for change	1 = Little basis for action 9 = Greatest case for action
Physical environment			
Economic environment			
Social/cultural environment			
Individual behavioural patterns			

For a more comprehensive approach to project planning in health promotion, readers may wish to review the Preffi system – a planning scheme produced by Molleman *et al* (2003).¹ The Preffi system, which considers the importance of fitting the content of health promotion projects to the contextual conditions, provides a comprehensive approach to planning. Detailed information is available from www.nigz.nl/index_en.cfm?act=esite.tonen&a=6&b=54.

Source: Adapted from G Robertson, Health Scotland.

Reference

- 1 Molleman G, Peters L, Hommels L, Ploeg M (2003) *Health Promotion Effect Management Instrument. Preffi 2.0. Assessment package*. Woerden, The Netherlands: NIGZ Netherlands Institute for Health Promotion and Disease Prevention

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Resources

Standards, targets and milestones

Tool 12

The following are suggested as achievable milestones for a local action plan to tackle overweight and obesity.

Source: Adapted from *Tackling obesity: a toolkit for local partnership action*, by A Maryon-Davis, A Giles and R Rona¹

Note: See also the information on the *NICE guideline on obesity – Audit criteria*, on page 84.

MILESTONE	DEADLINE
PARTNERSHIP	
1 The action team should have:	End of year 1
• The explicit commitment of each partner organisation to develop a shared approach • Identified a named link person for each partner organisation • Conducted a needs assessment (including equity profiles of access to services) • Developed a systematic approach to involving the community • Agreed aims, objectives, targets, and an outline action plan • Agreed each partner's lead responsibilities for each main component of the action plan • Built in a mechanism for reporting progress to the boards of each partner organisation.	
2 Each partner organisation should have:	End of year 2
• A systematic approach to achieving the agreed objectives/changes • An agreed mechanism for assessing the impact of its policies on opportunities for both healthy eating and physical activity.	
3 Each partner organisation should have:	End of year 3
• Recent quantitative data integrated into its information strategy • A systematic process for assessing performance and evaluating progress.	
PRIMARY CARE	
1 General practices should have:	End of year 1
• All medical records and hospital correspondence filed in date order • Easily discernible lists of prescribed medication on all records of patients on long-term therapy • Clinical audit meetings involving the whole team at least once a quarter.	

MILESTONE	DEADLINE
2 Practices should have: - A systematically developed and maintained register of people in the practice with diagnosed coronary heart disease, transient ischaemic attack (TIA), stroke and peripheral vascular disease, and of people whose risk of a cardiovascular event is greater than 3% per year, who are also known to be overweight or obese - An agreed weight management protocol (describing the systematic assessment, goal-setting, lifestyle advice, medication, referral criteria, follow-up arrangements, and auditing) for people in the priority groups who are known to be, or found to be, overweight or obese. Many practices will choose to deliver their structured care through nurse- or dietitian-led clinics.	End of year 2
3 Practices should have: Clinical audit data no more than 12 months old.	End of year 3

SPECIALIST SERVICE

1 The specialist service should have: - An effective means of setting clinical standards for obesity management - A systematic approach to determining whether agreed clinical standards are being met.	End of year 1
2 The specialist service should have: An agreed protocol for the assessment and management of people who have been referred for specialist management of their obesity.	End of year 2
3 The specialist service should have: - Clinical audit data, no more than 12 months old, that describe key items and that demonstrate that there is equitable access to the service - Clinical audit data, no more than 12 months old, that demonstrate that at least 85% of people referred for specialist management of their obesity have maintained some weight loss six months after their initial consultation, and that 30% have maintained a weight loss of at least 10% of their presenting weight.	End of year 3

Reference

- 1 Maryon-Davis A, Giles A, Rona R (2000) *Tackling obesity: a toolkit for local partnership action*. London: Faculty of Public Health

This tool contains a summary of the evidence of effectiveness of interventions to prevent and manage obesity, adapted from the NICE guideline on obesity.¹ It contains information on:

Prevention (page 126)

- Evidence of effectiveness – Determinants of weight gain and weight maintenance among children and adults
- Evidence of effectiveness of prevention interventions targeted at the general population
- Evidence of effectiveness of prevention interventions targeted at children
- Evidence of effectiveness of prevention interventions targeted at adults
- Evidence of effectiveness of prevention interventions targeted at black, minority ethnic groups
- Evidence of effectiveness of prevention interventions targeted at vulnerable groups
- Evidence of effectiveness of prevention interventions targeted at vulnerable life stages

Management of obesity in non-clinical settings (page 134)

- Evidence of effectiveness of interventions in non-clinical settings targeted at children and adults

Management of obesity in clinical settings (page 136)

- Evidence of effectiveness of lifestyle interventions in weight management and other outcomes in children and adolescents
- Evidence of harm in children and adolescents who undergo weight management/maintenance programmes
- Evidence of effectiveness of diet interventions for weight loss in adults
- Evidence of effectiveness of behaviour therapy (with or without diet) interventions for weight loss in adults
- Evidence of effectiveness of physical activity (alone or in combination with diet or behaviour therapy) interventions for weight loss in adults

For additional information, see Mulvihill and Quigley (2003)² and Hillsdon, Foster et al (2005).³

Note: A lack of evidence of effectiveness does not necessarily mean evidence of ineffectiveness – it may simply mean that further evaluation is needed.

KEY TO GRADING EVIDENCE

Level of evidence	Type of evidence
1++	High quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias
1+	Well conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias
1-	Meta-analyses, systematic reviews of RCTs, or RCTs with a high risk of bias*
2++	High quality systematic reviews of non-RCT, case-control, cohort, CBA or ITS studies High quality non-RCT, case-control, cohort, CBA or ITS studies with a very low risk of confounding, bias or chance and a high probability that the relation is causal
2+	Well conducted, non-RCT, case-control, cohort, CBA or ITS studies with a very low risk of confounding, bias or chance and a moderate probability that the relation is causal
2-	Non-RCT, case-control, cohort, CBA or ITS studies with a high risk of confounding, bias or chance and a significant risk that the relationship is not causal
3	Non-analytic studies (eg case reports, case series)
4	Expert opinion, formal consensus
* Studies with a level of evidence (-) should not be used as a basis for making recommendations	
RCT: Randomised controlled trial; CBA: controlled before and after; ITS: Interrupted time series	

Source: National Institute for Health and Clinical Excellence, 2006 ¹

PREVENTION

Evidence of effectiveness – Determinants of weight gain and weight maintenance among children and adults

INTERVENTION	EVIDENCE
Children and young people	
<i>General</i>	There are limited data from cohort studies on the factors associated with weight gain in children (N/A)
<i>Parental obesity</i>	There is a body of evidence which suggests that the offspring of overweight and obese parent(s) are at increased risk of themselves becoming overweight or obese in childhood or adulthood (2+)
<i>Dietary factors</i>	Cohort studies suggest that children who increase calorie intake, increase fat intake, consume 'junk food', 'takeaways' and 'carbonated drinks' and/or do not eat breakfast, tend to gain weight (2+)
	The evidence on 'snacking' is limited and inconsistent (2+)
	There is limited evidence from prospective cohort studies over at least one year for the relationship between regular meals, portion size or snacking with weight in children (2+)
<i>Physical activity</i>	Cohort studies suggest that children who do not participate in sport outside school and who are the least active appear to gain more weight than their more active peers (2+)
	The evidence from cohort studies is inconsistent on the associations between television viewing and weight gain. Some but not all identified studies found a significant association between greater television viewing and weight gain (2+)

Adults	
<i>General</i>	Among adults, there is a body of evidence from cohort studies that pregnancy, menopause and smoking cessation are key stages in the life-course associated with weight gain. The evidence on the importance of other life stages, such as marriage, divorce and a change in work patterns (for example, shift working) remains unclear (2+)
<i>Physical activity</i>	There is limited evidence from cohort studies that increasing physical activity may minimise the weight gain associated with smoking cessation (2+) There is a body of evidence from cohort studies that adults are more likely to maintain a healthy weight if they maintain an active lifestyle and reduce sedentary behaviours such as television viewing (2+)
<i>Dietary factors</i>	There is a body of evidence from cohort studies that adults are more likely to maintain a healthy weight if they consume a low-fat diet containing less 'takeaway' foods, more fruit and vegetables, salad and fibre and little alcohol. Reducing consumption of confectionery and drinks high in sugar may also help to prevent weight gain (2+)

Evidence of effectiveness of prevention interventions targeted at the general population

INTERVENTION	EVIDENCE
Raising awareness	
<i>Weight outcomes</i>	There is limited evidence to show that a multi-component intervention including a public health media campaign, can have a beneficial effect on weight management, particularly among individuals of higher social status (2+) The effectiveness of promotional campaigns focusing on education alone remains unclear (1+)
<i>Diet outcomes</i>	There is a body of evidence that promotional campaigns including media interventions can increase awareness of what constitutes a healthy diet and may subsequently improve dietary intakes (2+) There is a body of evidence that food promotion can have an effect on children's food preferences, purchase behaviour and consumption. The majority of food promotion focuses on foods high in fat, sugar and salt and therefore tends to have a negative effect. However, food promotion has the potential to influence children in a positive way (2+)
<i>Physical activity outcomes</i>	It remains unclear whether media interventions can influence participation in physical activity. There is some evidence that interventions may be more successful if they target motivated subgroups (2++) Promotional campaigns including media interventions can improve knowledge, attitudes and awareness of physical activity. Levels of awareness are likely to vary according to the type of medium used and the scale of the campaign (2++)
<i>Generalisability</i>	The majority of the identified interventions are generalisable to the UK (2+) There is a paucity of evidence on the effectiveness of interventions among lower socioeconomic groups and black and minority ethnic groups (N/A) There is a paucity of evidence in children and young people; the generalisability of evidence in adults to children and young people remains unclear (N/A) The effectiveness of interventions varies by age, gender, social status and ethnicity (2+)
<i>Implementation</i>	Parents are important role models for children and young people in terms of behaviours associated with the maintenance of a healthy weight (3) Books, magazines and television programmes are an important source of information and actively involving media providers may improve the effectiveness of interventions (3) A significant proportion of parents may not recognise that their child is overweight and may have a poor understanding of how to translate general advice into specific food choices (3)

For the Key to the levels of evidence (1++, 1+, 1 etc), see page 126.

Evidence of effectiveness of prevention interventions targeted at children

INTERVENTION	EVIDENCE
Home (pre-school children and family-based)	
<i>Weight outcomes</i>	There is limited evidence that interventions which focus on the prevention of obesity through improvements to diet and activity appear to have a small but important impact on body weight that may aid weight maintenance (1+) Improvements in the food service to pre-school children can result in reductions in dietary intakes of fat and improved weight outcomes (1+) No family studies were identified among children under 5 years of age (N/A) Family-based interventions that target improved weight maintenance in children and adults, focusing on diet and activity, can be effective, at least for the duration of the intervention (1++) The effectiveness of interventions tends to be positively associated with the number of behaviour change techniques taught to both parents and children (1++) It remains unclear whether the age of the child influences the effectiveness of family-based interventions compared with individual interventions (N/A)
<i>Diet and activity outcomes</i>	Interventions which do not identify favourable changes in weight outcomes may identify favourable changes in diet and/or activity outcomes (where recorded). The reasons for this are unclear (1+) There is some evidence that interventions which do not focus on preventing obesity, but aim to bring about modest changes in dietary and physical activity behaviour, are unlikely to demonstrate an impact on body weight. However, there is evidence from cohort studies that people who habitually eat healthy diets and are physically active are more likely to maintain their weight over the long term (2+) There is evidence for small but important beneficial effects of interventions that aim to improve dietary intake (such as videos, interactive demonstrations, and changing food provision at nursery school) so long as these interventions are not solely focused on nutrition education alone (2+) The provision of regular meals in a supportive environment free from distractions may improve dietary intakes (4) There is limited evidence that structured physical activity programmes within nurseries can increase physical activity levels (grade pending) Interventions which involve parents in a significant way may be particularly effective and can improve parental engagement in active play with children and a child's dietary intake (2+)
<i>Generalisability</i>	The majority of interventions identified were conducted in the USA. However the findings are likely to be generalisable to the UK population (4) Interventions should be tailored as appropriate for lower-income groups (1+) 2–5 years is a key time to establish good nutritional habits especially when parents are involved (1+)
<i>Implementation</i>	Interventions require some involvement of parents or carers (1+) There is limited evidence that interventions to increase opportunities for children to be active can be incorporated into nurseries and implemented by nursery staff (grade pending)

For the Key to the levels of evidence (1++, 1+, 1 etc), see page 126.

Schools	
<i>Weight outcomes</i>	The evidence on the effectiveness of multi-component school-based interventions to prevent obesity (addressing the promotion of physical activity, modification of dietary intake and reduction of sedentary behaviours) is equivocal. Some identified interventions demonstrated a reduction in mean BMI and the prevalence of obesity while the intervention was in place, but this finding was not universal. UK-based evidence in particular is lacking (2+) School-based physical activity interventions (physical activity promotion and reduced television viewing) may help children maintain a healthy weight (no grade assigned) There is limited evidence from one UK-based study to suggest that interventions to reduce consumption of carbonated drinks containing sugar may have a role in reducing the prevalence of overweight and obesity (1++)
<i>Diet and activity outcomes</i>	There is a body of evidence that school-based multi-component interventions addressing various aspects of diet and/or activity in the school, including the school environment are effective in improving physical activity and dietary behaviour, at least while the intervention is in place. However, UK-based evidence to support multi-component interventions (the 'whole-school approach') is limited (1+) There is a body of evidence to suggest that short- and long-term school-based interventions to improve children's dietary intake may be effective, at least while the intervention is in place. This includes interventions aiming to increase fruit and (to a lesser extent) vegetable intake, improve school lunches and/or promote water consumption (1+) UK-based evidence suggests that school children with the lowest fruit and vegetable intakes at baseline may benefit more from the school-based interventions than their peers (2+) There is evidence from multi-component interventions to suggest that both short- and long-term physical activity focused interventions may be effective, at least while the intervention is in place (1+)
<i>Other outcomes</i>	No negative outcomes were reported in the identified studies. One multi-component study showed that measures of extreme dieting behaviour remained unchanged (1+)
<i>Generalisability</i>	Most of the evidence for school-based interventions is non-UK based. However, it is likely that the findings are generalisable to the UK (4)
<i>Implementation</i>	There is limited UK evidence to indicate that in terms of engaging schools it is important to enlist the support of key school staff (2+) There is a body of evidence to suggest that young people's views of barriers and facilitators to healthy eating indicated that effective interventions would (i) make healthy food choices accessible, convenient and cheap in schools, (ii) involve family and peers, and (iii) address personal barriers to healthy eating, such as preferences for fast food in terms of taste, and perceived lack of will-power (1++) There is a body of evidence to suggest that young people's views on barriers and facilitators suggest that interventions should (i) modify physical education lessons to suit their preferences, (ii) involve family and peers, and make physical activity a social activity, (iii) increase young people's confidence, knowledge and motivation relating to physical activity, and (iv) make physical activities more accessible, affordable and appealing to young people (1++)

Evidence of effectiveness of prevention interventions targeted at adults

INTERVENTION	EVIDENCE
Workplace	
<i>Weight outcomes</i>	Worksite behaviour modification programmes that include health screening with counselling/education can result in short-term weight loss. Weight loss may be regained post intervention (1+)
	Payroll incentive schemes (such as free gym membership) are either only effective in the short term (during the period of the intervention) or ineffective for weight control (1+)
	There is inconclusive evidence for the effectiveness of workplace-based physical activity interventions on weight outcomes (N/A)
	The effectiveness of healthier food provision in workplaces on weight outcomes remains unclear (2++)
	No studies were identified which considered the provision of water in the workplace, active travel schemes and stair use on weight outcomes (N/A)
<i>Diet and activity outcomes</i>	Worksite behaviour modification programmes, such as health screening followed by counselling and, sometimes, environmental changes, can lead to improvements in nutrition and physical activity while the intervention is in place (1+)
	There is a body of evidence that the provision of healthier food choices can encourage consumption of a healthier diet (2++)
	Workplace physical activity programmes can have a positive effect on physical activity (1++)
	Environmental improvements in stairwells, such as decoration, motivational signs and music may increase stair use. Posters alone may be ineffective or effective only while the posters are in place (2+/++)
	No studies were identified which considered the provision of water in the workplace on diet or activity outcomes (N/A)
	It is unknown whether incentive schemes improve dietary intakes or increase physical activity levels (2+)
<i>Generalisability</i>	It remains unclear whether the effectiveness of interventions varies by age, gender, socioeconomic or ethnic group (N/A)
<i>Implementation</i>	There is little evidence on the most effective strategies for attracting workplaces to invest in the health and activity of their staff, with the exception of weak evidence of reduced sick leave as a result of physical activity programmes (N/A)
	A body of UK-based case studies suggests that factors most likely to make a canteen-style five-a-day intervention work are: commitment from the top, enthusiastic catering management, a strong occupational health lead, links to other on-site health initiatives, free or subsidised produce and heavy promotion and advertisement at point of purchase (3)
	A body of UK-based case studies suggests that the more successful behaviour modification/education techniques include an interdisciplinary approach with broad representation including health and safety and human resources, and implementers from high grades and strategic positions; initiatives integrated into worksite objectives; staff involvement, communication and realistic objectives; activities that go beyond the superficial and address root causes (3)
	A UK-based survey of Heartbeat Award schemes recommended improved promotion and better integration with other health programmes (3)

For the Key to the levels of evidence (1++, 1+, 1 etc), see page 126.

Community interventions led by health professionals

<i>Weight outcomes</i>	Sustained health-professional-led interventions in primary care or community settings, focusing on diet and physical activity or general health counselling can support maintenance of a healthy weight (1+) Interventions which provide support and advice on physical activity and diet are more likely to be effective for weight outcomes than interventions which focus on physical activity alone. There is no reliable evidence for diet alone (1+)
<i>Diet and activity outcomes</i>	Interventions which do not identify favourable changes in weight outcomes may identify favourable changes in diet and/or activity outcomes (where recorded) (1+) Behavioural/educational interventions to increase physical activity can be moderately effective, particularly for walking and non-facility-based activities, although increases may not be sustained over time (1++) Limited evidence suggests that using an incentive of free access to leisure facilities is likely to increase activity levels but only during the period of the intervention (1+) Moderate- or high-intensity dietary interventions most commonly report clinically significant reductions in fat intake and an increase in fruit and vegetable intake (1++) Briefer interventions, such as brief counselling/dietary advice by GPs or other health professionals, can be effective in improving dietary intake but tend to result in smaller changes than intensive interventions (1++) Interventions with a greater number of components are more likely to be effective (1++)
<i>Generalisability</i>	The majority of interventions identified were conducted in the USA. However, the findings are likely to be generalisable to the UK population (N/A) Although the majority of studies included predominantly white, higher social status and reasonably motivated individuals, there is some evidence that interventions can also be effective among lower social groups and effectiveness does not vary by age or gender (1+)
<i>Implementation</i>	Tailoring dietary advice to address potential barriers (taste, cost, availability, views of family members, time) is key to the effectiveness of interventions and may be more important than the setting (3) The type of health professional who provides the advice is not critical as long as they have the appropriate training and experience, are enthusiastic and able to motivate, and are able to provide long-term support (3) It remains unclear whether interventions are more effective when delivered by multidisciplinary teams (N/A) There is some evidence that primary care staff may hold negative views on the ability of patients to change behaviours, and their own ability to encourage change (3) There is a body of evidence from UK-based qualitative research that time, space, training, costs and concerns about damaging relationships with patients may be barriers to action by health professionals (GPs and pharmacists) (3) There is some evidence from the UK that patients are likely to welcome the provision of advice despite concerns by health professionals about interference or damaging the relationship with patients (3) Tailoring physical activity advice to address potential barriers (such as lack of time, access to leisure facilities, need for social support and lack of self-belief) is key to the effectiveness of interventions (1++)

For the Key to the levels of evidence (1++, 1+, 1 etc), see page 126.

Broader community	
<i>Weight outcomes</i>	There is no evidence on the effectiveness of broader environmental interventions on the maintenance of a healthy weight and prevention of obesity (N/A)
	There is little evidence of benefit from locally implementable multi-component city- and state-wide interventions to prevent cardiovascular disease on weight outcomes (2+)
<i>Diet and activity outcomes</i>	No interventions were identified which addressed both diet and activity (N/A)
	There is little evidence of benefit from locally implementable city- and state-wide interventions to prevent cardiovascular disease in relation to diet and/or physical activity outcomes (2+)
	Point of purchase schemes in shops, supermarkets, restaurants and cafés can be effective in improving dietary intakes at least in the short term, particularly if accompanied by supporting education, information and promotion. There is some evidence that longer-term, multi-component interventions may show greater effects (2++)
	There is a body of evidence that creation of, or enhanced access to space for physical activity (such as walking or cycling routes), combined with supportive information/promotion, is effective in increasing physical activity levels (2++)
	The general promotion of active travel (for example, publicity campaigns) does not appear to be effective in increasing physical activity levels (1++)
	Targeted behavioural change programmes with tailored advice appear to change travel behaviour of motivated groups. Associated actions such as subsidies for commuters may also be effective (1++)
	Point of decision prompts or educational materials such as posters and banners have a weak positive effect on stair walking (2+)
<i>Generalisability</i>	Barriers may vary by age, gender and social status (3)
<i>Implementation</i>	Auditing the needs of all local users can help engage all potential local partners and establish local ownership (3)
	Interventions may be ineffective unless fundamental issues are addressed, such as individual confidence to change behaviour; cost and availability; pre-existing concerns such as poorer taste of healthier foods and confusion over mixed messages; the perceived 'irrelevance' of healthier eating to young people; and the potential risks (including perception of risk) associated with walking and cycling (3)
	Addressing safety concerns in relation to walking and cycling may be particularly important for females and children and young people and their parents (3)
	Interventions which incorporate novel educational and promotional methods, such as videos and computer programmes, may improve dietary intake (1++)
	Changes to city-wide transport, which make it easier and safer to walk, cycle and use public transport – such as the congestion charging scheme in the City of London and Safe Routes to School schemes – have the potential to make active transport more appealing to local users (3)

Evidence of effectiveness of prevention interventions targeted at black, minority ethnic groups (BMEGs)

INTERVENTION	EVIDENCE
<i>Weight outcomes</i>	There is a dearth of evidence on the effectiveness of interventions among BMEGs in the UK. All identified RCTs were undertaken in the USA, the majority among African/black Americans (N/A)
	There is some evidence that interventions among African/black American women, which promote a low-fat diet and moderate activity, can result in modest decreases in BMI and waist circumference in the short to medium term (1+)

For the Key to the levels of evidence (1++, 1+, 1 etc), see page 126.

	The effectiveness of interventions among African/ black American children remains unclear. The majority of identified studies were not adequately powered to identify differences in BMI (N/A)
	There is evidence that school-based interventions are effective in preventing excess weight gain among black American children (1+)
	There is some evidence that ethnicity may be a risk factor for greater weight gain during childhood, pregnancy and smoking cessation (3)
<i>Diet and activity outcomes</i>	There is a dearth of evidence on the effectiveness of interventions among BMEGs in the UK. All identified RCTs were undertaken in the US, the majority among African/black Americans (N/A)
	There is a body of evidence that culturally specific interventions among black American adults can significantly improve fruit and vegetable intake, reduce percentage energy from total and saturated fat and reduce energy intake up to 2 years (1+)
	The effectiveness of tailored physical activity interventions targeted at BMEGs, compared with a non-targeted intervention programme, remains unclear (N/A)
	The effectiveness of interventions among children remains unclear (N/A)
<i>Generalisability</i>	The generalisability of specific interventions among black American populations to all UK BMEGs may be limited but general learning can be applied to the UK (4)
	Community settings, such as churches, have been shown to be an effective setting for engaging black/African Americans (1++)
	Additional barriers for BMEGs include cost, child care, cultural codes of conduct, language, racism and religious discrimination (3+)

Evidence of effectiveness of prevention interventions targeted at vulnerable groups

INTERVENTION	EVIDENCE
<i>Weight outcomes</i>	The effectiveness of interventions among lower-income and other vulnerable groups remains unclear (N/A)
	There is a dearth of evidence on the effectiveness of interventions among individuals with a disability. There is limited short-term evidence to suggest that intervention may prevent excessive weight gain in overweight adults with Down's syndrome (N/A)
	There is some evidence that interventions to prevent excess pregnancy weight gain may be effective among lower-income groups but the impact of baseline weight remains unclear (1+)
<i>Diet and activity outcomes</i>	There is a paucity of evidence on the effectiveness of interventions to manage weight, improve dietary intake and/or improve activity levels among vulnerable groups (N/A)
	The impact of interventions during pregnancy to lower income groups in relation to long-term diet and activity levels remains unclear (N/A)
<i>Generalisability</i>	Additional barriers for vulnerable groups include cost, child care, cultural codes of conduct, language, racism and religious discrimination (3+)

For the Key to the levels of evidence (1++, 1+, 1 etc), see page 126.

Evidence of effectiveness of prevention interventions targeted at vulnerable life stages

INTERVENTION	EVIDENCE
<i>Weight outcomes</i>	On balance, smoking cessation interventions incorporating weight management may increase continuous abstinence rates but the long-term impact on weight, and the impact on diet and physical activity levels, remains unclear (1+)
	There is a body of evidence that exercise (walking, other aerobic training, resistance training, and strength training with weights machines or combinations) can improve body composition and result in a small loss of body weight and fat in postmenopausal women. This effect seemed to be optimal when combined with a weight-reducing diet (1++)
	There is limited evidence that a weight management programme addressing diet and activity during the menopause can prevent excess weight gain in women during the menopause (1++)
	There is limited evidence to suggest that continuing a regular exercise regimen and following an appropriate, healthy diet throughout pregnancy can result in significantly less total weight gain and significantly less increases in the sum of skinfolds (2+)

MANAGEMENT OF OBESITY IN NON-CLINICAL SETTINGS

Evidence of effectiveness of interventions in non-clinical settings targeted at children and adults

INTERVENTION	EVIDENCE
<i>Weight outcomes</i>	In both children and adults, there is a paucity of good-quality evidence on the effectiveness of interventions in non-clinical settings (N/A)
Adults	There is limited evidence on the effectiveness of interventions based in non-clinical settings to manage obesity in adults (particularly men) (N/A)
	There is moderate evidence that a multi-component commercial group programme may be more effective than a standard self-help programme. It remains unclear whether the branded commercial group programme for which there is evidence of effectiveness (WeightWatchers) is more or less effective than other branded commercial programmes (1++)
	There is no strong evidence to support the use of meal replacement products over a standard low-calorie diet (N/A)
	There is limited evidence that interventions to manage obesity based in workplace settings can be effective, though weight loss may be small in the long term (1-)
	There is some evidence that computer/email/internet-based programmes accompanied by greater ongoing support – in person, by post or email – may be more effective than those without (1+)
	The effectiveness of commercial and computer-based weight loss programmes in men remains unclear (N/A)
	There is limited evidence that a diverse range of novel, multi-component community-based interventions may be effective in the management of obesity, including a peer-led programme and a group-based and individual-based weight loss programme in a religious-based setting, a home-based exercise programme (accompanied by regular group sessions) and a programme providing information through interactive television (1+)

For the Key to the levels of evidence (1++, 1+, 1 etc), see page 126.

Children	There is a paucity of evidence on the effectiveness of interventions to manage obesity in children based in non-clinical settings; the evidence that was identified was generally for children aged 8-12 years of age and at the extreme end of obesity (N/A)
	There is no UK-based evidence available on the effectiveness of interventions to manage obesity in children and young people in non-clinical settings (N/A)
	There is limited evidence that interventions provided by school staff can aid the management of obesity in children and young people, at least in the short term, but this may be less effective than a more intensive intervention delivered in a clinical setting (2-)
	There is insufficient evidence to compare the effectiveness of interventions with or without family involvement in non-clinical settings (N/A)
	There is some evidence that home-based interventions may be more effective when accompanied by behaviour modification material and ongoing support. However, the replicability of this intervention on a wider scale remains unclear (1+)
	No evidence was identified which considered the effectiveness of exercise referral programmes to manage overweight or obesity in children and young people (N/A)
<i>Diet and activity outcomes</i>	Among both children and adults, interventions in non-clinical settings that are shown to be effective in terms of weight management, are likely to demonstrate significant improvements in participants' dietary intakes (most commonly fat and calorie intake) or physical activity levels (1+)
<i>Other outcomes</i>	No negative outcomes were reported in the identified studies for children or adults (N/A)
<i>Generalisability</i>	The majority of studies identified were undertaken in the USA but many of the principles may be generalisable to the UK (N/A)
	It remains unclear whether the effectiveness of programmes in children or adults varies by age, gender, ethnicity or social status (N/A)
	It remains unclear whether the effectiveness of programmes varies by whether participants have previously attempted to lose or maintain their weight (N/A)
	The impact of participant joining fees and participant costs on the long-term effectiveness in 'real life' commercial programmes remains unclear (N/A)
<i>Implementation</i>	There is insufficient evidence to identify strategies in non-clinical settings that are associated with the long-term maintenance of weight and continuation of improved behaviours among overweight and obese adults and children (N/A)
	It remains unclear whether the source of delivery (both the main intervention and ongoing support) had an influence on effectiveness (N/A)
	There is insufficient evidence to assess the importance of the source of delivery (for example, health professional versus volunteer worker) on the effectiveness of programmes for children or adults (N/A)
	None of the identified studies considered inter-agency or inter-professional partnerships (N/A)

For the Key to the levels of evidence (1++, 1+, 1 etc), see page 126.

MANAGEMENT OF OBESITY IN CLINICAL SETTINGS

Evidence of effectiveness of lifestyle interventions in weight management and other outcomes in children and adolescents

INTERVENTION	EVIDENCE
<i>Weight loss</i>	The main requirement of a dietary approach to weight control is a reduction in total energy intake, with caloric expenditure exceeding caloric intake. Energy balance is critical to weight loss. Energy expenditure must exceed energy intake (good practice point) In specialist weight management programmes, physical activity and diet combined are more effective in weight management in children aged 4-16 years, than diet alone (1++) There is no evidence on the effectiveness of physical activity alone in the treatment of childhood obesity in a clinical setting (N/A) There is no clear evidence on which dietary intervention is the most effective in weight reduction and management in children and adolescents (N/A) Any recommended diet should be consistent with other healthy eating advice. Strict diets are not appropriate for children and adolescents except in rare occasions where combined with specialist supervision and intensive follow-up (good practice point) As part of a specialist weight management programme in the USA, targeting sedentary behaviour (watching television, playing computer games, imaginative play, talking on the telephone and playing board games) was shown to be as effective as promoting physical activity in managing weight in obese children aged 8-12 years (1+) As part of a specialist weight management programme in the USA, lifestyle exercise (e.g. walking or cycling to school, walking up and down the stairs, walking at lunch) was shown to be more effective than aerobic and calisthenics exercise (light exercises designed to promote general fitness) in maintaining weight loss in obese children aged 8-12 years (1+) In specialist weight management programmes, behavioural treatment combined with physical activity and/or diet is effective in the treatment of obese children and adolescents aged 3-18 years (1++) In specialist weight management programmes behavioural treatment can be more effective if parents, rather than children (aged 6 to 16 years), are given the main responsibility for behaviour change (1++) There is no evidence on which components of behavioural treatment are the most effective for childhood and adolescent obesity (N/A)
<i>Outcomes other than weight loss (from trials that reported weight loss)</i>	As part of specialist weight management programmes, physical activity can improve levels of fitness in obese children aged 8-12 years (1+) There is conflicting evidence on whether weight management programmes improve HDL and LDL cholesterol, and triglyceride levels in obese children (1++) There is conflicting evidence on whether weight management programmes improve diastolic and systolic blood pressure in obese children (1-) Specialist weight management programmes including diet and physical activity can improve the eating behaviour of 8-12-year-old obese children (1++) In specialist weight management programmes, behavioural treatment can have a positive effect on dietary quality (1++) In a specialist weight management programme targeting black adolescent girls aged 12-16 years, behavioural treatment improved self-esteem and feelings of depression (1+) In specialist weight management programmes, behavioural treatment can improve self-control in regard to weight-related behaviours in children aged 5-13 years (1+)

For the Key to the levels of evidence (1++, 1+, 1 etc), see page 126.

	In specialist weight control programmes, decrease in weight loss was associated with a decrease in consumption of 'red foods' in obese children aged 6-12 years (1+)
	Inpatient weight management programmes, with cognitive behaviour therapy, can improve quality of life over time in obese children and adolescents aged 9-19 years (1+)
<i>Harms (from trials that reported weight loss)</i>	Both a protein-sparing modified diet and a hypo-caloric balanced diet delivered in a school and outpatient programme setting can produce mild to moderate side effects such as: fatigue, weakness, muscle cramps, bad breath, headaches and abdominal pain in obese children aged 7-16 years (2+)

Evidence of harm in children and adolescents who undergo weight management/maintenance programmes

INTERVENTION	EVIDENCE
<i>Harms (from trials that reported weight loss)</i>	There is no evidence to suggest that professionally administered weight management programmes for children and adolescents increase the likelihood of developing eating disorders or cause psychological harm (2+) There is no evidence to suggest that professionally administered weight management programmes for children and adolescents have a negative impact on growth or lean mass loss (2-) There is no evidence to suggest that professionally administered weight management programmes for children and adolescents have a negative impact on psychosocial well-being (2+)
<i>Generalisability (from trials that reported weight loss)</i>	Generalisability of the findings remains unclear, as no study was conducted in the UK and the majority of the studies were based in highly specialised research settings (N/A) Generalisability of the findings is hindered by the methodological limitations of the retrieved studies (N/A)

Evidence of effectiveness of diet interventions for weight loss in adults

INTERVENTION	EVIDENCE
<i>General</i>	Energy balance is critical to weight loss. Caloric expenditure must exceed caloric intake (2++)
<i>Weight loss</i>	600 kcal deficit diet or low-fat diet Overall, a 600kcal deficit diet is effective for weight loss: a change of approximately -5kg compared with usual care at 12 months (1++) Overall, a low-fat diet is as effective for weight loss as other diets (with the same calorie content): a change of approximately 0.5kg compared with other diets at 12 months (1++) Low-calorie diet (1000-1600 kcal/day) Overall, a low-calorie diet is effective for weight loss: a change of approximately -6kg compared with usual care at 12 months (1+) Overall, a low-calorie diet is as effective for weight loss as a 600kcal deficit diet: a change of approximately +1kg (range +1.63kg to +0.20kg) compared with usual care at 12 months (1+) One study showed that a low-calorie diet resulted in a (non-significant) weight change of +0.30kg compared with a very-low-fat diet at 12 months (1+)

For the Key to the levels of evidence (1++, 1+, 1 etc), see page 126.

<i>Weight loss continued</i>	Very low calorie diet (<1000 kcal/day)	One study showed that a very low calorie diet (420kcal per day), for a limited period of 12 weeks, resulted in a (non-significant) weight change of –4.70kg compared with a 600 kcal deficit diet or low-fat diet at 24 months (1+) Overall, a 800kcal/day very low calorie diet (used for 4 days a week, in conjunction with a 1200kcal/day low-calorie diet) is as effective for weight loss as a continuous low-calorie diet: a change of approximately 0kg (range +3.52kg to –3.56kg) compared with a low-calorie diet at 12 months Overall, a 750kcal/day maximum very low calorie diet (used for 2 days a week, in conjunction with an individualised low-calorie diet of weight in lbs x 12 – 1000kcal) is as effective for weight loss as a continuous low-calorie diet: a change of approximately 0kg (range +2.11kg to –2.33kg) compared with a low-calorie diet at 12 months Overall, a very low calorie diet (800kcal/day for 8 weeks) is as effective for weight loss as a continuous low-calorie diet for 8 weeks: a change of approximately 1.13kg (range +3.06kg to –5.32kg) compared with a low-calorie diet at 18 months (1++)
	Protein sparing modified fast (PSMF) (carbohydrate content of 40g or less)	Overall, a PSMF (food-based, with a calorie content in the range of 1400–1900kcal/day) is as effective for weight loss as a 600kcal deficit diet or low-fat diet: a change of approximately –0.5kg compared with a 600kcal deficit diet or low-fat diet at 12 months (1++) Overall, a PSMF (based on food or very low calorie diet) is as effective for weight loss as low-calorie diet: a change of approximately –0.6kg compared with low-calorie diet at 12 months (1++) Overall, an 8-week PSMF (based on food with a calorie content of 1000kcal/day) is as effective for weight loss as an 8-week very low calorie diet (420kcal/day) PSMF: a change of approximately +1.5kg (range +3.76kg to –0.20 kg) compared with low-calorie diet at 18 months (1++) One study showed that a PSMF (based on food, calorie content 1700–1800kcal/day), resulted in a weight change of +1.20kg compared with a very-low-fat diet at 12 months (1+)
	High protein diet	One study showed that a high-protein diet (25% of energy from protein, low glycaemic index), resulted in a (non-significant) weight change of –1.90kg compared with a standard/medium-protein diet (12% of energy from protein, high glycaemic index) at 12 months (1+)
		There is not enough evidence to compare the use of diets in populations with specific co-morbidities (N/A) The effectiveness of all diets appears to change over time, with a trend for greater weight loss in the short term (up to 12 months), with a reduction in overall weight loss in the longer term (up to 60 months) (1++)
	<i>Generalisability</i>	Only two studies were conducted solely in the UK, with the majority of studies done in the USA. It is difficult to know how generalisable the results of the included studies are to the UK population, particularly in primary care (1++) From the included studies, the duration of intervention varied considerably and the rate of follow-up varied (1++) Dietary advice and support were provided most often by a dietitian. Other personnel who delivered interventions were physicians, research nurses, health educators, graduate students, diet group leaders, experts in nutritional counselling and behavioural therapists (1++) One assumption could be that the effect size achieved in the included studies may be smaller, in practice, in a less motivated, non-volunteer population and less intensive follow-up delivered by generalists (N/A)

For the Key to the levels of evidence (1++, 1+, 1 etc), see page 126.

Evidence of effectiveness of behaviour therapy (with or without diet) interventions for weight loss in adults

INTERVENTION	EVIDENCE
Weight loss	Overall, a combination of active support for diet (very low calorie diet or low-calorie diet) and behaviour therapy (problem solving, relapse prevention, stimulus control, dealing with problem situations, assertion, behaviour chain analysis) is effective for weight loss: a change of approximately –4kg compared with a passive approach (advice or self-help) at 12 months (1++) One study showed a combination of active support for a very low calorie diet and behaviour therapy resulted in weight change of –5.20kg compared with a passive approach (advice or self-help) at 12 months (1+) One study showed a combination of diet and behaviour therapy (self-monitoring, goal setting, cognitive restructuring, problem solving, and environmental management) resulted in weight change of –3.51kg compared to a healthy lifestyle information at 18 months (1+) Overall, a combination of diet (low-calorie diet and PSMF 400-500kcal/day food based) and behaviour therapy (cue avoidance, self-monitoring, stimulus control, slowing rate of eating, social support, planning, problem solving, assertiveness, cognitive restructuring, modifying thoughts, reinforcement of changes, relapse prevention, strategies for dealing with weight gain) is effective for weight loss: a change of approximately –7.6kg compared with diet alone at 12 months (1+) One study showed a combination of a PSMF diet (400–500 kcal/day based on food) and behaviour therapy resulted in weight change of –8.19kg compared with diet alone at 12 months (1+) One study showed a combination of intensive behaviour therapy and very low calorie diet (combination of 200 or 800kcal/day and 600kcal/day deficit) resulted in weight change of –1.18kg compared with a less intensive approach at 12 months (1+) One study showed a combination of 20 weeks' behaviour therapy (self-monitoring, goal setting, stimulus control) with a low-calorie diet and physical activity followed by 12 months of relapse prevention training was less effective compared with a combination of the 20 weeks' programme followed by 12 months of group problem solving (1+) Involving family members (usually spouses) in behavioural treatment programmes can be more effective for weight loss than targeting the overweight individual only. Overall, involving family members (in the same sessions as the individual) is effective for weight loss: a change of approximately –2.96kg compared with the individual alone at 12 months (1++) Group behavioural programmes do not result in a greater weight loss than behavioural programmes aimed at individuals at 12 months. At 24 months, one study showed that group intervention resulted in a significant weight difference of +8.10kg compared to the individual alone. Absolute weight changes were –4.20kg for the group compared with –12.30kg for individual intervention. This difference was not maintained at 60 months (1++) The effectiveness of all interventions appears to change over time, with a trend for greater weight loss in the short term (up to 12 months), with a reduction in overall weight loss in the longer term (up to 60 months) (1++)
Generalisability	Only two studies were conducted solely in the UK, with the majority of studies done in the US. It is difficult to know how generalisable the results of the included studies are to the UK population, particularly in primary care (1++) From the included studies, the duration of intervention varied considerably and the rate of follow-up varied (1++)

For the Key to the levels of evidence (1++, 1+, 1 etc), see page 126.

D
Resources

Behaviour therapy and additional support was provided most often by a dietitian and/or people with behavioural treatment or psychological expertise. Other personnel who delivered interventions were physicians, physiotherapists, health educators, graduate students, occupational therapist, and specially trained GPs **(1++)**

One assumption could be that the effect size achieved in the included studies may be smaller, in practice, in a less motivated, non-volunteer population and less intensive follow-up, delivered by generalists **(N/A)**

Evidence of effectiveness of physical activity (alone or in combination with diet or behaviour therapy) interventions for weight loss in adults

INTERVENTION	EVIDENCE
Weight loss	Overall, physical activity (minimum of 30 minutes three times a week) is effective for weight loss: a change of approximately –3kg compared to no treatment at 12 months (1++)
	One study showed physical activity (60 minutes three times a week) resulted in a weight change of –2.36kg compared with information at 18 months (1+)
	Overall, physical activity alone (minimum of 30 minutes three times a week) was less effective for weight loss than diet alone at 12 months: a change of +3kg (1++)
	Overall, physical activity (minimum of 45 minutes three times a week) and diet (600kcal/deficit or low fat) is effective for weight loss: a change of approximately –7kg compared with no treatment at 12 months (1++)
	One study showed a combination of physical activity (30 minutes of moderate exercise daily plus supervised resistance training twice a week) and diet (classified as calorie deficit) resulted in weight change of –3.50kg compared with information at 12 months (1+)
	Overall, physical activity (minimum of 45 minutes three times a week) and diet (600kcal/deficit or low fat) is effective for weight loss: a change of approximately –1.95kg compared to diet alone at 12 months (1++)
	Overall, a combination of physical activity (varying in level from three to four sessions over 12 months to 30-45 minutes four to five times week), behaviour therapy (situational control, including cue avoidance, self-monitoring of calorie intake, eating behaviours and pulse rate, management of eating behaviours, relapse prevention, goal setting, cognitive reframing and coping imagery, stimulus control, social assertion, reinforcement techniques for enhancing motivation, cognitive strategies for replacing negative thinking with more positive statements and constructive self-statements), and diet (either calorie deficit or a low-calorie diet) is effective for weight loss: a change of –4.22kg compared with control (no treatment) at 12 months (1++)
	Overall, a combination of physical activity (minimum 150 minutes per week), behaviour therapy (behaviour change goals and problem solving, goal setting, menu planning, self-efficacy, consideration of body image, social support, social eating, removing road blocks, positive thinking, dealing with high-risk situations and slips, cue elimination, stress management and relapse prevention, self-monitoring, problem solving, managing cues, stimulus control, positive assertion, positive thinking, holiday eating, social support, motivation, role playing, modelling food tasting and grocery store tours) and diet (either calorie deficit or a very low calorie diet) is effective for weight loss: a change of –3.82kg compared with information alone (1++)
	One study showed a combination of physical activity (individualised level), behaviour therapy (self-monitoring, stimulus control, reinforcement, cognitive change), and diet (calorie deficit) was associated with a summary estimate of weight change of –5.80kg compared with behaviour therapy (enhancing body acceptance, disentangling self-worth from weight, barriers transformation, increased support and assertion, self-monitoring) alone (1+)

For the Key to the levels of evidence (1++, 1+, 1 etc), see page 126.

	One study showed a combination of physical activity (approximately 45 minutes five times a week maximum), behaviour therapy (stimulus control, problem solving, reducing barriers, exercising in different weather conditions), and diet (very low calorie diet 800-1000kcal/day and 1200-1500kcal for maintenance) was associated with a summary estimate of weight change of -7.00kg compared with physical activity and behaviour therapy (1+)
	Other benefits of physical activity (alone or in combination) include delay of onset of diabetes in people with impaired glucose tolerance; increased motility in older people with arthritis; reduction in the risk of developing hypertension and other cardiovascular events; reduction in medication use for comorbidities and improved quality of life (1++)
Generalisability	No studies were conducted in the UK, and 26 of the 33 unique studies were based in the USA. It is difficult to know how generalisable the results of the included studies are to the UK population, particularly in primary care (1++) From the included studies, the duration of intervention varied considerably and the rate of follow-up varied (1++) A wide variety of personnel delivered the different components of the interventions; this included physicians, researchers, health educators, graduate students, exercise coaches, trained interventionists, dietitians, commercial services (physical activity), and psychologists (1++) One assumption could be that the effect size achieved in the included studies may be smaller, in practice, in a less motivated, non-volunteer population and less intensive follow-up, delivered by generalists (N/A) The intensity and duration of exercise required to impact on long-term weight loss may be much higher than recommended in most behavioural treatment programmes (1++)

References

- 1 National Institute for Health and Clinical Excellence (2006) *Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children*. London: NICE
- 2 Mulvihill C, Quigley R (2003) *The management of obesity and overweight. An analysis of reviews of diet, physical activity and behavioural approaches: Evidence briefing*. 1st edition. London: Health Development Agency
- 3 Hillsdon M, Foster C, Naidoo B, Crombie H (2005) *The effectiveness of public health interventions for increasing physical activity among adults: A review of reviews*. 2nd edition. London: Health Development Agency

For the Key to the levels of evidence (1++, 1+, 1 etc), see page 126.

Evidence of cost-effectiveness

Tool 14

This Tool contains information on the cost-effectiveness of interventions to prevent and manage overweight and obesity. It is adapted from the NICE guideline on obesity¹ – see section 6: *Health economics* at www.nice.org.uk/guidance/CG43 for more information.

The key to the grading of evidence (1+, 2- etc) is given on page 126.

PREVENTION

INTERVENTION	NICE EVIDENCE REVIEW CONCLUSIONS	EVIDENCE
Diet and exercise programme	There is some evidence that a diet and physical activity intervention incorporating interactive educational sessions is cost-effective when compared with a similar intervention using only mail-shot advice for couples living together for the first time.	Two intervention groups: Low-level group receiving initial introductory group workshop followed by mail-outs, and high-level group receiving mail-outs alternated with interactive sessions with a dietitian and exercise physiologist (1+) (Dzator et al, 2004 ²). The aim of the intervention was to investigate the effect that diet and physical activity programmes have on couples. Investigation of four public health strategies (1+) (Roux et al, 2004 ³). The aim of the investigation was to assess the cost-effectiveness of population-wide strategies to promote physical activity in adults.
Workplace	The evidence did not suggest that physical activity counselling at a workplace resulted in any cost-effective gains in health outcomes, and studies on the benefits in terms of lost productivity are equivocal.	Seven sessions of workplace-based tailored counselling promoting physical activity and healthy dietary habits (1+) (Proper et al, 2004 ⁴). Eleven programmes addressing weight management, water intake, fruit and vegetable intake, television-viewing and various 'exercise' activities offered via internet and email (2-) (Aldana et al, 2005 ⁵).
School	There is some evidence that school-based interventions can result in cost-effective health gains. Both interventions identified resulted in weight loss at acceptable costs.	Children received 'Planet Health' intervention material during the curriculum (focus on decreasing television-viewing, decreasing consumption of high-fat foods, increasing fruit and vegetable intake, and increasing moderate and vigorous physical activity) (1+) (Wang et al, 2003 ⁶). After-school obesity intervention programme (2+) (Wang et al, 2004 ⁷).
Community weight loss programmes	There is some evidence that all population-wide strategies to promote physical activity in adults, as identified by the US Preventive Services Task Force (USPSTF), were cost-effective.	Investigation of factors that impact on an individual's decision to adhere to a community weight loss programme (3+) (Roux et al, 2004 ³).
Nutritional counselling	There is some evidence that nutritional counselling by a general practitioner (GP), compared with counselling by a dietitian, is cost-effective.	Investigation of behaviours that might "contribute to delay or avoidance of diet-related chronic diseases and conditions that are believed to be most prevalent among the low-income population" (2-) (Rajgopal et al, 2002 ⁸).

D
Resources

MANAGEMENT (non-pharmacological)

INTERVENTION	EVIDENCE	COST PER QALY (Quality-adjusted life year*)
Diet	23 group sessions with dietitian (assumption of 1 hour and a group of six) (Wood et al, 1991 ⁹).	£174
Behavioural treatment	14 extra contacts: 90-minute contacts with clinical psychologist (Wadden et al, 1989 ¹⁰).	£4,360
Physical activity	19 compulsory contacts by an unreported healthcare professional (assumption of physiotherapist and 1-hour contacts) (Pritchard et al, 1997 ¹¹).	£9,971

* QALY calculated by NICE in their health economics review – see section 6 of the NICE guideline on obesity.¹

NICE conclusions on the cost-effectiveness of non-pharmacological management

- Evidence on the cost-effectiveness of non-pharmacological interventions (diet, physical activity and behavioural treatment) is limited.
- Cost-effectiveness is closely geared to the duration of benefit.
- If weight loss relative to trend remains constant for five years post-intervention before returning to baseline, the cost per QALY (quality-adjusted life year) in the best-performing non-pharmacological studies ranges from £174 to £9,971.
- Dietary interventions seem particularly cost-effective due to the low levels of staff contact needed.
- These results should be treated as corroborative evidence, rather than definite proof of the cost-effectiveness of non-pharmacological interventions.

References

- 1 National Institute for Health and Clinical Excellence (NICE) (2006) *Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children*. London: NICE. www.nice.org.uk/guidance/CG43
- 2 Dzator JA, Hendrie D, Burke V et al (2004) A randomized trial of interactive group sessions achieved greater improvements in nutrition and physical activity at a tiny increase in cost. *Journal of Clinical Epidemiology*; 57 (6): 610-619
- 3 Roux L, Pratt M, Yanagawa T et al (2004) Measurement of the value of exercise in obesity prevention: A cost-effectiveness analysis of promoting physical activity among US adults. *Obesity Research*; 12: A18 (Suppl)
- 4 Proper KI, de Bruyne MC, Hildebrandt VH et al (2004) Costs, benefits and effectiveness of worksite physical activity counselling from the employer's perspective. *Scandinavian Journal of Work, Environment and Health*; 30 (1): 36-46
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- 6 Wang LY, Yang Q, Lowry R, Wechsler H (2003) Economic analysis of a school-based obesity prevention program. *Obesity Research*; 11 (11): 1313-24
- 7 Wang L, Yin Z, Gutin B et al (2004) A cost-effectiveness analysis of a school-based obesity prevention program. *Obesity Research*; 12: A18 (Suppl)
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- 9 Wood PD, Stefanick ML, Williams PT, Haskell WL (1991) The effects on plasma lipoproteins of a prudent weight-reducing diet, with or without exercise, in overweight men and women. *The New England Journal of Medicine*; 325: 461-466
- 10 Wadden TA, Sternberg JA, Letizia KA et al (1989) Treatment of obesity by very low calorie diet, behavior therapy, and their combination: a five-year perspective. *International Journal of Obesity*; 13 Suppl 2: 39-46
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Preventing overweight and obesity – NICE recommendations

Tool 15

This tool summarises the NICE recommendations for preventing overweight and obesity.¹

PART A: NICE recommendations for NHS health professionals

Overarching recommendations

- 1 Managers and health professionals in all primary care settings should ensure that preventing and managing obesity is a priority at both strategic and delivery levels. Dedicated resources should be allocated for action.
-

Strategic recommendations for senior managers and budget holders

- 2 In their role as employers, NHS organisations should set an example in developing public health policies to prevent and manage obesity by following existing guidance and (in England) the local obesity strategy. In particular:
 - on-site catering should promote healthy food and drink choices (for example by signs, posters, pricing and positioning of products)
 - there should be policies, facilities and information that promote physical activity, for example, through travel plans, by providing showers and secure cycle parking and by using signposting and improved décor to encourage stair use.
 - 3 All primary care settings should ensure that systems are in place to implement the local obesity strategy. This should enable health professionals with specific training, including public health practitioners working singly and as part of multidisciplinary teams, to provide interventions to prevent and manage obesity.
 - 4 All primary care settings should:
 - address the training needs of staff involved in preventing and managing obesity
 - allocate adequate time and space for staff to take action
 - enhance opportunities for health professionals to engage with a range of organisations and to develop multidisciplinary teams.
 - 5 Local health agencies should identify appropriate health professionals and ensure that they receive training in:
 - the health benefits and the potential effectiveness of interventions to prevent obesity, increase activity levels and improve diet (and reduce energy intake)
 - the best practice approaches in delivering such interventions, including tailoring support to meet people's needs over the long term
 - the use of motivational and counselling techniques.

Training will need to address barriers to health professionals providing support and advice, particularly concerns about the effectiveness of interventions, people's receptiveness and ability to change and the impact of advice on relationships with patients.
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All health professionals

- 6 Interventions to increase physical activity should focus on activities that fit easily into people's everyday life (such as walking), should be tailored to people's individual preferences and circumstances and should aim to improve people's belief in their ability to change (for example, by verbal persuasion, modelling exercise behaviour and discussing positive effects). Ongoing support (including appropriate written materials) should be given in person or by phone, mail or internet.
 - 7 Interventions to improve diet (and reduce energy intake) should be multicomponent (for example, including dietary modification, targeted advice, family involvement and goal setting), be tailored to the individual and provide ongoing support.
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| 8 | Interventions may include promotional, awareness-raising activities, but these should be part of a long-term, multicomponent intervention rather than one-off activities (and should be accompanied by targeted follow-up with different population groups). |
| 9 | Health professionals should discuss weight, diet and activity with people at times when weight gain is more likely, such as during and after pregnancy, the menopause and while stopping smoking. |
| 10 | All actions aimed at preventing excess weight gain and improving diet (including reducing energy intake) and activity levels in children and young people should actively involve parents and carers. |
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Health professionals working in/with primary care settings

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| 11 | <p>All interventions to support smoking cessation should:</p> <ul style="list-style-type: none"> • ensure people are given information on services that provide advice on prevention and management of obesity if appropriate • give people who are concerned about their weight general advice on long-term weight management, in particular encouraging increased physical activity. |
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Health professionals working in or with broader community settings (including healthy living centres and Sure Start programmes)

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| 12 | All community programmes to prevent obesity, increase activity levels and improve diet (including reducing energy intake) should address the concerns of local people from the outset. Concerns might include the availability of services and the cost of changing behaviour, the expectation that healthier foods do not taste as good, dangers associated with walking and cycling and confusion over mixed messages in the media about weight, diet and activity. |
| 13 | Health professionals should work with shops, supermarkets, restaurants, cafés and voluntary community services to promote healthy eating choices that are consistent with existing good practice guidance and to provide supporting information. |
| 14 | Health professionals should support and promote community schemes and facilities that improve access to physical activity, such as walking or cycling routes, combined with tailored information, based on an audit of local needs. |
| 15 | Health professionals should support and promote behavioural change programmes along with tailored advice to help people who are motivated to change to become more active, for example by walking or cycling instead of driving or taking the bus. |
| 16 | Families of children and young people identified as being at high risk of obesity – such as children with at least one obese parent – should be offered ongoing support from an appropriately trained health professional. Individual as well as family-based interventions should be considered, depending on the age and maturity of the child. |
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Health professionals working in/with pre-school, childcare and family settings

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| 17 | <p>Any programme to prevent obesity in pre-school, childcare or family settings should incorporate a range of components (rather than focusing on parental education alone), such as:</p> <ul style="list-style-type: none"> • diet – interactive cookery demonstrations, videos and group discussions on practical issues such as meal planning and shopping for food and drink • physical activity – interactive demonstrations, videos and group discussions on practical issues such as ideas for activities, opportunities for active play, safety and local facilities. |
| 18 | Family programmes to prevent obesity, improve diet (and reduce energy intake) and/or increase physical activity levels should provide ongoing, tailored support and incorporate a range of behaviour change techniques ... Programmes should have a clear aim to improve weight management. |
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Health professionals working in/with workplace settings

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| 19 | Health professionals such as occupational health staff and public health practitioners should establish partnerships with local businesses and support the implementation of workplace programmes to prevent and manage obesity. |
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PART B: NICE recommendations for local authorities and partners in the local community

Overarching recommendation

- 1 As part of their roles in regulation, enforcement and promoting wellbeing, local authorities, primary care trusts (PCTs) or local health boards and local strategic partnerships should ensure that preventing and managing obesity is a priority for action – at both strategic and delivery levels – through community interventions, policies and objectives. Dedicated resources should be allocated for action.
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Strategic recommendations for senior managers and budget holders

- 2 Local authorities should set an example in developing policies to prevent obesity in their role as employers, by following existing guidance and (in England) the local obesity strategy.
- On-site catering should promote healthy food and drink choices (for example by signs, posters, pricing and positioning of products).
 - Physical activity should be promoted, for example through travel plans, by providing showers and secure cycle parking and using signposting and improved décor to encourage stair use.
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- 3 Local authorities (including planning, transport and leisure services) should engage with the local community, to identify environmental barriers to physical activity and healthy eating. This should involve:
- an audit, with the full range of partners including PCTs or local health boards, residents, businesses and institutions
 - assessing (ideally by doing a health impact assessment) the effect of their policies on the ability of their communities to be physically active and eat a healthy diet; the needs of subgroups should be considered because barriers may vary by, for example, age, gender, social status, ethnicity, religion and whether an individual has a disability.
- Barriers identified in this way should be addressed.
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- 4 Local authorities should work with local partners, such as industry and voluntary organisations, to create and manage more safe spaces for incidental and planned physical activity, addressing as a priority any concerns about safety, crime and inclusion, by:
- providing facilities such as cycling and walking routes, cycle parking, area maps and safe play areas
 - making streets cleaner and safer, through measures such as traffic calming, congestion charging, pedestrian crossings, cycle routes, lighting and walking schemes
 - ensuring buildings and spaces are designed to encourage people to be more physically active (for example, through positioning and signing of stairs, entrances and walkways)
 - considering in particular people who require tailored information and support, especially inactive, vulnerable groups.
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- 5 Local authorities should facilitate links between health professionals and other organisations to ensure that local public policies improve access to healthy foods and opportunities for physical activity.
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Recommendations focussing on specific interventions

- 6 Local authorities and transport authorities should provide tailored advice such as personalised travel plans to increase active travel among people who are motivated to change.
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- 7 Local authorities, through local strategic partnerships, should encourage all local shops, supermarkets and caterers to promote healthy food and drink, for example by signs, posters, pricing and positioning of products, in line with existing guidance and (in England) with the local obesity strategy.
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- 8 All community programmes to prevent obesity, increase activity levels and improve diet (and reduce energy intake) should address the concerns of local people. Concerns might include the availability of services and the cost of changing behaviour, the expectation that healthier foods do not taste as good, dangers associated with walking and cycling and confusion over mixed messages in the media about weight, diet and activity.
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- 9 Community-based interventions should include awareness-raising promotional activities, but these should be part of a longer-term, multicomponent intervention rather than one-off activities.
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Reference

- 1 National Institute for Health and Clinical Excellence (2006) *Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children*. London: NICE. www.nice.org.uk/guidance/CG43

Preventing overweight and obesity – Interventions guide

Tool 16

The information contained in this tool is a guide only and not a recommendation of what should definitely be included in a local overweight and obesity action plan. Local plans must reflect the needs of the local population and there is no one solution for all PCTs.

Source: Adapted from *Tackling obesity: a toolkit for local partnership action*, by A Maryon-Davis, A Giles and R Rona¹ and the NICE guideline on obesity.²

D

Resources

ACTION	INTERVENTION	PARTNERS	NICE REVIEW OF EVIDENCE
COMMUNITY			
Healthy eating			
<i>Healthy eating campaigns</i>	• Giving clear and simple healthy eating messages, building on existing campaigns such as 5 A DAY. • Simplifying what a portion of fruit and vegetables means for adults and children, for example using 'a handful'. • Evidence-based awareness-raising among parents of early years children, including the promotion of breastfeeding. • Evidence-based campaigns to encourage parents to make healthy choices for themselves and their children. • Messages to be delivered across the public sector and beyond, for example in schools and the workplace, through health professionals, and through wellbeing support programmes for people with severe mental illness.	• Creative media • Food industry • Consumer groups • Health professionals • Communities • A range of government departments	Interventions can result in improvements in various dietary outcomes, including a decrease in high fat consumption, an increase in fruit and vegetable intake, and a decrease in fried foods and snacking. For example: • The BBC's Fighting Fat, Fighting Fit campaign demonstrated statistically significant improvements in diet five months after the campaign in a random survey of people who registered for more information. Significant improvements were reported in fruit and vegetable intake, with a 13% increase in respondents eating the recommended five portions a day. There was also a 16% increase in participants eating fried food less than once a week. Significant improvements were also observed in consumption of fat spreads, consumption of lower fat milk, removal of fat from meat, snacking and consumption of starch-based meals.^{3, 4} • One-year follow-up of the Department of Health's community-based 5 A DAY pilot projects demonstrated that the intervention had stemmed a fall in fruit and vegetable intake against the national trend. Overall the intervention had a positive effect on people with the lowest intakes. Those who ate fewer than five portions a day at baseline increased their intake by one portion over the course of the study. In contrast, those who ate five or more portions a day at baseline decreased intakes by about one portion per day.⁵

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			A review by the Food Safety Promotion Board in Ireland reported that social marketing interventions were strongly and equally effective at influencing behaviour, knowledge and psychosocial variables such as self-efficacy, attitudes and perceptions of the benefits of eating more healthily. Social marketing interventions appeared to be moderately effective at influencing stage of change in relation to diet, and to have a more limited effect on diet-related physiological outcomes such as blood pressure, body mass index and cholesterol.⁶
Strategies to minimise barriers to healthy eating by improving availability and access	Making it easier for people, particularly those without the use of a car, to access affordable and healthy food is crucial in promoting healthy eating. Those involved in delivering health improvements should work with local transport authorities on producing accessibility strategies for their area.	- Local health commissioners - Local transport authorities - Health promotion specialists - Community groups - Local media - Local food retailers - Local restaurants and cafeterias - Local employers and businesses	Studies that looked at the effect of the opening of a supermarket in a deprived, poor-retail-access community in Leeds found that participants who switched to the new store increased their consumption of fruit and vegetables by 0.23 portions per day. The findings suggest that fundamental issues around cost, availability and taste are key considerations for future interventions. Twenty-eight per cent of those who did not switch to the new store were concerned about the expense. This was backed-up by qualitative work which found that, although the stores improved physical access, this did not fundamentally alter economic access.^{7, 8}

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<i>Healthy eating group work targeted at higher risk or disadvantaged groups</i>	Specific action in each area will depend on local priorities, but might include initiatives such as boosting sales of fruit and vegetables through local retailers, food growing schemes, cooking skills development, food co-operatives and community lunches. Neighbourhood Renewal initiatives and programmes such as New Deal for Communities and Neighbourhood Management initiatives have an emphasis on partnership working and community involvement.	• Lay community leaders • Voluntary organisations • Health promotion specialists • Dietitians • Regeneration workers • Local retailers • Community groups
<i>Advocacy of nutritional policies at national and international level conducive to healthy eating</i>	Lobbying of MPs, MEPs, ministers, commissioners and the Food Standards Agency regarding: • simplifying nutrition labelling • increasing the availability of healthier foods (including reducing the levels of salt, added sugars and fat in prepared and processed food and drinks, and increasing access to fruit and vegetables) • reversing the trend towards bigger portion sizes • adopting consistent and clear standards for information on food, including signposting • the promotion of healthy food to children • the promotion of healthy agricultural policy.	• Local health commissioners • Local authorities • Other local partner agencies • Local health networks • Local MPs and MEPs
Physical activity		
<i>Physical activity and fitness campaigns</i>	Ensuring that everyone has the information they need to understand: • the links between activity and better health • the importance of achieving 30 minutes' moderate activity on at least five days of the week (for adults), and • where the opportunities exist in daily life to be active.	• Local and national media • Health promotion specialists • Leisure centre staff • Local employers and businesses • Voluntary groups • GPs and practice nurses • Sports clubs • Regeneration organisations and community groups • The BBC's Fighting Fat, Fighting Fit campaign showed significant improvements in physical activity: overall 39% of the full sample and 74% of completers increased their activity levels and the proportion undertaking regular moderate exercise increased from 29% to 45% (from 29% to 60% for completers only).³ • The US-based VERB campaign which aims to increase awareness of physical activity among 9-13 year olds, found that levels of activity increased in line with awareness of the campaign. Those 9-10 year olds who were aware of the campaign engaged in 34% more free-time physical activity sessions per week than those who were unaware. However, no overall effect

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on free-time physical activity sessions was detected at the population level. Furthermore, 90% of children who were aware of VERB also demonstrated understanding of the messages. A significant positive relation was detected between the level of awareness of VERB and weekly average sessions of free-time physical activity.⁹

- The Australian Walk Safely To School Day attributed a relative, short-term increase of 31% of children walking to school to the campaign; on a population level this equates to a 6.8% increase in walking to school.^{10, 11}

Building more active communities

Providing a wide range of physical activity and sporting opportunities within the local community, close to where people live, together with creating cleaner, safer and more activity-friendly local environments will be at the heart of building more active communities.

For example, the Local Exercise Action Pilots (LEAP) are evaluating a range of community approaches that aim to increase levels of activity across the community as a whole, as well as targeted work with specific groups such as older people and children. The pilots are being led by PCTs, who are working in innovative ways with many different partners such as leisure and social services and a range of voluntary organisations. The national evaluation will identify the most effective approaches, share best practice and make recommendations to inform future investment.

- Local authority planners
- Leisure providers
- PCTs
- Regeneration organisations
- Community and voluntary groups

Local transport policies which encourage walking and cycling

Whole-town approaches to shifting travel from cars to walking, cycling and public transport built upon the evaluation of Sustainable Travel Towns pilots. Initiatives may include:

- promotion of professional training for cycling and walking
- upgrading of cycle-parking facilities
- provision of safe, high-quality walking and cycling infrastructure
- better street lighting
- crossings for pedestrians and cyclists
- new cycle lanes and cycle tracks.

- Local authority planners
 - Local transport providers
- A systematic review of active travel versus car travel concluded that targeted behavioural change programmes with tailored advice can improve the travel behaviour of motivated subgroups (the largest study showing a 5% shift to active travel).¹²

Continued on next page

<i>Other local planning to encourage physical activity</i>	- Working to ensure everyone has access to well-maintained, safe, attractive, affordable leisure and sports facilities, playgrounds, parks and the countryside. - Promoting the links between well-planned, designed, managed and maintained streets, open spaces and buildings and opportunities for activity. - The Cleaner, Safer, Greener Communities programme engages local people in decisions about the services they get, empowers them to trigger action, makes service providers responsive to their needs and gives opportunities to drive improvements to local neighbourhoods. - Building partnerships with local planning authorities to meet the needs of local communities by providing new sporting facilities where they are needed and protecting existing ones unless they are in surplus.	- Local authority planners - Voluntary organisations - Regeneration organisations	A systematic review (of all US-based studies of varying designs) found strong evidence that the creation of space or enhanced access to places for physical activity combined with informational outreach activities is effective in increasing physical activity levels. Interventions increased the frequency of activity by between 21% and 84%. Interventions included access to fitness equipment, access to community centres and creation of walking trails. ¹³
HOME (Pre-school)			
<i>Advice about infant feeding and healthy eating for young families</i>	- Awareness-raising among parents of early-years children about healthy choices, including the promotion of breastfeeding for the first six months of life. - Promotion of the National Breastfeeding Awareness Week. - Promotion of the Healthy Start scheme (which has replaced the Welfare Food Scheme). - Lobbying for an amendment to the EU Directive to restrict advertising of infant follow-on formula. - Encouraging parents to make healthy choices for themselves and their children.	- Infant feeding advisers - Health visitors - GPs - Local community groups - Local media - Voluntary organisations	A US-based study reported that a parent education programme focusing on nutrition-related behaviour resulted in the intervention group consuming significantly more fruits, vitamin-C-rich fruits, green vegetables, breads, rice/pasta and orange vegetables than the control group.¹⁴ Another study reported that attending educational sessions significantly improved the frequency of parents offering their child water.¹⁵ Furthermore, a systematic review reported beneficial effects on the nutritional content of day-care menus.¹⁶
<i>Promotion of active lifestyles</i>	- Provision of 'positive parenting' advice or classes. - Encouraging parents to engage in active play with their children and reduce sedentary behaviour. - Provision of safe play areas. - Training for childcare providers around active play.	- Parents - Early years providers - Health visitors - GPs - Caterers - Local media - Voluntary organisations	The UK-based MAGIC (Movement and Activity Glasgow Intervention in Children) pilot study reported that a nursery-based structured physical activity programme resulted in a significant improvement in children's physical activity levels. One study reported that attending educational sessions significantly improved the frequency of parents engaging in active play with their child.¹⁵ A UK-based study was successful in significantly reducing television-viewing (the primary aim of the study) but did not show significant improvements in snacking or watching television during dinner.¹⁷

Continued on next page

SCHOOL

Healthy eating

Providing a whole-school health-promoting environment

- Promoting the National Healthy Schools Programme
- Related policies in place.
- A whole-school health-promoting environment.
- The role of school nurses is being expanded and developed to help build public health expertise within schools and provide individual children, young people and families with access to individual support and advice to prevent obesity and promote healthier eating.

- Head teachers
- School governors
- Class teachers
- School nurses
- Caterers
- Parents and pupils

One study reported that 7-11 year old children in schools adopting a whole-school approach were consuming significantly more vegetables at one-year follow-up.¹⁸ Another multicomponent intervention study reported that 5-7 year old children in the intervention group consumed significantly more vegetables and fruit (girls only).¹⁹

The two-year Planet Health programme among US 12 year olds – promoting physical activity, improved diet and reduction of sedentary behaviours (with a strong emphasis on reducing television-viewing) – resulted in a reduction in the prevalence of obesity in intervention girls (but not boys) compared with controls.^{20, 21}

Teaching healthy eating

The Food in Schools programme (www.foodinschools.org) helps schools become healthy schools by promoting good practice throughout the school day in healthier breakfast clubs, tuck shops, lunch boxes, vending machines and cookery clubs, as well as through water provision, growing clubs and the dining room environment.

There are many opportunities for promoting healthy eating throughout the

National Curriculum including:

- Design and Technology/Food Technology
- Science
- Personal, Social and Health Education
- DfES Growing Schools programme – using the outdoor classroom' with an emphasis on fruit and vegetable growing and farming.

- Head teachers
- School governors
- Class teachers
- Parents and pupils

A review of five UK school-based interventions concluded that all five interventions considered (fruit tuck shops, CD-ROM, art/play therapy, whole-school approach and a family-centred school-based activity) have the potential to be incorporated into a health-promoting school approach and could be more effective than stand-alone interventions. The authors highlighted the importance of actively engaging schools for the success of the intervention.²²

Continued on next page

<i>Teaching healthy cooking skills</i>	• Making available slots for teaching healthy cooking skills. • Food in Schools programme.	• Head teachers • School governors • Class teachers • Parents and pupils	
<i>Providing healthy school meals</i>	• Nutritional standards for school meals provide minimum requirements for the main food groups. For nutrient-based standards see <i>Eating well at school</i>, a report by the Caroline Walker Trust and the National Heart Forum.²³ • School nutrition policy in place. • Healthy catering guidelines written into catering contract. • The School Fruit and Vegetable Scheme (SFVS), which forms part of the 5 A DAY programme, provides 4-6 year olds in participating LEA-maintained infant, primary and special schools in England with a free piece of fruit or vegetable each school day. • School milk subsidy scheme. • Free school meals. • Breakfast clubs. • Extended schools.	• Head teachers • School governors • Class teachers • Caterers • Parents and pupils	Three large-scale interventions aimed to modify school lunch provision: one significantly reduced children's total energy and fat intake;²⁴ one reduced children's fat intake but not total energy intake in school lunch observations;²⁵ and the last showed no difference in fat intake.²⁶ One additional study within the fruit and vegetable intervention review showed that reducing relative prices on low-fat snacks was effective in promoting lower-fat snack purchases from vending machines in adolescents over one year.²⁷ Analysis of the UK National School Fruit Scheme (now known as the School Fruit and Vegetable Scheme or SFVS) showed that 4-6 year old children receiving school fruit had a significantly higher daily intake than controls (117g/day compared to 67g/day, respectively) but this difference was not maintained two years after the intervention when free fruit was no longer available.²⁸

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Physical activity

<i>Encouraging uptake of physical activity and sports</i> PE and school sport is an entitlement for all pupils whatever their own particular needs, preference or circumstances and is not limited to traditional team games which may not encourage an active lifestyle in some. Recent findings suggest that outdoor play makes a major contribution to children's overall level of physical activity. The national PE, School Sport and Club Links strategy has set ambitious targets to increase the amount of physical education and sport young people do. It is also helping bridge the gaps between school and community sport and opening up schools out of hours to provide additional sports opportunities for all children. A new national standard has been set for cycle training for children across England.	• PE teachers • Head teachers • School governors • Parents • Leisure services	• <i>Active play:</i> A 12-week, US-based intervention promoting active play supplementary to usual PE among 9-year-olds showed significant improvements in the intervention children compared with the controls, particularly among girls.²⁹ Another study reported that a small intervention over 14 months resulted in 5-7-year-old children in the intervention group being more active in the playground than the control group children.¹⁹ • <i>PE classes:</i> One study reported significant increases in moderate physical activity among female adolescents, particularly 'lifestyle' activity, at four-month follow-up, following the promotion of 60-minute PE classes five days a week and associated education classes.³⁰
<i>Promoting active travel plans</i> The government's Travelling to School action plan outlines a series of measures for national and local government and for schools to promote more walking, cycling and bus use on the journey to and from school. School travel plans will set out measures to make walking, cycling and bus use safe and attractive alternatives for the journey to school. By 2010 all schools should have active travel plans.	• Parents • Pupils • Teachers • Head teachers • School governors • Local authorities	There is good corroborative evidence from the UK that 'safer routes to school' schemes can be effective.³¹ A series of studies found that, when both school travel plans and safer routes to school programmes were in place, there was a 3% increase in walking, a 4% reduction in single-occupancy car use and a 1.5% increase in car sharing. Bus and cycle use remained largely static.³² Conversely, a selected series of case studies found an overall increase in cycle use and a decrease in car travel whereas the effects on walking and bus travel were variable.³³ Another scheme also found a considerable increase in walking and cycling to and from school three years after the intervention.³⁴

Continued on next page

Assessment	
<i>Identifying children who are overweight</i>	BMI measurement of school children by school nurses: • The Department of Health has developed guidance for PCTs on how to measure the height and weight of children aged between 4 and 11 years. All children in the Reception Year (ages 4-5 years) and Year 6 (ages 10-11 years) will be measured on an annual basis. The guidance is available at www.dh.gov.uk/obesity • School nurses • Head teachers • Parents • School governors • Community trusts • GPs • Practice nurses • Health visitors
WORKPLACE	
<i>Encouraging increased physical activity</i>	Employers, the government and trade unions all have a role to play in establishing environments that support healthy choices across a range of behaviours including better diet and increasing physical activity. Relatively low-cost, simple solutions have the potential to make a big difference – for example: in-house policies that encourage employees to integrate activity into their lives through flexible working practices; designing buildings to promote active choices such as the provision of secure cycle racks and showers; providing information on local facilities and walking maps; and simple changes such as signage to suggest using the stairs rather than the lift. • Employers • Employees • Health promotion specialist support • Dietitians • Occupational therapist A systematic review concluded that the use of workplace-based educational sessions and informative materials had significant effects on levels of physical activity.³⁵ Results from a systematic review support the implementation of worksite physical activity programmes.³⁶ The overall conclusion was that there was strong evidence for a positive effect of physical activity programmes on physical activity.
<i>Active travel plans</i>	There is evidence from a UK-based study³⁷ and a Finnish-based study³⁸ that workplace promotional strategies can increase the number of people travelling actively to work. • Employees • Employers • Planners • Local businesses
<i>Encouraging a healthy diet</i>	• <i>Healthier food provision:</i> One systematic review concluded that worksite intervention studies targeting healthier food provision by information strategies such as labelling and/or changes in food availability or cost can encourage healthier eating.³⁹ • <i>Incentives:</i> One study concluded that, when prices of low-fat snacks in 55 vending machines were reduced by 10%, 25% and 50%, the total number of items sold increased by 9%, 39% and 93%, respectively.⁴⁰ • Employees • Employers • Local businesses

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Dealing with overweight and obesity – Guidance for health professionals

Tool 17

This tool contains information about the guidance for health professionals on dealing with overweight and obesity produced by both NICE and the Department of Health.

NICE guideline on obesity – Clinical care pathways

NICE has developed clinical care pathways for children and adults for use by healthcare professionals. Further details can be found in *Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children*.¹ In addition, a summary of NICE recommendations and the clinical care pathways can be found in: *Quick reference guide 2 – For the NHS*,² which can be downloaded from the NICE website at www.nice.org.uk/guidance/CG43



Quick Reference Guide 2: For the NHS

This *Quick reference guide* summarises the recommendations that NICE has made for the NHS in the obesity guideline.

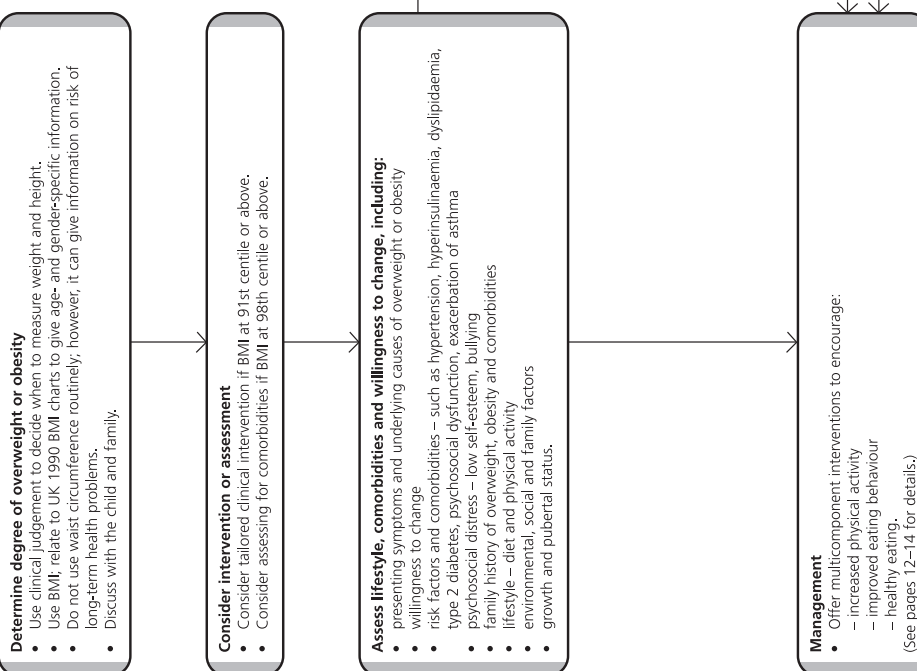
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Clinical care pathway for children

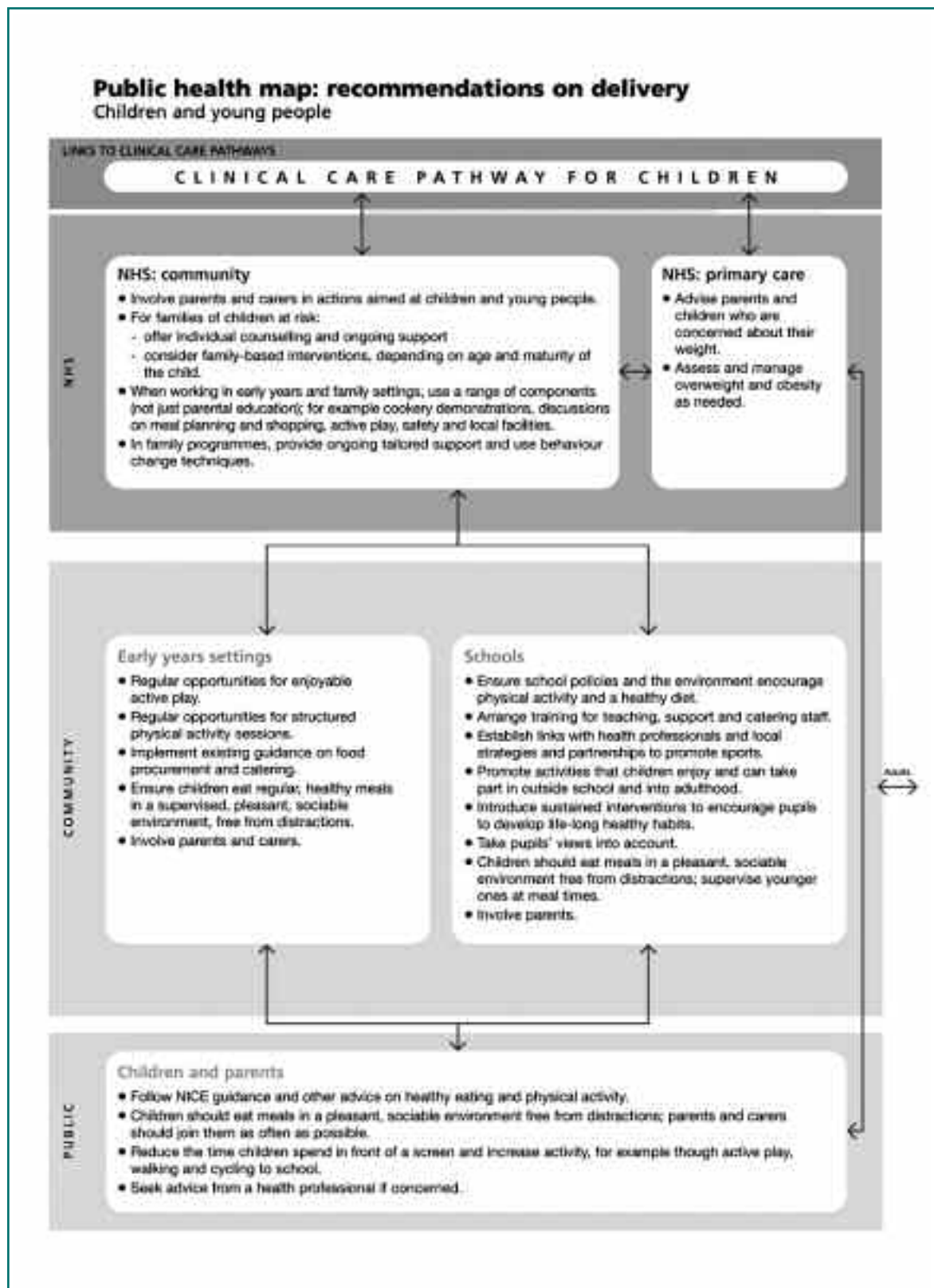
Management of overweight and obesity in children

Assessment and classification

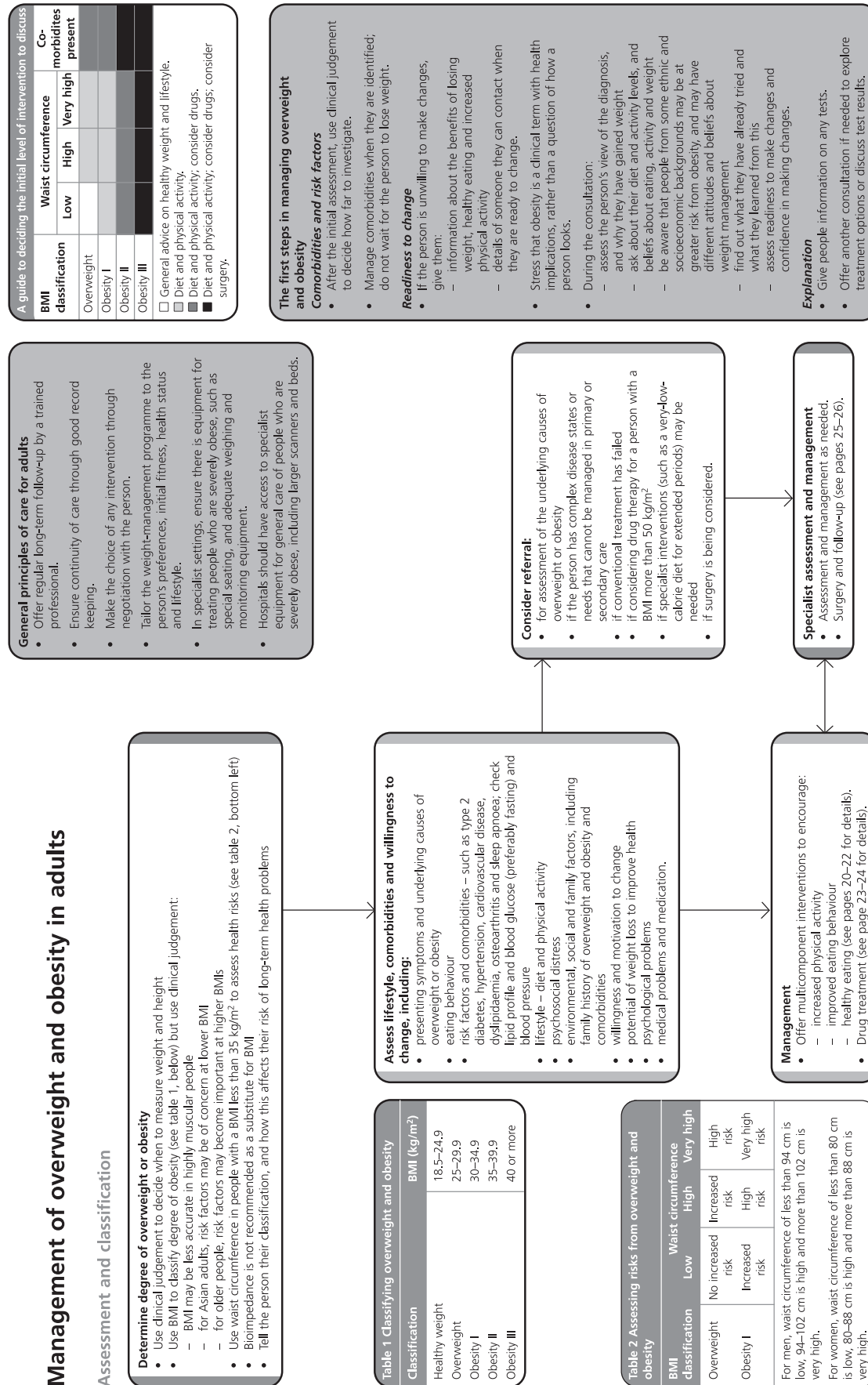


Note: Please refer to the NICE guideline for page references.

Public health map: Children and young people

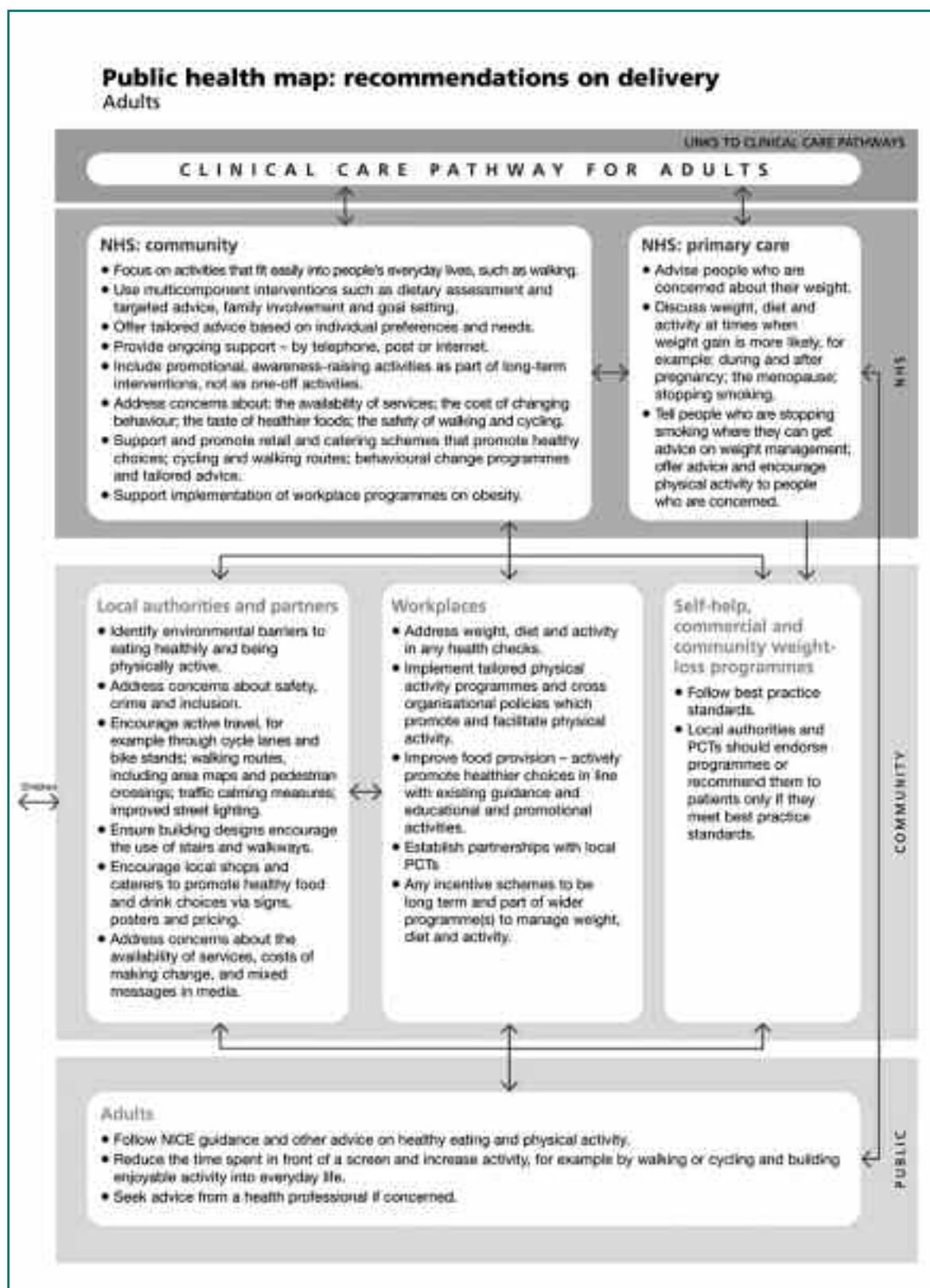


Clinical care pathway for adults

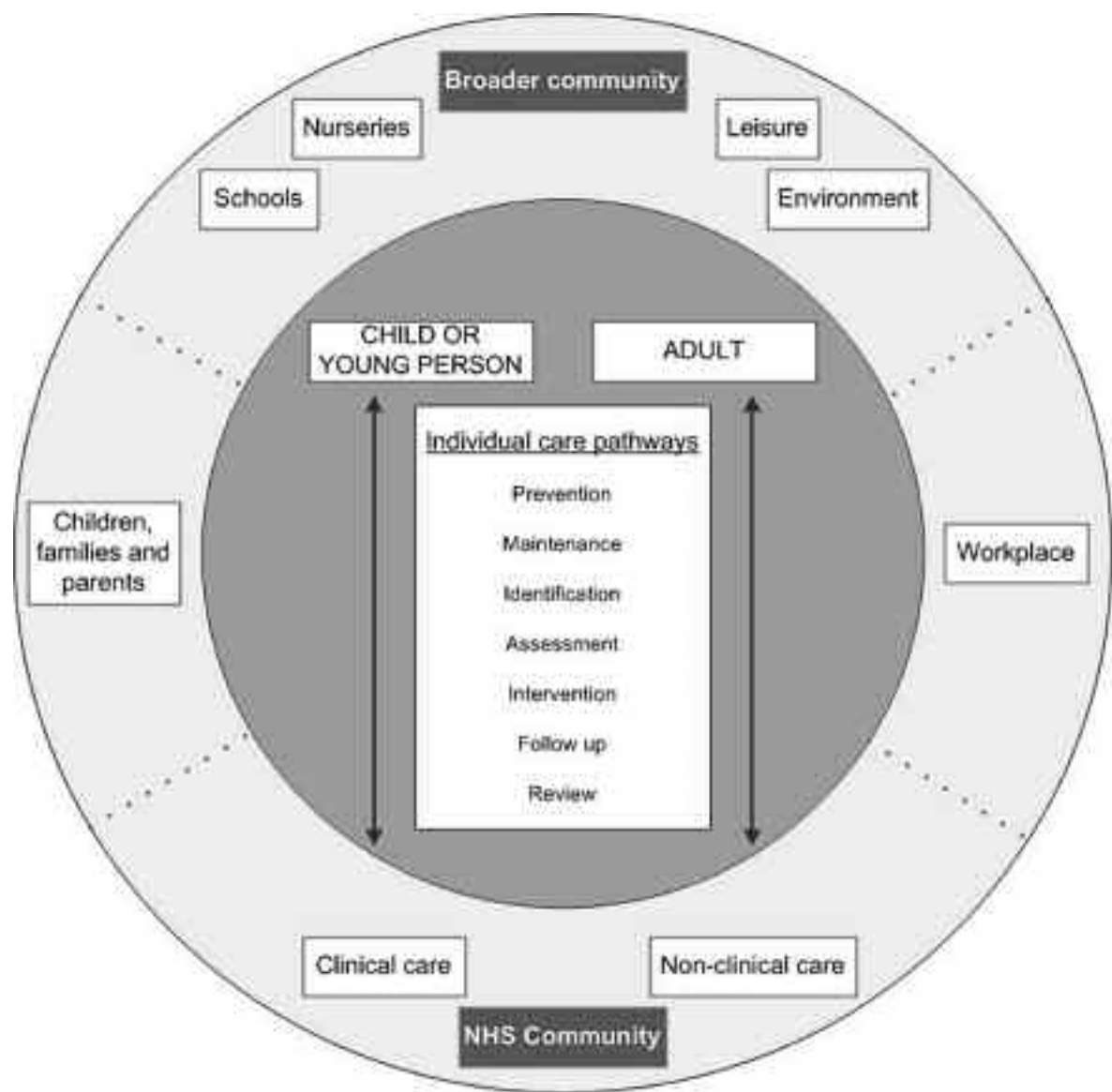


Note: Please refer to the NICE guideline for page references.

Public health map: Adults



Links between public health and clinical care



Care pathways from the Department of Health



Care pathway for the management of overweight and obesity

32-page booklet

This booklet offers evidence-based guidance to help primary care clinicians identify and treat children, young people (under 20 years) and adults who are overweight or obese.³ The booklet includes:

- Adult care pathway
- Children and young people care pathway
- Raising the issue of weight in adults
- Raising the issue of weight in children and young people.

The *Raising the issue of weight* tools provide tips on how to initiate discussion with patients.

The pathways are also available as separate laminated posters (see pages 168-169), and the *Raising the issue of weight* tools are also available as separate laminated cards (see pages 170-171).

To access these materials, visit www.dh.gov.uk/obesity or order copies from:

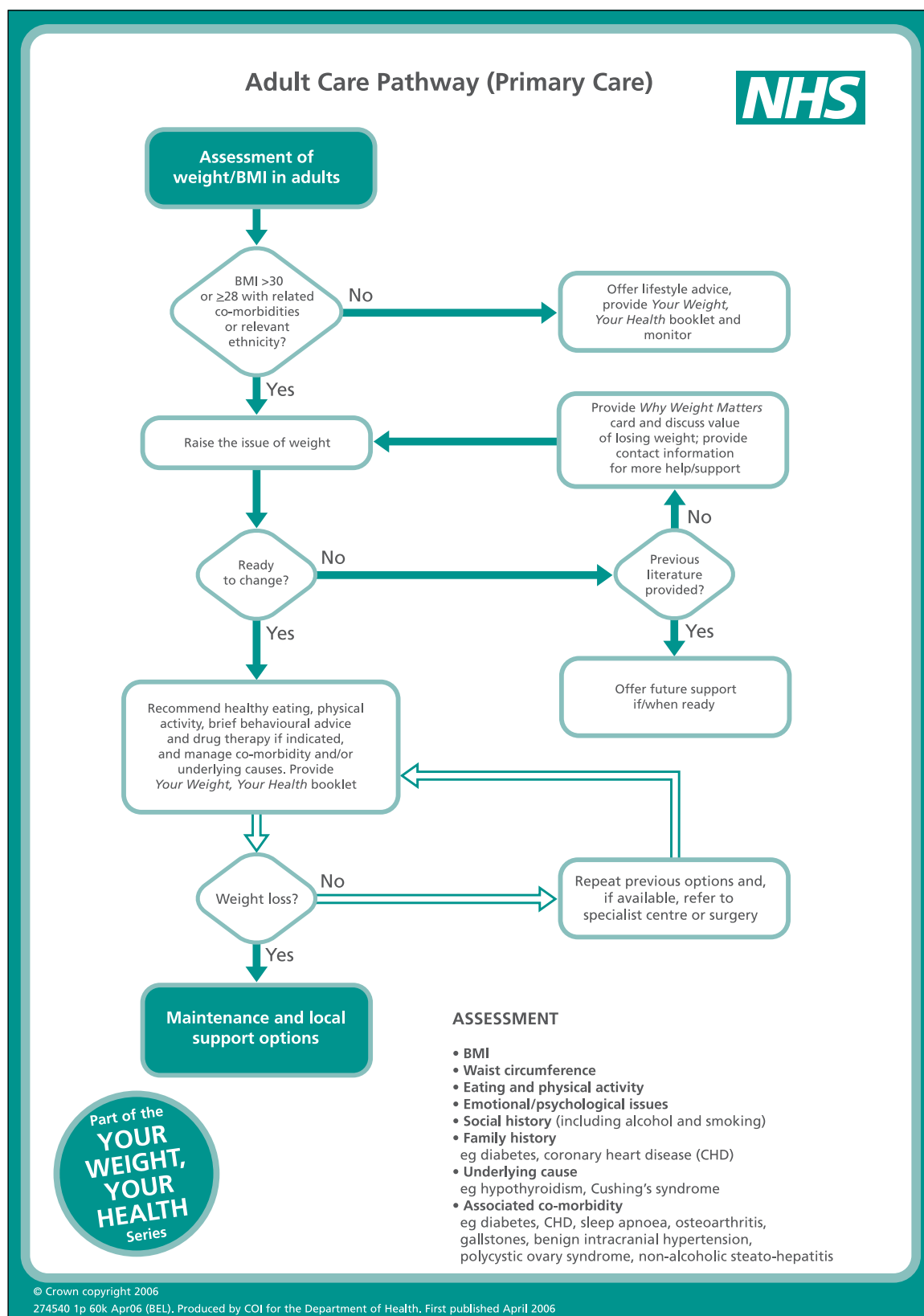
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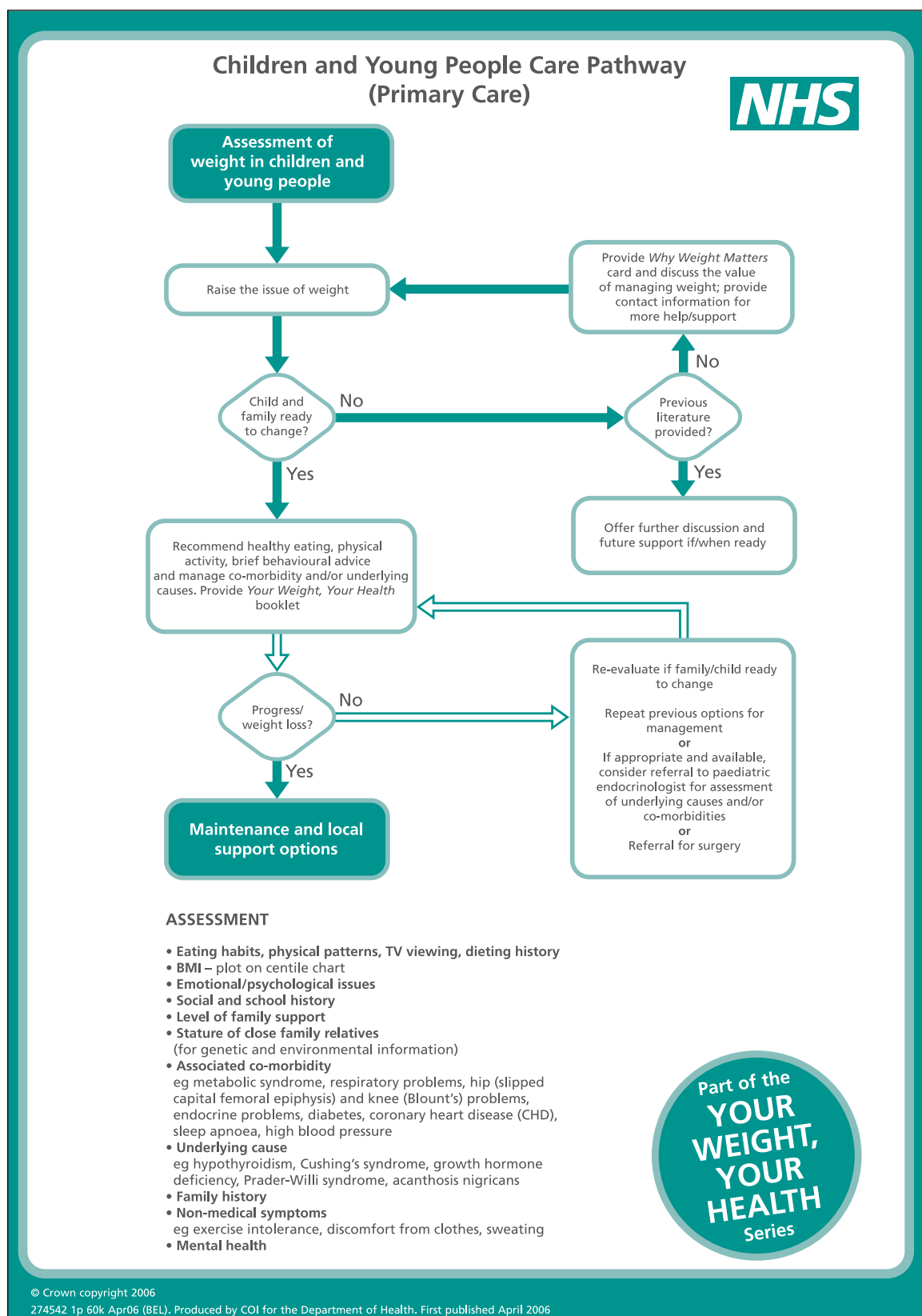
Adult care pathway

Laminated poster⁴ – available from Department of Health Publications (see page 167)



Children and young people care pathway

Laminated poster⁵ – available from Department of Health Publications (see page 167)



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Resources

Raising the issue of weight in adults

Laminated card⁶ – available from Department of Health Publications (see page 167)



Raising the Issue of Weight in Adults

Part of the
**YOUR
WEIGHT,
YOUR
HEALTH**
Series

1 RAISE THE ISSUE OF WEIGHT

If BMI is ≥ 25 and there are no contraindications to raising the issue of weight, initiate a dialogue: 'We have your weight and height measurements here. We can look at whether you are overweight. Can we have a chat about this?'

2 IS THE PATIENT OVERWEIGHT/OBESE?

BMI (kg/m ²)	Weight classification
<18.5	Underweight
18.5–24.9	Healthy weight
≥ 25 –29.9	Overweight
≥ 30	Obese

Using the patient's current weight and height measurements, plot their BMI with them and use this to tell them what category of weight status they are.

'We use a measure called BMI to assess whether people are the right weight for their height. Using your measurements, we can see that your BMI is in the [overweight or obese] category [show the patient where they lie on a BMI chart]. When weight goes into the [overweight or obese] category, this can seriously affect your health.'

WAIST CIRCUMFERENCE	
Increased disease risk	
Men	Women
≥ 40 inches (≥ 102 cm)	≥ 35 inches (≥ 88 cm)
Asian men	Asian women
≥ 90 cm	≥ 80 cm

Waist circumference can be used in cases where BMI, in isolation, may be inappropriate (eg in some ethnic groups) and to give feedback on central adiposity. In Asians, it is estimated that there is increased disease risk at ≥ 90 cm for males and ≥ 80 cm for females.

Measure midway between the lowest rib and the top of the right iliac crest. The tape measure should sit snugly around the waist but not compress the skin.

3 EXPLAIN WHY EXCESS WEIGHT COULD BE A PROBLEM

If patient has a BMI ≥ 25 and obesity-related condition(s):

'Your weight is likely to be affecting your [co-morbidity/condition]. The extra weight is also putting you at greater risk of diabetes, heart disease and cancer.'

If patient has BMI ≥ 30 and no co-morbidities: 'Your weight is likely to affect your health in the future. You will be at greater risk of developing diabetes, heart disease and cancer.'

If patient has BMI ≥ 25 and no co-morbidities: 'Any increase in weight is likely to affect your health in the future.'

4 EXPLAIN THAT FURTHER WEIGHT GAIN IS UNDESIRABLE

'It will be good for your health if you do not put on any more weight. Gaining more weight will put your health at greater risk.'

5 MAKE PATIENT AWARE OF THE BENEFITS OF MODEST WEIGHT/WAIST LOSS

'Losing 5–10% of weight [calculate this for the patient in kilos or pounds] at a rate of around 1–2lb (0.5–1kg) per week should improve your health. This could be your initial goal.'

If patient has co-morbidities: 'Losing weight will also improve your [co-morbidity].'

Note that reductions in waist circumference can lower disease risk. This may be a more sensitive measure of lifestyle change than BMI.

6 AGREE NEXT STEPS

- Provide patient literature and:
- If overweight without co-morbidities: agree to monitor weight.
 - If obese or overweight with co-morbidities: arrange follow-up consultation.
 - If severely obese with co-morbidities: consider referral to secondary care.
 - If patient is not ready to lose weight: agree to raise the issue again (eg in six months).

BACKGROUND INFORMATION

Raising the issue of weight
Many people are unaware of the extent of their weight problem. Around 30% of men and 10% of women who are overweight¹ believe themselves to be a healthy weight.¹ There is evidence that people become more motivated to lose weight if advised to do so by a health professional.²

Health consequences of excess weight
The table below summarises the health risks of being overweight or obese. In addition, obesity is estimated to reduce life expectancy by between 3 and 14 years. Many patients will be unaware of the impact of weight on health.

Greatly increased risk
• type 2 diabetes • gall bladder disease • dyslipidaemia • insulin resistance • breathlessness • sleep apnoea
Moderately increased risk
• cardiovascular disease • hypertension • osteoarthritis (knees) • hyperuricaemia and gout
Slightly increased risk
• some cancers (colon, prostate, post-menopausal breast and endometrial) • reproductive hormone abnormalities • polycystic ovary syndrome • impaired fertility • low back pain • anaesthetic complications

Benefits of modest weight loss⁴

Patients may be unaware that a small amount of weight loss can improve their health.

Condition	Health benefits of modest (10%) weight loss
Mortality	• 20–25% fall in overall mortality • 30–40% fall in diabetes-related deaths • 40–50% fall in obesity-related cancer deaths
Diabetes	• up to a 50% fall in fasting blood glucose • over 50% reduction in risk of developing diabetes
Lipids	• 10% fall in total cholesterol, 15% in LDL, and 30% in TG, 8% increase in HDL
Blood pressure	• 10 mmHg fall in diastolic and systolic pressures

Realistic goals for modest weight/waist loss (adapted from Australian guidelines)⁵

Duration	Weight change	Waist circumference change
Short term	2–4kg a month	1–2cm a month
Medium term	5–10% of initial weight	5% after six weeks
Long term	10–20% of initial weight	aim to be <88cm (females) aim to be <102cm (males)

Patients may have unrealistic weight loss goals.

The need to offer support for behaviour change
The success of smoking cessation interventions shows that, in addition to raising a health issue, health professionals need to offer practical advice and support. Rollnick et al suggest some ways to do this within the primary care setting. Providing a list of available options in the local area may also be helpful.⁶

Importance of continued monitoring of weight
Weight monitoring can be a helpful way of maintaining motivation to lose weight. Patients should be encouraged to monitor their weight regularly. Interventions for smoking cessation have found that behaviour change is more successful when follow-ups are included in the programme.

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Produced by COT for the Department of Health, First published April 2006

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Raising the issue of weight in children and young people

Laminated card⁷ – available from Department of Health Publications (see page 167)



Raising the Issue of Weight in Children and Young People

Part of the
**YOUR
WEIGHT,
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Series

1 WHEN TO INITIATE A DISCUSSION ABOUT WEIGHT

- If the family expresses concern about the child's weight.
- If the child has weight-related co-morbidities.
- If the child is visibly overweight.

2 RAISE THE ISSUE OF OVERWEIGHT

Discuss the child's weight in a sensitive manner because parents may be unaware that their child is overweight. Use the term 'overweight' rather than 'obese'. Let the maturity of the child and the child's and parents' wishes determine the level of child involvement.

If a parent is concerned about the child's weight:
'We have [child's] measurements so we can see if he/she is overweight for his/her age.'

If the child is visibly overweight:

'I see more children nowadays who are a little overweight. Could we check [child's] weight?'
If the child presents with co-morbidities:
'Sometimes [co-morbidity] is related to weight. I think that we should check [child's] weight.'

3 ASSESS THE CHILD'S WEIGHT STATUS

Refer to UK Child Growth Charts and plot BMI centile. Explain BMI to parent: eg 'We use a measure called BMI to look at children's weight. Looking at [child's] measurements, his/her BMI does seem to be somewhat higher than we would like it to be.'

If the child's weight status is in dispute, consider plotting their BMI on the centile chart in front of them. In some cases this approach may be inappropriate and upsetting for the family.

Overweight BMI centile ≥ 91 st centile	Severely overweight BMI centile ≥ 98 th centile
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4 ASSESS SERIOUSNESS OF OVERWEIGHT PROBLEM AND DISCUSS WITH PARENT

If child is severely overweight with co-morbidities, consider raising the possibility that their weight may affect their health now or in the future.

This could be left for follow-up discussions or raised without the child present as some parents may feel it is distressing for their child to hear.

'If their overweight continues into adult life, it could affect their health. Have either you (or child) been concerned about his/her weight? Consider discussing these points with the parent at follow-up:

- **Age and pubertal stage:** the older the child and the further advanced into puberty, the more likely overweight will persist into adulthood.
- **Parental weight status:** if parents are obese, child's overweight is more likely to persist into adulthood.
- **Co-morbidities:** (see overleaf) increase the seriousness of the weight problem

5 REASSURE THE PARENT/CHILD

If this is the first time that weight has been raised with the family, it is important to make the interaction as supportive as possible:

'Together, if you would like to, we can do something about your child's weight. By taking action now, we have the chance to improve [child's] health in the future.'

6 AGREE NEXT STEPS

Provide patient information literature, discuss as appropriate and:

- **If overweight and no immediate action necessary:** arrange follow-up appointment to monitor weight in three to six months: 'It might be useful for us to keep an eye on [child's] weight for the next year.'
- **If overweight and family want to take action:** offer appointment for discussion with GP nurse or other health professional; arrange three-to-six-month follow-up to monitor weight.
- **If overweight and family do not wish to take action now:** monitor child's weight and raise again in six months to a year.
- **If overweight with co-morbidities:** consider referral to secondary care: 'It might be useful for you and [child] to talk to someone about it.'

BACKGROUND INFORMATION

Identifying the problem

Ascertaining a child's weight status is an important first step in childhood weight management.

Parents who do not recognise the weight status of their overweight children may be less likely to provide them with support to achieve a healthy weight. In a British survey of parental perception of their child's weight, the overwhelming majority (94%) of parents with overweight or obese children misclassified their child's weight status.¹ Given this low level of parental awareness, health professionals should take care to establish a child's weight status in a sensitive manner.

Assessing weight status in children

The child growth charts for the UK allow easy calculation of BMI based on a child's known weight and height.² Measures of body fat in children can also be a useful way of assessing a child's weight status. Details of body fat reference curves for children are now available,³ although, in practice, body fat cannot be assessed without the necessary equipment.

Assessing the severity of the problem

A number of factors are known to increase the risk of childhood obesity and the likelihood that a weight problem will persist into adult life. Considering these factors will help you to make an informed decision about the most appropriate mode of action.

- The older the child, the more likely it is that their weight problem will continue into later life and the less time they have to 'grow into' their excess weight.
- A child is 20–40% more likely to become obese if one parent is obese. The figure rises to around 80% if both parents are obese.
- While weight problems can lead to psychosocial issues such as depression and low self-esteem, weight loss may not necessarily resolve these problems, so don't rule out referral to CAMHS.

Health risks of excess weight in childhood⁴

Being obese in childhood or adolescence increases the risk of obesity in adult life. Childhood obesity will also increase the chances of developing chronic diseases typically associated with adult obesity:

- insulin resistance and type 2 diabetes;
- breathing problems such as sleep apnoea and asthma;
- psychosocial morbidity;
- impaired fertility;
- cardiovascular disease;
- dyslipidaemia;
- hypertension;
- some cancers;
- orthopaedic complications.

Importance of weight control

For many overweight children, prevention of further weight gain is the main goal because as long as they gain no more weight, they can 'grow into' their weight over time. This goal can be achieved through lifestyle changes:

- improving the diet, eg by increasing fruit and vegetable consumption, reducing fat intake and portion sizes, considering intake of sugary drinks, and planning meals;
- increasing activity, eg playing football, walking the dog;
- reducing sedentary behaviours such as time spent watching TV or playing computer games. If the child is more severely overweight, or has already reached adolescence, 'growing into' weight is more difficult and weight loss has to be considered.

Need to offer solutions

Unless the child is severely overweight with co-morbidities, be led by the parents' and/or child's wishes. Encourage action if appropriate. Health professionals should be ready to offer referral support so that they are seen as taking the issue seriously. If the child is very overweight and has co-morbidities, the child (and family) may require on-going support despite referrals, eg through continued weight monitoring, additional specialist referrals, or help with family-based lifestyle modification.

¹Corvalán C et al (2005) Parental perceptions of overweight in 3–5 year olds. *Int J Obes* 29: 332–5.
²Cole TJ et al (2002) A chart to link child centiles of body mass index, weight and height. *Eur J Clin Nutr* 56: 1194–5.
³Wells J et al (2004) New body fat reference curves for children. *Obes Rev* 6: 105–12.
⁴McCallum Z and Gerner B (2005) Weighty matters: An approach to childhood overweight in general practice. *Aust Fam Phys* 34(9): 745–8.
British Medical Association Board of Science (2005) *Preventing Childhood Obesity*. BMA.

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References

- 1 National Institute for Health and Clinical Excellence (NICE) (2006) *Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children*. London: NICE. www.nice.org.uk/guidance/CG43
- 2 National Institute for Health and Clinical Excellence (NICE) (2006) *Quick reference guide 2 – For the NHS*. www.nice.org.uk/guidance/CG43
- 3 Department of Health (2006) *Care pathway for the management of overweight and obesity*. London: Department of Health
- 4 Department of Health (2006) *Adult care pathway (primary care)*. Laminated poster. London: Department of Health
- 5 Department of Health (2006) *Children and young people care pathway (primary care)*. Laminated poster. London: Department of Health
- 6 Department of Health (2006) *Raising the issue of weight in adults*. Laminated card. London: Department of Health
- 7 Department of Health (2006) *Raising the issue of weight in children and young people*. Laminated card. London: Department of Health

Losing weight – Information for patients

Tool 18

Both NICE and the Department of Health have produced information for patients. They are available at www.nice.org.uk/guidance/CG43 and www.dh.gov.uk/obesity respectively.

Information for patients – from NICE



Understanding NICE guidance – Treatment for people who are overweight or obese

This booklet is about NHS care and treatment in England and Wales of people who are overweight or obese.¹ It explains guidance from NICE. It is written for people who may need help with their weight problems but it may also be useful for their families or carers or anyone with an interest in obesity.



Understanding NICE guidance – Preventing obesity and staying a healthy weight

This booklet is about the prevention of obesity and staying a healthy weight, for people in England and Wales.² It explains the NICE guidance for health professionals, local authorities, schools, early years providers, employers and the public. It is written for people who want to know how to maintain a healthy weight, but it may also be useful for their families, carers or anyone else with an interest in obesity.

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Information for patients – from the Department of Health



Why weight matters

A leaflet for patients who are not yet committed to losing weight.³ It discusses the risks associated with overweight, the benefits of modest weight loss, and practical tips for people to consider.

To download a copy of this publication, visit
www.dh.gov.uk/assetRoot/04/13/44/16/04134416.pdf



Your weight, your health: How to take control of your weight

A booklet for patients who are ready to think about losing weight.⁴

To download a copy of this publication, visit
www.dh.gov.uk/assetRoot/04/13/44/19/04134419.pdf

Copies of these two items can be ordered from:
Department of Health Publications Orderline
PO Box 777
London SE1 6XH
E: dh@prolog.uk.com
T: 08701 555 455
F: 01623 724 524
Textphone: 08700 102 870 (Monday to Friday 8am-6pm)

References

- 1 National Institute for Health and Clinical Excellence (NICE) (2006) *Understanding NICE guidance – Treatment for people who are overweight or obese*. London: NICE. www.nice.org.uk/guidance/CG43
- 2 National Institute for Health and Clinical Excellence (NICE) (2006) *Understanding NICE guidance – Preventing obesity and staying a healthy weight*. London: NICE. www.nice.org.uk/guidance/CG43
- 3 Department of Health (2006) *Why weight matters*. London: Department of Health
- 4 Department of Health (2006) *Your weight, your health. How to take control of your weight*. London: Department of Health

Setting up a 'weight management on referral' scheme

Tool 19

This tool describes a process for establishing a weight management on referral scheme (or 'slimming on referral' scheme) within a primary care trust (PCT). The scheme can also be run by other health teams such as Sure Start, secondary care and individual GP practices.

Weight management or slimming 'on referral' operates by health care teams purchasing membership and attendance credits from commercial slimming organisations. A referral timeframe is agreed and patients are provided with membership and credits to cover this period. At the end of the initial referral period, the health care team may decide to make continuation credits available, or patients may decide to self-fund their continued attendance at the group.

1 Find out more about weight management on referral.

- Identify and contact a commercial slimming organisation to work with.
- Arrange a meeting with the organisation to discuss the planning process.
- The organisation will usually identify a local representative who will offer you ongoing support.

2 Prepare and present your proposal for funding.

- Identify interest and support among colleagues within the PCT or health community. Consider those with budgetary concerns such as pharmacy advisers, public health, GPs and commissioners. Draw up a contact list.
- Assemble local figures for weight-related morbidities and mortality, including the costs of intervention and pharmacology – for example, the local costs of anti-obesity, anti-hypertensive and hypoglycaemic medication, or weight management groups run at a local level.
- Put together a proposal to include the benefits to public health, local budgets, and primary care time, and the benefits to the patients themselves.
- Present the proposal to budget-holders. Suggested funding sources include practice-based commissioning, pharmaceutical budgets, government or EU health improvement or inequalities funding such as Neighbourhood Renewal, Sure Start or Fit for the Future.
- Engage with other members of the primary health care team to ensure that a wide range of staff are able to comment on the proposals and feel they have ownership of the scheme. This will also ensure that there is extensive knowledge about the existence of the scheme once it is running.

3 Starting a referral scheme

PCT administration

- Agree with the commercial slimming organisation how credits will be purchased and paid for.
- Set criteria for patients to be enrolled on the scheme – for example, the criterion might be that the scheme is for patients with a BMI of 30kg/m² or above, or there

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may be other criteria that fit in with the funding source. For example, you may choose to select people with impaired glucose tolerance. (It may then be possible to compare that group with a control group and find out how many of each group went on to develop diabetes, thus identifying potential savings on pharmacology.)

- Ensure that there are guidelines for referrers about the need to discuss weight management with the patient and establish whether they want to lose weight, and are ready to make diet and lifestyle changes and commit to the service. Consider the need to have a 'written contract' between patient and referrer. People will not automatically join groups if they are given membership and credits by the health care team – they need to be ready and willing to make the commitment and may need support and reassurance to do this. It is therefore important for the referrer to discuss this with the patient and establish readiness to change.
- Ensure staff involved are fully trained in the service and procedures.
- Produce a patient information sheet.
- Identify suitable patients and get any consent necessary for your use of data.
- Identify a member of the PCT or practice staff who will lead and coordinate the scheme and liaise with the commercial slimming organisation.

Support from the commercial slimming organisation

The commercial slimming organisation will agree with the PCT a level of support which the PCT can expect to receive. This can include:

- helping the PCT to develop procedures
- providing help with training staff
- identifying a representative who will be the main point of contact for the PCT
- providing weekly group support for ongoing weight management
- providing support in changing diet and activity habits
- providing regular monitoring of patients' progress and report on patients' weight change and attendance to the referral team.

Before the scheme starts

Before the scheme starts, the following points must also be agreed.

- The times and places of meetings that patients can attend.
- The level of flexibility provided. For example, would extensions be made available to vouchers to cover illness and holidays?
- The amount of contact and support that the patient will receive from the organisation.
- The form that the credits will take. If vouchers are used by patients, will these identify them as participating via a referral scheme to other group members – ie could there be some form of stigmatisation attached to the vouchers?

Any contract between a health care team and a commercial slimming organisation needs to be considered extremely carefully.

Note: See also *NICE guidance on weight management on referral schemes*, on page 74.

Proforma for developing a local action plan for the prevention and management of overweight and obesity

Tool 20

INTERVENTION	DELIVERABLE(S)	LEAD PARTNER	PARTNERS	TIMESCALE	DEADLINE
HOME					
<i>eg</i> Breastfeeding advice					
<i>eg</i> Healthy eating advice for young families					
SCHOOL					
<i>eg</i> Teaching about healthy eating					
<i>eg</i> Providing healthy meals					
<i>eg</i> Encouraging uptake of physical activity and sports					
WORKPLACE					
<i>eg</i> Providing healthy meals					
<i>eg</i> Workplace travel plans					

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INTERVENTION	DELIVERABLE(S)	LEAD PARTNER	PARTNERS	TIMESCALE	DEADLINE
COMMUNITY					
<i>eg</i> Healthy eating campaigns					
<i>eg</i> Physical activity campaigns					
<i>eg</i> Weight control groups					
PRIMARY CARE					
<i>eg</i> Healthy eating advice					
<i>eg</i> Physical activity advice					
<i>eg</i> Identifying overweight and obese patients					
<i>eg</i> Referral to commercial slimming clubs					
<i>eg</i> Exercise referral					
HOSPITAL					
<i>eg</i> Surgical management of extreme obesity					

Ways of involving patients and the public in tackling overweight and obesity

Tool 21

Patient and public involvement is now a core part of health service development and decision-making. Without it, truly responsive services cannot be delivered. This tool outlines the benefits of public and patient participation in developing a local overweight and obesity strategy, as well as the statutory requirements.

Benefits

Patient and public involvement has the following benefits:

- It informs the development of improved patient-centred services and service delivery.
- It increases patient satisfaction, through a sense of greater involvement and being listened to.
- Engagement in developing appropriate care plans and services can increase concordance.
- It improves relationships, through increased understanding and trust between, on the one hand, managers and professionals, and on the other, patients, carers and the public.
- It helps to provide services which are culturally sensitive and appropriate, and which are tailored to an individual's particular needs.
- It helps to inspire change and innovation in service delivery.
- It helps to build solid community partnerships.
- It demonstrates a willingness by organisations to be held more accountable to patients and the public.
- It meets statutory requirements.

Statutory requirements for patient and public involvement

Key policy drivers include:

- Health and Social Care Act 2001 (www.opsi.gov.uk/acts/acts2001/20010015.htm)
- The NHS Plan (www.dh.gov.uk/assetRoot/04/05/57/83/04055783.pdf)
- Priorities and Planning Framework 2003-2006 (www.dh.gov.uk/assetRoot/04/07/02/02/04070202.pdf)
- Local authorities also have a duty to scrutinise the local NHS.

Performance assessment

Patient and public involvement processes are subject to performance assessment through bodies such as the Healthcare Commission. For more information about inspections visit: www.healthcarecommission.org.uk/AboutUs/HowDoWeWork/fs/en

Ways of involving the public and patients

- Individual feedback or contributions to care plans
- Consultation and formal evaluation of services
- Focus groups for feeding back thoughts and feelings on services
- Project working groups

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- Patient forums
- Planning groups
- Patient Environment Action Teams (PEAT)
- Expert Patients Programme
- Patient Advocacy and Liaison Services
- Independent Complaints Advocacy Services
- Commission for Patient and Public Involvement in Health
- Patient and Public Involvement Forums
- Voluntary and charity organisations
- Independent Local Authority Forums
- Local healthcare cooperatives

For more information

Commission for Patient and Public Involvement in Health

www.cppih.org

The Commission's role is to make sure the public is involved in decision-making about health and health services in England through Patient and Public Involvement (PPI) Forums – one for each NHS Trust.

Department of Health

www.dh.gov.uk/PolicyAndGuidance/OrganisationPolicy/PatientAndPublicInvolvement/fs/en

Provides policy documents and guidance on how the public should take a role in shaping the development of the care system, and how patients should be kept well informed of clinical processes and decisions.

Medicines Partnership

www.npc.co.uk/med_partnership

This is an initiative supported by the Department of Health, aimed at enabling patients to get the most out of medicines, by involving them as partners in decisions about treatment and supporting them in medicine-taking.

Monitoring and evaluation – Research and evaluation toolbox

Tool 22

The *Research and evaluation toolbox* was produced by the Health Education Board for Scotland (HEBS – www.hebs.com/research/retool) to help practitioners in health and related fields think through how research can help them in planning and evaluating their work. It was developed in response to the clear need expressed by practitioners for advice in this area and builds on HEBS' experience of doing, commissioning and using research and evaluation across a range of settings, topics and population groups.

The Toolbox won't give ready-made answers to specific problems but it will offer helpful tips and general guidance on using research in project development and evaluation. These can easily be adapted to specific situations. It is also a gateway to useful resources produced by others in Scotland and beyond.

Who is it for?

The Toolbox has been developed primarily to help professionals working to improve public health. It is in particular for those who have a basic understanding of research and evaluation but no specialist expertise. The resource is open to everyone following a brief registration process.

What's in it?

MAIN SECTIONS	BRIEF DESCRIPTION
Why research?	The role of research and evaluation at different stages in the planning and development of health initiatives.
Methods	How research questions shape research design and what research methods might be used.
Data sources	Health and related information available from national surveys and other sources.
Reviews	Why and how to carry out reviews of published research and other literature.
Needs assessment	Why and how to assess health needs in a population when planning an initiative.
Evaluation	Forms of evaluation relevant at each stage in programme planning and development.
Quality	Different quality assurance systems concerned with improving performance and raising standards.
Commissioning	Procedures for buying in research and evaluation services and for managing commissioned research.
Dissemination	Strategies for communicating research findings and improving research impact.
Funding	Information and links regarding sources of funding for health and related research.
Links and references	Links to websites and key references from each toolbox section.

Source: Reproduced from www.hebs.com/research/retool

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For more information

NATIONAL POLICY DRIVERS

Government health priorities, standards and targets related to tackling overweight and obesity

NATIONAL STRATEGIES

Choosing health: Making healthy choices easier (2004)

www.dh.gov.uk

Choosing health is a national strategy for improving health in England, focusing mainly on individual lifestyle changes, supported by fiscal, legislative, environmental, commercial and other changes to encourage, enable and empower the individual.

Delivering Choosing health: Making healthier choices easier (2005)

www.dh.gov.uk

Delivering Choosing health sets out the key steps that need to be taken over the three years 2005-2008 to deliver the white paper commitments. Tackling obesity is one of the key priorities.

Our health, our care, our say: A new direction for community services (2006)

www.dh.gov.uk

Our health, our care, our say is a national strategy for improving the whole health and social care system in England. There are four main goals: to provide better prevention services with earlier intervention, to improve access to social and primary care, to tackle inequalities and improve access to community services, and to provide better support for people with long-term needs.

Supporting Department of Health strategies

Choosing a better diet: A food and health action plan (2005)

www.dh.gov.uk

The aim of the action plan is to improve health in England by reducing the prevalence of diet-related disease, and to reduce obesity in England by improving the nutritional balance of the average diet.

Choosing activity: A physical activity action plan (2005)

www.dh.gov.uk

The aim of the plan is to promote activity for all, in accordance with the evidence and recommendations set out in the Chief Medical Officer's report *At least five a week* (see below).

At least five a week: Evidence on the impact of physical activity and its relationship to health (2004)

www.dh.gov.uk

This report of the Chief Medical Officer is aimed at those concerned with formulating and implementing policies or programmes that use the promotion of physical activity, sport, exercise and active travel to achieve health gain.

Tackling health inequalities: A programme for action (2003)

www.dh.gov.uk

This programme for action sets out plans to tackle health inequalities. It establishes the foundations required to achieve the challenging national target for 2010 to reduce the gap in infant mortality across social groups, and raise life expectancy in the most disadvantaged areas faster than elsewhere.

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Cross-government strategies and guidance that support tackling overweight and obesity

Strategy Unit

Game plan: A strategy for delivering government's sport and physical activity objectives (2002)

www.number-10.gov.uk

Game plan highlighted the benefits of physical activity on health, stating that 30 minutes of moderate activity five times a week can help reduce the risk of cardiovascular diseases, some cancers, and obesity.

Sport England

Sport playing its part (2005)

www.sportengland.org

A series of publications aimed at guiding and supporting policy makers and practitioners through the contribution sport can make in supporting the delivery of local community priorities and shared priorities of central and local government.

Department for Education and Skills and Department for Culture, Media and Sport

Learning through PE and school sport (2003)

www.culture.gov.uk

This report sets out the national PE, School Sport and Club Links strategy. The overall objective of the strategy is to enhance the take-up of sporting opportunities by 5-16 year olds.

Learning through PE and sport – An update on the strategy (2004)

www.teachernet.gov.uk

Department for Work and Pensions, Department of Health, and Health and Safety Executive

Health, work and well-being - Caring for our future: A strategy for the health and well-being of working age people (2005)

www.dwp.gov.uk

This report sets out a strategy to improve the health and wellbeing of the working age population. One action on healthy workplaces is to develop a cross-government campaign on obesity, raising awareness of the steps people can take through diet and physical activity to prevent obesity.

Office of the Deputy Prime Minister

Sustainable communities: People, places and prosperity. A five year plan from the Office of the Deputy Prime Minister (2005)

www.communities.gov.uk

This report sets out a programme to promote good governance, empower communities, tackle disadvantage and make places cleaner, safer and greener.

Department for Transport

Walking and cycling: An action plan (2004)

www.dft.gov.uk

This report looks at ways to encourage people to choose to walk and cycle more often.

Cross-government

Every child matters: Change for children (2004)

www.everychildmatters.gov.uk

Every child matters: Change for children sets out the national framework for local change programmes to build services around the needs of children and young people so that we maximise opportunity and minimise risk.

Department for Education and Skills

Every child matters (2003)

www.everychildmatters.gov.uk

The green paper outlines the government's commitment to improving outcomes for all children and young people, including the most disadvantaged.

NATIONAL PREVENTION PROGRAMMES – HEALTHY EATING

Sure Start

www.surestart.gov.uk

Sure Start is a government programme which aims to achieve better outcomes for children, parents and communities by:

- increasing the availability of childcare for all children
- improving health and emotional development for young children
- supporting parents as parents and in their aspirations towards employment.

Healthy Start

www.dh.gov.uk

The Department of Health website contains information about Healthy Start, which replaces the Welfare Food Scheme.

Food in Schools

www.foodinschools.org

The Food in Schools programme is a joint venture between the Department of Health and the Department for Education and Skills. A whole range of nutrition-related activities and projects are being developed as part of the programme, to complement and add value to existing healthier food initiatives in schools. The website contains the *Food in Schools toolkit* which has been sent to PCTs (see page 66).

Wired for Health

www.wiredforhealth.gov.uk

Wired for Health is a series of websites managed by NICE on behalf of the Department of Health and the Department for Education and Skills. It provides health information for a range of audiences about the National Curriculum and the National Healthy Schools Programme.

5 A DAY

www.5aday.nhs.uk

The 5 A DAY programme is a key feature of the prevention strategies to reduce early deaths from cancer and coronary heart disease and reduce health inequalities. The programme aims to increase fruit and vegetable consumption. The website includes information on the School Fruit and Vegetable Scheme, information about 5 A DAY locally, and information for health professionals and partners interested in using the 5 A DAY logo.

Better Hospital Food Programme

www.betterhospitalfood.com

This website contains best practice guidance, resources and background information to support the delivery of healthier food in NHS healthcare facilities. The site aims to be easy to use for all catering professionals, healthcare staff and patients.

NATIONAL PREVENTION PROGRAMMES – PHYSICAL ACTIVITY

Active England

www.sportengland.org

A jointly funded programme between the Big Lottery Fund and Sport England to encourage creative approaches to drive up physical activity levels and sports participation rates in England.

Inclusive Fitness Initiative (Sport England)

www.inclusivefitness.org

This initiative provides disabled people with access to gyms. The website offers information about how to get involved.

Local Exercise Action Pilots (LEAP)

www.dh.gov.uk

These are locally run pilot programmes to test and evaluate new ways of encouraging people to take up more physical activity. The website provides further information about the pilots.

PE, School Sport and Club Links (PESSCL) www.teachernet.gov.uk/pe	A joint initiative of the Department for Culture, Media and Sport and the Department for Education and Skills to implement a national strategy for school sport.
Safe Routes to School (Sustrans) www.saferoutestoschool.org.uk	Sustrans works on practical projects to encourage people to walk, cycle and use public transport for health, safety and environmental reasons. Their aim is to create a Safe Route to School for every child in the UK. The website provides information about ways to get involved.
Walking the Way to Health www.whi.org.uk	An initiative of the Countryside Agency and the British Heart Foundation which promotes walking. Pedometers are promoted to raise people's awareness of the amount of physical activity they undertake.

STANDARDS AND TARGETS

Local Delivery Plans

National standards, local action: Health and social care standards and planning framework 2005/06-2007/08 (2004) www.dh.gov.uk	<i>National standards, local action</i> sets out the framework for all NHS organisations and social service authorities to use in planning over the three financial years from 2005/06 to 2007/08.
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Public Service Agreements (PSAs) www.hm-treasury.gov.uk

2003-2006 (2002 Spending review)

Department of Health Improvement, expansion and reform: The next 3 years' priorities and planning framework, 2003-2006 www.dh.gov.uk	This document set out what organisations such as primary care trusts had to do from 2003 to 2006. It identified national priorities and targets which organisations needed to build into their local plans.
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2005-2008 (2004 Spending review)

Department of Health	Public Service Agreements (PSAs) developed in 2002 were strengthened and refined in 2004 in line with the conclusions of the Devolving Decision Making review. Although the PSA for the Department of Health aim above has been carried forward, the objectives and performance targets have been modified.
Department for Culture, Media and Sport	- Objective 1: Further enhance access to culture and sport for children and give them the opportunity to develop their talents to the full and enjoy the full benefits of participation. - Objective 2: Increase and broaden the impact of culture and sport, to enrich individual lives, strengthen communities and improve the places where people live, now and for future generations.
Office of the Deputy Prime Minister	Objective 5: Ensure people have decent places to live by improving the quality and sustainability of local environments and neighbourhoods, reviving brown field land, and improving the quality of housing.

National Service Frameworks

National Service Framework for children, young people and maternity services (2004)

www.dh.gov.uk

This National Service Framework (NSF) sets out a 10-year programme for sustained improvement in children's health and wellbeing through setting standards for the care of children, young people and maternity services. There are 11 standards of which standard 1 – promoting health and wellbeing, identifying needs and intervening early – is relevant to tackling obesity.

Supporting local delivery – Every child matters: Change for children in health services (2004)

www.dh.gov.uk

The NSF forms an integral part of the *Every child matters: Change for Children* programme that will, as it is implemented (by PCTs, local authorities and other partners), contribute to the achievement of improved outcomes for children, young people and pregnant women.

National Service Framework for diabetes (2001) Diabetes Delivery Strategy (2003)

www.dh.gov.uk

The NSF for diabetes sets out 12 national standards for the treatment of diabetes to raise the quality of NHS services and reduce unacceptable variations between them. Standards 1, 3 and 4 are relevant to obesity.

National Service Framework for older people (2001)

www.dh.gov.uk

The NSF for older people sets out eight national standards and service models of care across health and social services for all older people, whether they live at home or in residential care or are being looked after in hospital. Standard 8, which aims to extend the healthy life expectancy of older people, is relevant to tackling obesity.

National Service Framework for coronary heart disease (2000)

www.dh.gov.uk

The NSF for coronary heart disease sets out a strategy to modernise coronary heart disease services over 10 years. It details 12 standards for improved prevention, diagnosis, treatment and rehabilitation, and goals to secure fair access to high-quality services. Standards 1 (reducing heart disease in the population), 3 and 4 (preventing cardiac events in high risk patients) and 12 (cardiac rehabilitation) are relevant to tackling obesity.

OTHER POLICY DRIVERS

Wanless reports (2002, 2004)

Securing our future health: Taking a long-term view (2002)

www.hm-treasury.gov.uk

This report quantified the financial and other resources required to ensure the NHS could provide a publicly-funded, comprehensive, high-quality service available on the basis of clinical need and not ability to pay. This review concluded that the UK needed to devote significantly more money to health care over a 20-year period to catch up with the best developed countries, and that how those resources are used is the key to success.

Securing good health for the whole population: Final report (2004)

www.hm-treasury.gov.uk

Having accepted and acted on the first report, the government called for a second report focusing on prevention and the wider determinants of health, and requesting recommendations on how to implement cost-effective approaches to improving health, prevention, and reducing inequalities in health in this fully engaged scenario.

General Medical Services (GMS) contract (2006)

Standard GMS contract (2006)

www.dh.gov.uk and
www.nhsemployers.org

The GMS contract is designed to reward those GPs who wish to offer higher standards of care and a wider range of services to patients. Practice services under this contract will be categorised under three headings – essential, additional and enhanced services.

NOTE: The GMS Contract Regulations have been amended by the NHS Regulations 2006. As a result, the standard GMS contract (2003) has been redrafted. This document supersedes the earlier document.

Revisions to the GMS contract, 2006-07: Delivering investment in general practice

www.nhsemployers.org

This document gives primary care organisations and practices an overview of the changes to the GMS contract for 2006/07 to support implementation.

Quality and Outcomes Framework (QOF)

(2003; updated in 2004; revised in 2006)
www.nhsemployers.org

The national Quality and Outcomes Framework (QOF) was developed as an integral part of the GMS contract introduced across the UK in 2004.

With regards to overweight and obesity, the QOF offers 3 points to GP surgeries for recording BMI for patients with type 2 diabetes:

DM2: The percentage of patients with diabetes whose notes record BMI in the previous 15 months (3 points; maximum threshold 25-90%).

The 2006 revisions include the introduction of nine new QOF areas and indicators. Of specific interest is the addition of obesity as a new QOF area, offering 8 points to GP surgeries for producing a register of patients who are obese:

OBESEITY 1: The practice can produce a register of patients aged 16 years and over with a BMI greater than or equal to 30kg/m² in the last 15 months.

Quality Management and Analysis System (QMAS)

www.connectingforhealth.nhs.uk

The QMAS is a new national system, used by PCTs and SHAs involved in the QOF, which will manage payment for achievement at year end for GP practices. QMAS was updated in 2006 to support the 2006-07 GMS contract revisions.

NOTE: For more information on the revisions to the GMS contract, see *Revisions to the GMS contract, 2006-07*, at www.nhsemployers.org.

USEFUL ORGANISATIONS AND WEBSITES

Alcohol Concern

www.alcoholconcern.org.uk

American Heart Association (AHA)

www.americanheart.org

Arthritis Research Campaign (ARC)

www.arc.org.uk

Association for the Study of Obesity (ASO)

www.aso.org.uk

Association of Breastfeeding Mothers

www.abm.me.uk

Asthma UK

www.asthma.co.uk

Australasian Society for the Study of Obesity (ASSO)

www.asso.org.au

British Association of Sport and Exercise Sciences (BASES)

www.bases.org.uk

British Cardiac Society

www.bcs.com

British Dietetic Association (BDA)

www.bda.uk.com

British Heart Foundation (BHF)

www.bhf.org.uk

British Heart Foundation National Centre for Physical Activity and Health (BHFNC)

www.bhfactive.org.uk

British Nutrition Foundation (BNF)

www.nutrition.org.uk

British Obesity Surgery Patient Association (BOSPA)

www.bospa.org

British Trust for Conservation Volunteers (BTCV)

www.btcv.org

Cancer Research UK

www.cancerresearch.org.uk

Central Council for Physical Recreation

www.ccpr.org.uk

Child Growth Foundation

www.childgrowthfoundation.org

Children's Play Council

www.ncb.org.uk/cpc

Cleaner Safer Greener Communities

www.cleanersafergreener.gov.uk

Communities and Local Government

www.communities.gov.uk

Community Practitioners' and Health Visitors' Association (CPHVA)

www.msfcphva.org

The Counterweight Programme

www.counterweight.org

Cycling England (previously the National Cycling Strategy Board)

www.cyclingengland.co.uk

Department for Culture, Media and Sport

www.culture.gov.uk

Department for Education and Skills

www.dfes.gov.uk

Department for Transport

www.dft.gov.uk

Department of Health

www.dh.gov.uk

Diabetes UK

www.diabetes.org.uk

Dietitians in Obesity Management (UK) – DOM (UK)

www.domuk.org

European Association for the Study of Obesity (EASO)

www.easooesity.org

European Childhood Obesity Group

www.childhoodobesity.net

European Commission (Health and Consumer Protection Directorate-General)

europa.eu.int/comm/dgs/health_consumer/index_en.htm

The European Men's Health Forum (EMHF)

www.emhf.org

Faculty of Public Health

www.fph.org.uk

Fitness Industry Association (FIA)

www.fia.org.uk

The Food Commission

www.foodcomm.org.uk

Food Standards Agency

www.food.gov.uk
www.eatwell.gov.uk

Foresight

www.foresight.gov.uk

D

Resources

Free Swimming

www.freeswimming.org

Heart UK

www.heartuk.org.uk

International Association for the Study of Obesity (IASO)

www.iaso.org

International Diabetes Federation

www.idf.org

International Obesity Taskforce (IOTF)

www.ietf.org

Local Government Association (LGA)

www.lga.gov.uk

Maternity Alliance

www.maternityalliance.org.uk

MEND Programme

www.mendprogramme.org

Men's Health Forum

www.menshealthforum.org.uk

National Heart Forum

www.heartforum.org.uk

National Institute for Health and Clinical Excellence (NICE)

www.nice.org.uk

National Institutes of Health (NIH)

www.nih.gov

National Obesity Forum (NOF)

www.nationalobesityforum.org.uk

National Social Marketing Centre

www.nsms.org.uk

North American Association for the Study of Obesity (NAASO), The Obesity Society

www.naaso.org

Nutrition Society

www.nutrition society.org

Obesity Management Association (OMA)

www.omaorg.com

Office for National Statistics (ONS)

www.statistics.gov.uk

The Overweight and Obesity Organization

www.oo-uk.org

PE, School Sport and Club Links (PESSCL)

www.teachernet.gov.uk/pe

Register for Exercise Professionals (REPS)

www.exerciseregister.org

Royal College of General Practitioners

www.rcgp.org.uk

Royal College of Midwives

www.rcm.org.uk

Royal College of Nursing

www.rcn.org.uk

Royal College of Paediatrics and Child Health

www.rcpch.ac.uk

Royal College of Physicians of London

www.rcplondon.ac.uk

Royal Institute of Public Health

www.riph.org.uk

Royal Pharmaceutical Society of Great Britain

www.rpsgb.org.uk

Royal Society for the Promotion of Health

www.rsph.org

Royal Society of Medicine

www.rsm.ac.uk

Safe Routes to Schools

www.saferoutestoschools.org.uk

Scottish Intercollegiate Guidelines Network (SIGN)

www.sign.ac.uk

Sport England

www.sportengland.org

The Stroke Association

www.stroke.org.uk

Sustain: The alliance for better food and farming

www.sustainweb.org

Sustrans

www.sustrans.org.uk

TOAST (The Obesity Awareness and Solutions Trust)

www.toast-uk.org.uk

TravelWise

www.travelwise.org.uk

United Kingdom Public Health Association (UKPHA)

www.ukpha.org.uk

Walking the Way to Health Initiative (WHI)

www.whi.org.uk

Weight Loss Surgery Information and Support (WLSINFO)

www.wlsinfo.org.uk

World Health Organization

www.who.int/en

Acronyms

BMI	Body Mass Index
CHD	coronary heart disease
CMO	Chief Medical Officer
CVD	cardiovascular disease
CWT	Caroline Walker Trust
DCMS	Department for Culture, Media and Sport
DfES	Department for Education and Skills
EPP	Expert Patients Programme
FIS	Food in Schools
FPH	Faculty of Public Health
GMS	General Medical Services
HDA	Health Development Agency
HDL	high-density lipoprotein
IOTF	International Obesity Taskforce
LAA	Local Area Agreement
LDL	low-density lipoprotein
LDP	Local Delivery Plan
LEAP	Local Exercise Action Pilots
LPSA	Local Public Service Agreement
NHF	National Heart Forum
NHLBI	National Heart, Lung, and Blood Institute
NICE	National Institute for Health and Clinical Excellence
NOF	National Obesity Forum
NSF	National Service Framework
NSP	National Step-O-Meter Programme
OSA	obstructive sleep apnoea
PCT	primary care trust
PEAT	Patient Environment Action Team
PESSCL	PE, School Sport and Club Links
PHIAC	Public Health Independent Advisory Committee
PHO	Public Health Observatory
PPF	Priorities and Planning Framework
PSA	Public Service Agreement
QMAS	Quality Management and Analysis System
QOF	Quality and Outcomes Framework
RCPCH	Royal College of Paediatrics and Child Health
SACN	Scientific Advisory Committee on Nutrition
SHA	strategic health authority
SIGN	Scottish Intercollegiate Guidelines Network
TIA	transient ischaemic attack
WC	waist circumference
WHI	Walking the Way to Health Initiative
WHO	World Health Organization
WHR	waist-hip ratio

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