Resources

D

This section contains:

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.	*Pages 55-57* **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 *Further reading* 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.	*Pages 57-59* **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.	*Page 59* **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.	*Pages 60-61* **Tool 7** Local planning proforma **Tool 11** Prioritisation and planning

Aims, objectives, standards, targets and milestones This section should give the broad aims of the strategy, specific objectives and standards, and time-scheduled targets and milestones.	*Pages 62-63* **Tool 12** Standards, targets and milestones *Further reading:* National policy drivers (page 183)
Interventions to prevent and manage overweight and obesity Using a settings approach, this section should outline the interventions that will be used to prevent and manage overweight and obesity.	*Pages 63-80* **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 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.	*Pages 80-82* **Tool 21** Ways of involving patients and the public in tackling overweight and obesity
Infrastructure support 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.	*Page 82* **Tool 21** Ways of involving patients and the public in tackling overweight and obesity
Monitoring and evaluation This section should outline the methods that will be used for monitoring progress, assessing performance and evaluating the strategy.	*Pages 83-84* **Tool 22** Monitoring and evaluation – Research and evaluation toolbox
Mainstreaming and sustainability The strategy should also include plans on how to ensure that local action to prevent and manage overweight and obesity is mainstreamed and sustained.	*Page 84*

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.

www 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/m^2
- 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.

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.

OBESITY 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/m^2 – 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

1 Sproston K, Primatesta P (eds.) (2004) *Health Survey for England 2003. Volume 2: Risk factors for cardiovascular disease*. London: TSO. www.dh.gov.uk/assetRoot/04/09/89/11/04098911.pdf

2 The Information Centre for Health and Social Care (2006) *Health Survey for England 2005: Updating of trend tables to include 2005 data*. London: The Information Centre for Health and Social Care. www.ic.nhs.uk/pubs/hseupdate05

3 Sproston K, Primatesta P (eds.) (2003) *Health Survey for England 2002: The health of children and young people*. London: TSO. www.archive2.official-documents.co.uk/document/deps/doh/survey02/hse02.htm

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/m^2).

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

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

Thus their BMI would be approximately $29kg/m^2$.

There is little disagreement about the classification of 'overweight' and 'obese' using BMI in adults. A BMI between $18.5kg/m^2$ and under $25kg/m^2$ is accepted to be within normal ranges, whereas a BMI of between $25kg/m^2$ and $30kg/m^2$ is classified as overweight and a BMI of $30kg/m^2$ 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, 2000 [1]

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/m^2 (healthy weight), 23kg/m^2 or more (overweight), 23-24.9kg/m^2 (at risk), 25-29.9kg/m^2 (obesity I), 30kg/m^2 or more (obesity II).

consultation group which also recommends trigger points for public health action for adults of Asian origin – 23kg/m^2 for increased risk and 27.5kg/m^2 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/m^2. [(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/m^2.[(2)] However, where BMI is greater than 35kg/m^2, waist circumference adds little to the absolute measure of risk provided by BMI.[5] This is because patients who have a BMI of 35kg/m^2 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, 2006 [2]

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, 2006 [2]

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/m^2 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/m^2 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.

References

1 World Health Organization (2000) *Obesity: Preventing and managing the global epidemic. Report of a WHO Consultation*. WHO Technical Report Series 894 (3), i-253. Geneva: WHO

2 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

3 WHO Expert Consultation (2004) Appropriate body-mass index for Asian populations and its implications for policy and intervention strategies. *The Lancet;* 363; 9403: 157-63

4 World Health Organization, International Association for the Study of Obesity and International Obesity Task Force (2000) *The Asia-Pacific perspective: Redefining obesity and its treatment*. Melbourne, Australia: Health Communications Australia Pty Limited

5 National Health and Medical Research Council (2003) *Clinical practice guidelines for the management of overweight and obesity in adults*. Canberra, ACT: NHMRC

6 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

7 International Diabetes Federation (2005) *The IDF consensus worldwide definition of the metabolic syndrome.* Brussels, Belgium: IDF

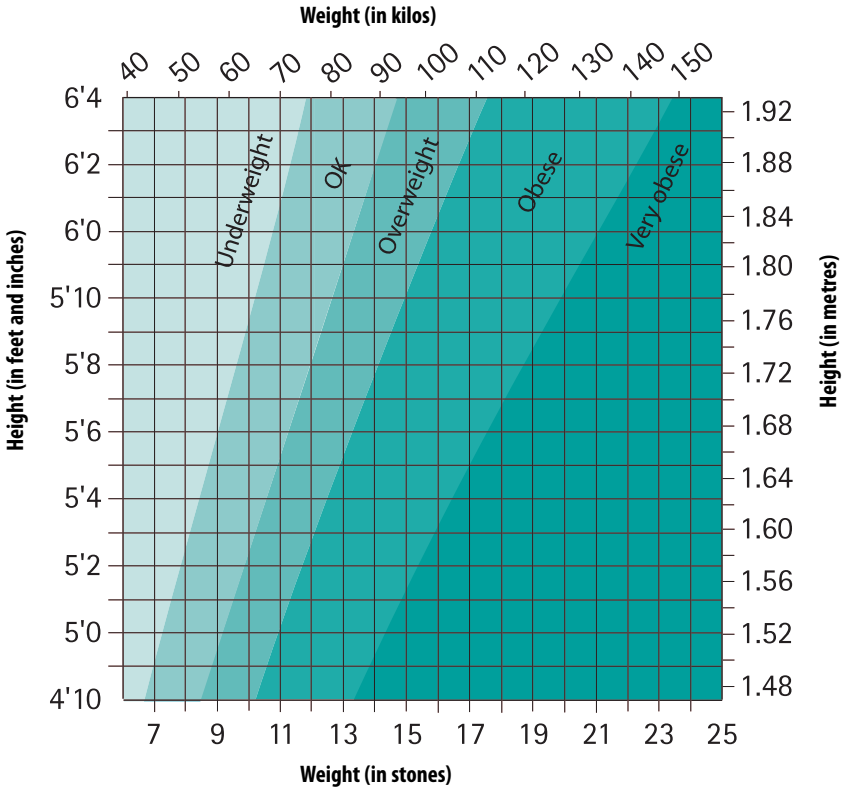
8 Wildman RP, Gu D, Reynolds K, Duan X and He J (2004) Appropriate body mass index and waist circumference cutoffs for categorization of overweight and central adiposity among Chinese adults. *American Journal of Clinical Nutrition*; 80: 1129-1136

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/m^2)

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/m^2)

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

Overweight (BMI 25 – 29.9kg/m^2)

Some loss of weight might be beneficial to health.

Obese (BMI 30 – 39.9kg/m^2)

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

Very obese (BMI 40kg/m^2 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.

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 charts[4] 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 charts[4] 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 children[4]), 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.

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 classification[9] 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/m^2 and 30kg/m^2 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 Health[3] 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, 2006 [5]

The Department of Health[3], 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.

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

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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

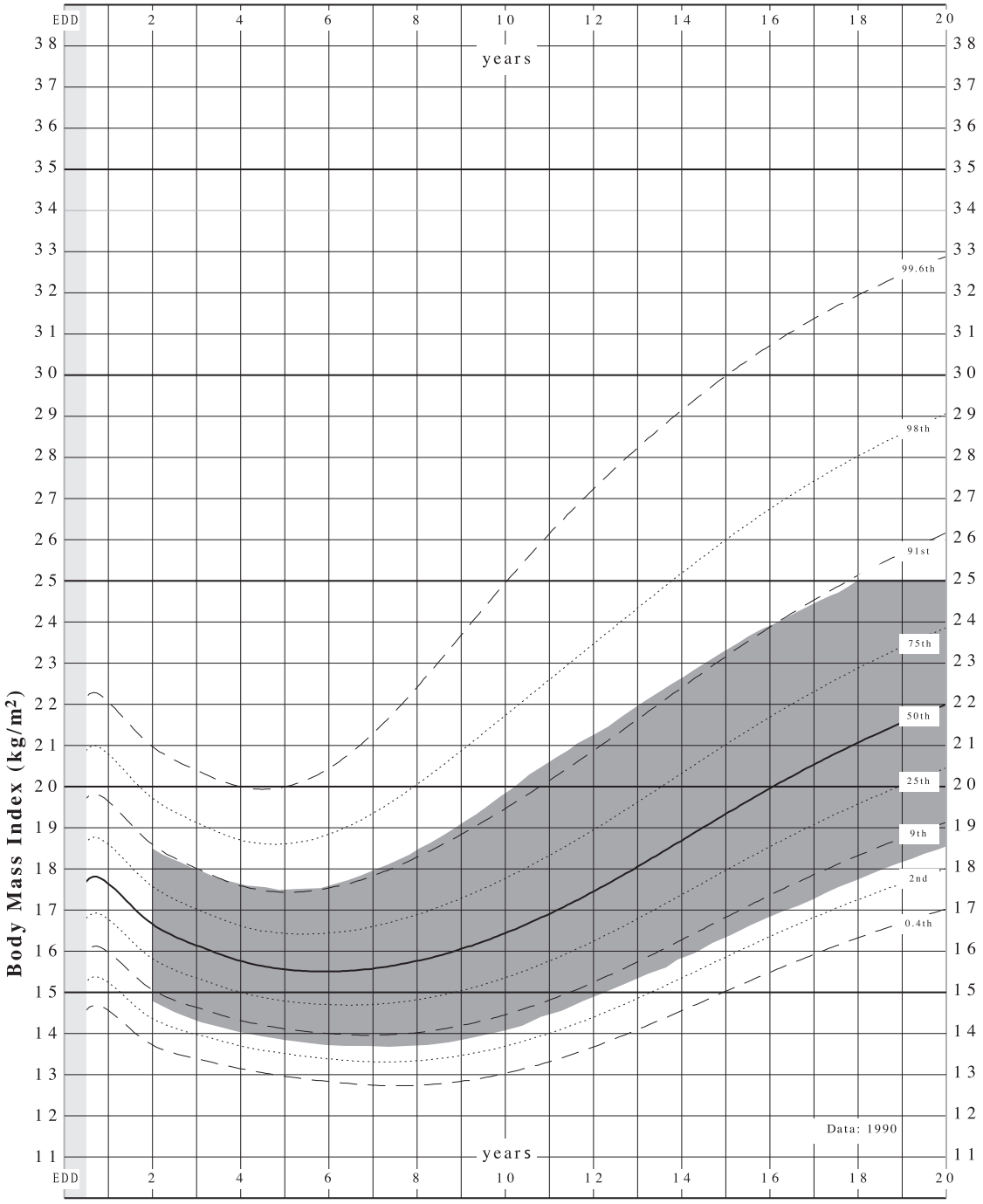
13 Department of Health (2006) *Measuring childhood obesity. Guidance to primary care trusts.* London: Department of Health

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

Centile BMI charts – CHILDREN

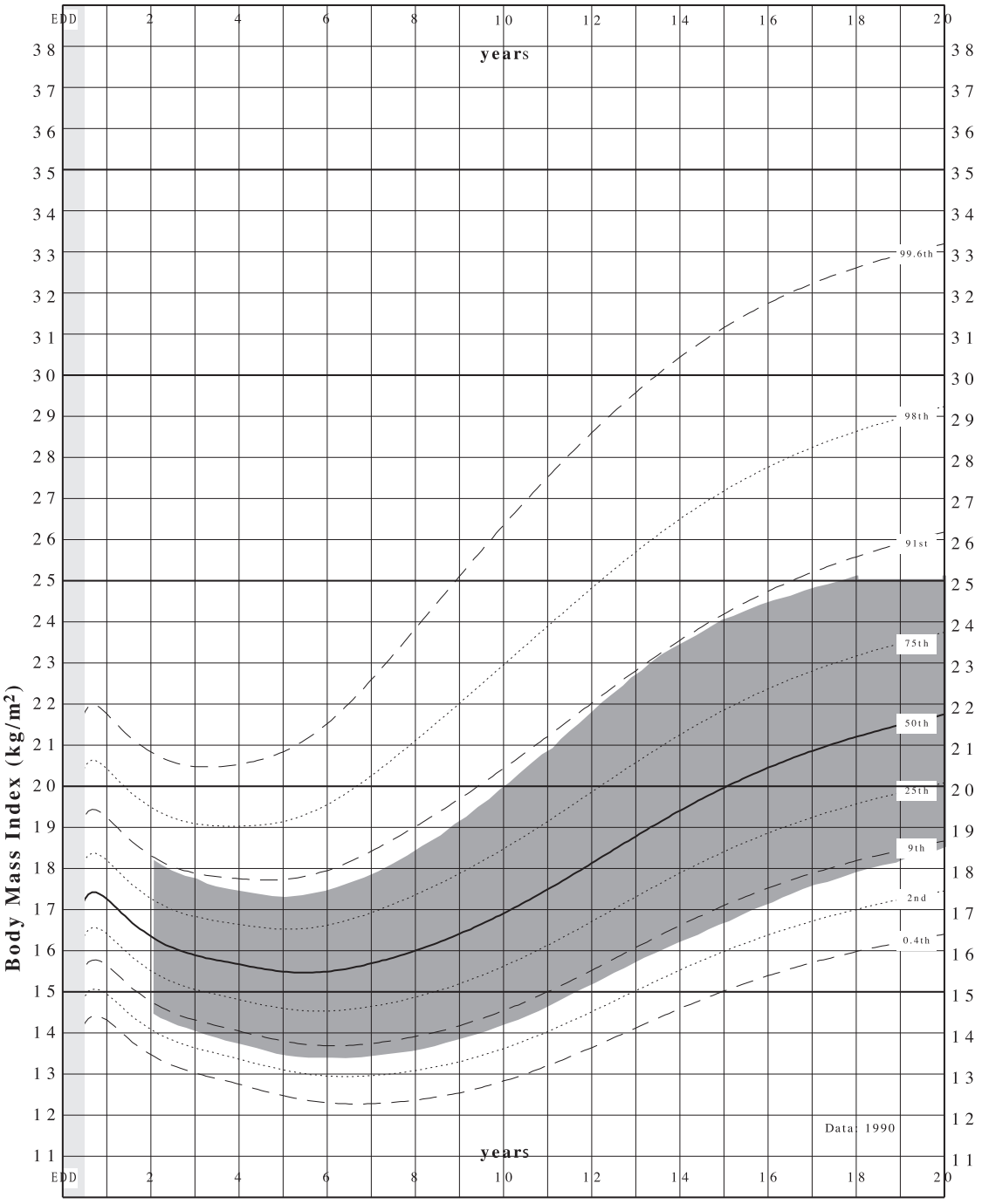
Tool 6

Boys BMI chart – Identification



D
Resources

Girls BMI chart – Identification



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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?**

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**

NATIONAL Heart Forum

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 *Every child matters* [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

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			

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	*Does evidence exist that shows the need for action?*	*What further evidence is needed to confirm need?*	
What/who is the target?	*Is there clear evidence of the rationale for targeting?*	*What further evidence is needed to confirm targets?*	
How/where to intervene?	*Is there a clear understanding of the methodology and cause and effect chain?*	*What further evidence is needed to define the methodology?*	
What specifically *could* be done?	*What is the full range of potential action?*	*Are there gaps in understanding?*	
What specifically *should* be done?	*What is it practical to deliver?*	*Is there a need for feasibility tests?*	

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

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 Rona[1]

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:	***End of year 2***
• 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.	
3 Practices should have:	***End of year 3***
• Clinical audit data no more than 12 months old.	
SPECIALIST SERVICE	
1 The specialist service should have:	***End of year 1***
• An effective means of setting clinical standards for obesity management • A systematic approach to determining whether agreed clinical standards are being met.	
2 The specialist service should have:	***End of year 2***
• An agreed protocol for the assessment and management of people who have been referred for specialist management of their obesity.	
3 The specialist service should have:	***End of year 3***
• 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.	

Reference

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

Evidence of effectiveness

Tool 13

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	
General	There are limited data from cohort studies on the factors associated with weight gain in children **(N/A)**
Parental obesity	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+)**
Dietary factors	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+)**
Physical activity	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	
General	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+)**
Physical activity	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+)**
Dietary factors	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	
Weight outcomes	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+)**
Diet outcomes	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+)**
Physical activity outcomes	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++)**
Generalisability	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+)**
Implementation	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)	
Weight outcomes	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)**
Diet and activity outcomes	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+)**
Generalisability	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+)**
Implementation	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	
Weight outcomes	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++)**
Diet and activity outcomes	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+)**
Other outcomes	No negative outcomes were reported in the identified studies. One multi-component study showed that measures of extreme dieting behaviour remained unchanged **(1+)**
Generalisability	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)**
Implementation	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++)**

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

Evidence of effectiveness of prevention interventions targeted at adults

INTERVENTION	EVIDENCE
Workplace	
Weight outcomes	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)**
Diet and activity outcomes	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+)**
Generalisability	It remains unclear whether the effectiveness of interventions varies by age, gender, socioeconomic or ethnic group **(N/A)**
Implementation	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	
Weight outcomes	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+)**
Diet and activity outcomes	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++)**
Generalisability	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+)**
Implementation	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	
Weight outcomes	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+)**
Diet and activity outcomes	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+)**
Generalisability	Barriers may vary by age, gender and social status **(3)**
Implementation	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
Weight outcomes	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)**
Diet and activity outcomes	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)**
Generalisability	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
Weight outcomes	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+)**
Diet and activity outcomes	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)**
Generalisability	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
Weight outcomes	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
Weight outcomes	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)**
Diet and activity outcomes	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+)**
Other outcomes	No negative outcomes were reported in the identified studies for children or adults **(N/A)**
Generalisability	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)**
Implementation	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
Weight loss	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)**
Outcomes other than weight loss (from trials that reported weight loss)	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+)**
Harms (from trials that reported weight loss)	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
Harms (from trials that reported weight loss)	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+)**
Generalisability (from trials that reported weight loss)	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	
General	Energy balance is critical to weight loss. Caloric expenditure must exceed caloric intake **(2++)**	
Weight loss	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.

Weight loss continued	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++)**	
Generalisability	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.

	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 obesity[1] – 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]).

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)

8 Rajgopal R, Cox RH, Lambur M, Lewis EC (2002) Cost-benefit analysis indicates the positive economic benefits of the expanded food and nutrition education program related to chronic disease prevention. *Journal of Nutrition Education and Behaviour*; 34 (1): 26-37

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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

11 Pritchard JE, Nowson CA, Wark JD (1997) A worksite program for overweight middle-aged men achieves lesser weight loss with exercise than with dietary change. *Journal of the American Dietetic Association*; 97: 37-42

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.
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.

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.
Health professionals working in/with primary care settings	
11	All interventions to support smoking cessation should: • 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.
Health professionals working in or with broader community settings (including healthy living centres and Sure Start programmes)	
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.
Health professionals working in/with pre-school, childcare and family settings	
17	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: • 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.
Health professionals working in/with workplace settings	
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.

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.
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.
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.
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.
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.
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.
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.
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.
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.

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 Rona[1] and the NICE guideline on obesity.[2]

D

Resources

ACTION	INTERVENTION	PARTNERS	NICE REVIEW OF EVIDENCE
COMMUNITY			
Healthy eating			
Healthy eating campaigns	• 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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Healthy eating group work targeted at higher risk or disadvantaged groups	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	
Advocacy of nutritional policies at national and international level conducive to healthy eating	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			
Physical activity and fitness campaigns	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]

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Other local planning to encourage physical activity	• 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)			
Advice about infant feeding and healthy eating for young families	• 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]
Promotion of active lifestyles	• 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]

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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]

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Teaching healthy cooking skills	• Making available slots for teaching healthy cooking skills. • Food in Schools programme.	• Head teachers • School governors • Class teachers • Parents and pupils	
Providing healthy school meals	• Nutritional standards for school meals provide minimum requirements for the main food groups. For nutrient-based standards see *Eating well at school*, 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]

Continued on next page

Physical activity			
Encouraging uptake of physical activity and sports	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	• *Active play:* 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] • *PE classes:* 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]
Promoting active travel plans	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			
Identifying children who are overweight	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			
Encouraging increased physical activity	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.
Active travel plans	• User-friendly implementation guidance on the tax-efficient Cycle to Work scheme has been developed and will increase the use of the scheme and promote cycling. • Walking and cycling travel plans will be developed to promote cycling and walking levels for journeys to work.	• Employees • Employers • Planners • Local businesses	There is evidence from a UK-based study[37] and a Finnish-based study[38] that workplace promotional strategies can increase the number of people travelling actively to work.
Encouraging a healthy diet	• Healthy options in staff canteens. • Promoting sustainable food procurement.	• Employees • Employers • Local businesses	• *Healthier food provision:* 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] • *Incentives:* 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]

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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.

D
Resources

Management of overweight and obesity in children

Assessment and classification

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 to change
- risk factors and comorbidities – such as hypertension, hyperinsulinaemia, dyslipidaemia, type 2 diabetes, psychosocial dysfunction, exacerbation of asthma
- psychosocial distress – low self-esteem, bullying
- family history of overweight, obesity and comorbidities
- lifestyle – diet and physical activity
- environmental, social and family factors
- growth and pubertal status.

Management
- Offer multicomponent interventions to encourage:
  - increased physical activity
  - improved eating behaviour
  - healthy eating.

(See pages 12–14 for details.)

Consider referral to a specialist
If the child has:
- significant comorbidity or
- complex needs such as learning or educational difficulties.

Assessment in secondary care
- Assess comorbidities and possible aetiology; carry out investigations such as:
  - blood pressure
  - fasting lipid profile
  - fasting insulin and glucose levels
  - liver function tests
  - endocrine investigations.
- Take into account the degree of overweight or obesity, the child's age, comorbidities, family history of metabolic diseases and possible genetic causes.

Specialist management
- Drug treatment (see page 15 for details).
- Surgery (see page 16 for details).

Make arrangements for transitional care when young people move to adult services.

General principles of care for children and young people
- Offer regular long-term follow-up by a trained professional.
- Ensure continuity of care through good record keeping.
- Coordinate care around the individual and family needs of children and young people.
- Comply with national core standards as defined in the Children's NSFs for England and Wales.
- Aim to create a supportive environment that helps children and their families make lifestyle changes.
- Make decisions on management in partnership with the child and family, and tailor to their needs and preferences.
- Address lifestyle within the family and in social settings.
- Encourage parents (or carers) to take the main responsibility for lifestyle changes for children, especially children younger than 12 years. But take the age and maturity of the child, and the preferences of the child and the parents into account.

The first steps in managing overweight and obesity

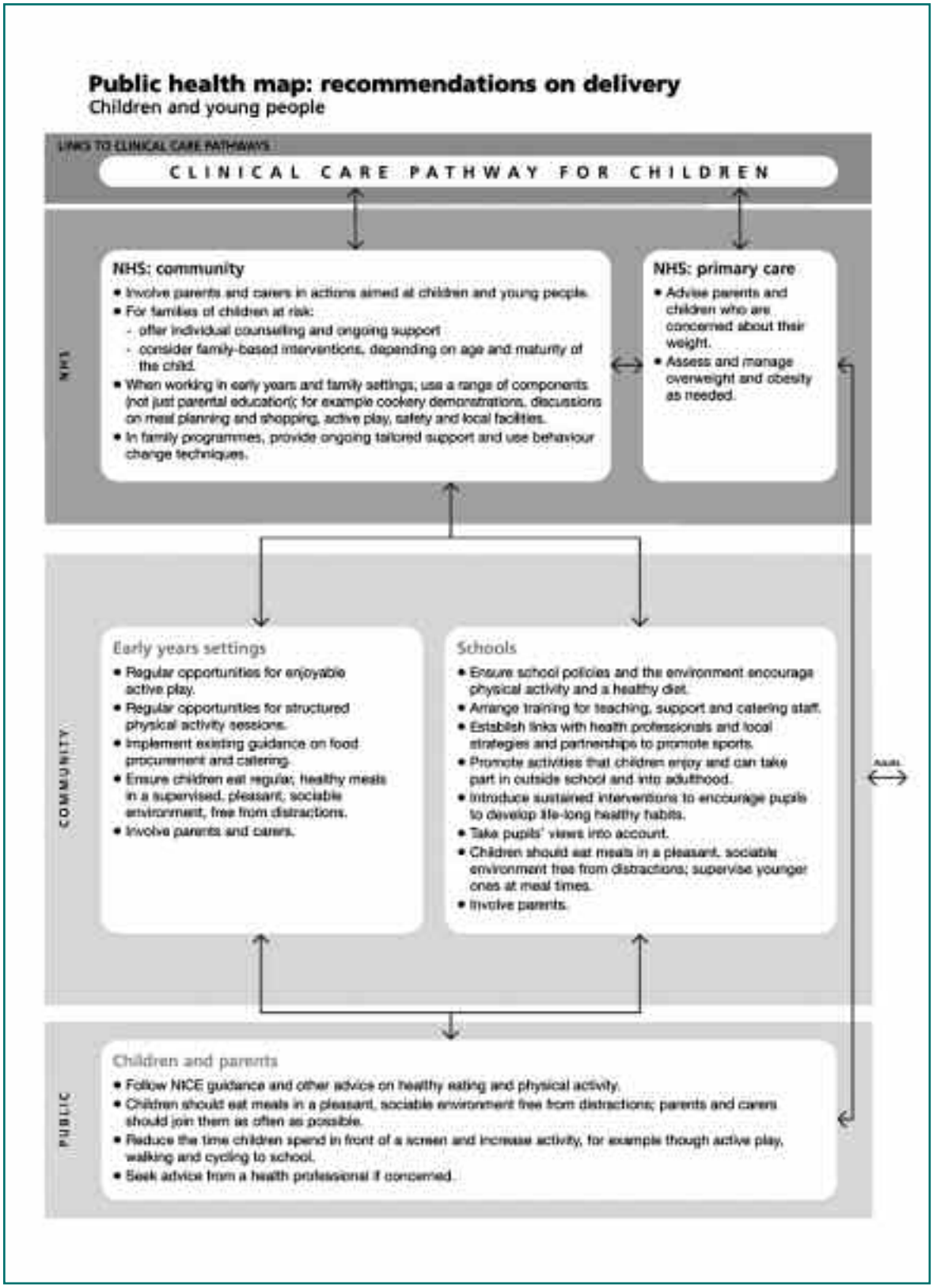
Comorbidities and risk factors
- After the initial assessment, use clinical judgement to decide how far to investigate.
- Manage comorbidities when they are identified; do not wait for the child to lose weight.

Readiness to change
- If a child or family is unwilling to make changes, give them:
  - information about the benefits of losing weight, healthy eating and increased physical activity
  - details of someone they can contact when they are ready to change.
- Stress that obesity is a clinical term with health implications, rather than a question of how a person looks.
- During the consultation:
  - assess the child and family's view of the diagnosis, and why they have gained weight
  - ask about their diet and activity levels, and their beliefs about eating, activity and weight
  - be aware that children and families from some ethnic and socioeconomic backgrounds may be at greater risk from obesity, and may have different attitudes and beliefs about weight management
  - find out what they have already tried and what they learned from this
  - assess their readiness to make changes and confidence in making changes.

Explanation
- Give children and their families information on any tests.
- Offer another consultation if needed to explore treatment options or discuss test results.

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

Public health map: Children and young people



Management of overweight and obesity in adults

Assessment and classification

Determine degree of overweight or obesity
- Use clinical judgement to decide when to measure weight and height
- Use BMI to classify degree of obesity (see table 1, below) 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/m^2 to assess health risks (see table 2, bottom left)
- 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

Table 1 Classifying overweight and obesity

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	40 or more

Table 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 94 cm is low, 94–102 cm is high and more than 102 cm is very high.

For women, waist circumference of less than 80 cm is low, 80–88 cm is high and more than 88 cm is very high.

Assess lifestyle, comorbidities and willingness to change, including:
- presenting symptoms and underlying causes of overweight or obesity
- eating behaviour
- risk factors and comorbidities – such as type 2 diabetes, hypertension, cardiovascular disease, dyslipidaemia, osteoarthritis and sleep apnoea; check lipid profile and blood glucose (preferably fasting) and blood pressure
- lifestyle – diet and physical activity
- psychosocial distress
- 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.

Management
- Offer multicomponent interventions to encourage:
  - increased physical activity
  - improved eating behaviour
  - healthy eating (see pages 20–22 for details).
- Drug treatment (see page 23–24 for details).

Consider referral:
- for assessment of the underlying causes of overweight or obesity
- if the person has complex disease states or needs that cannot be managed in primary or secondary care
- if conventional treatment has failed
- if considering drug therapy for a person with a BMI more than 50 kg/m^2
- if specialist interventions (such as a very-low-calorie diet for extended periods) may be needed
- if surgery is being considered.

Specialist assessment and management
- Assessment and management as needed.
- Surgery and follow-up (see pages 25–26).

General principles of care for adults
- Offer regular long-term follow-up by a trained professional.
- Ensure continuity of care through good record keeping.
- Make the choice of any intervention through negotiation with the person.
- Tailor the weight-management programme to the person's preferences, initial fitness, health status and lifestyle.
- In specialist settings, ensure there is equipment for treating people who are severely obese, such as special seating, and adequate weighing and monitoring equipment.
- Hospitals should have access to specialist equipment for general care of people who are severely obese, including larger scanners and beds.

A guide to deciding the initial level of intervention to discuss

BMI classification	Waist circumference			Co-morbidites 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.

The first steps in managing overweight and obesity

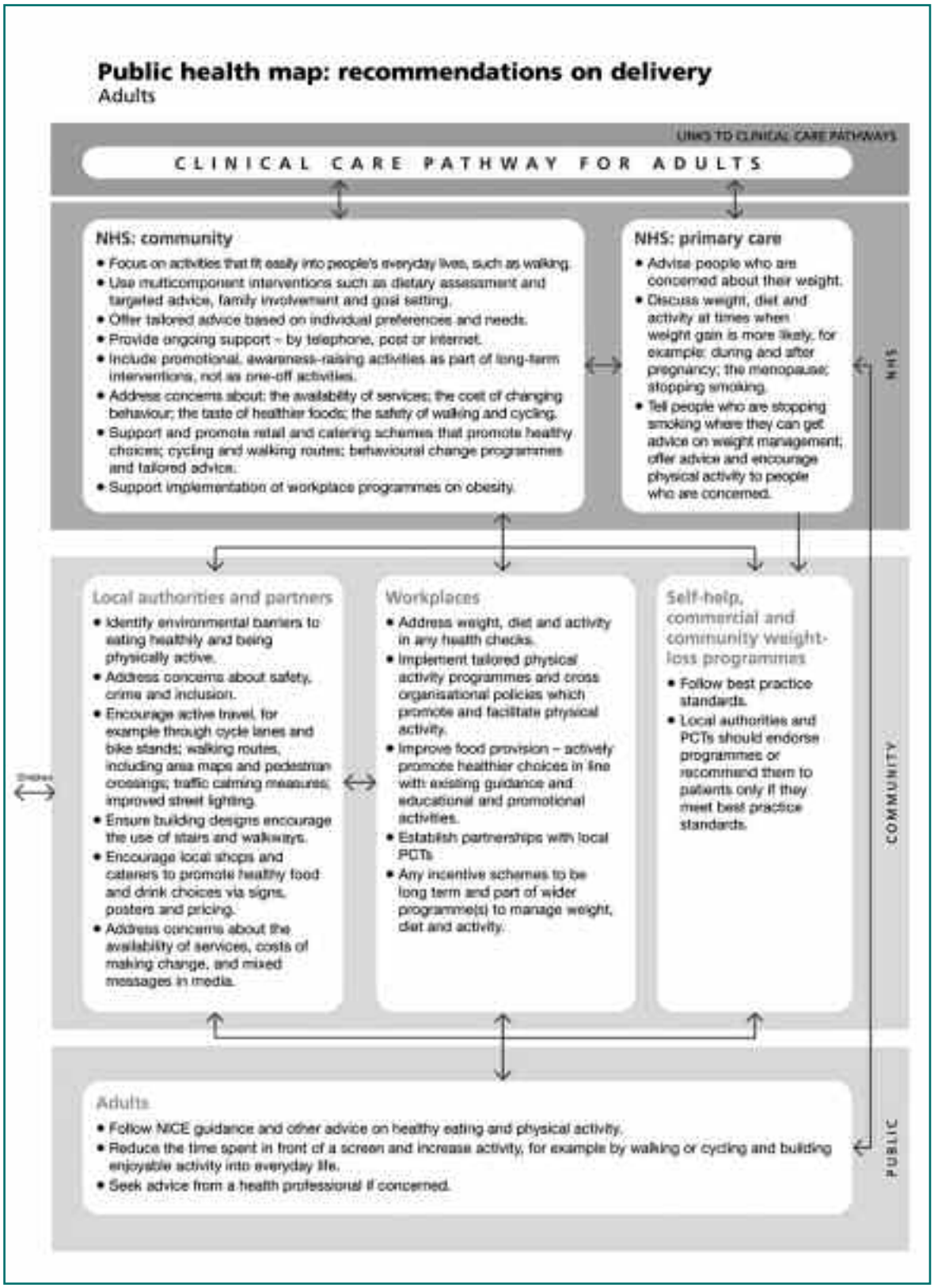
Comorbidities and risk factors
- After the initial assessment, use clinical judgement to decide how far to investigate.
- Manage comorbidities when they are identified; do not wait for the person to lose weight.

Readiness to change
- If the person is unwilling to make changes, give them:
  - information about the benefits of losing weight, healthy eating and increased physical activity
  - details of someone they can contact when they are ready to change.
- Stress that obesity is a clinical term with health implications, rather than a question of how a person looks.
- During the consultation:
  - assess the person's view of the diagnosis, and why they have gained weight
  - ask about their diet and activity levels, and beliefs about eating, activity and weight
  - be aware that people from some ethnic and socioeconomic backgrounds may be at greater risk from obesity, and may have different attitudes and beliefs about weight management
  - find out what they have already tried and what they learned from this
  - assess readiness to make changes and confidence in making changes.

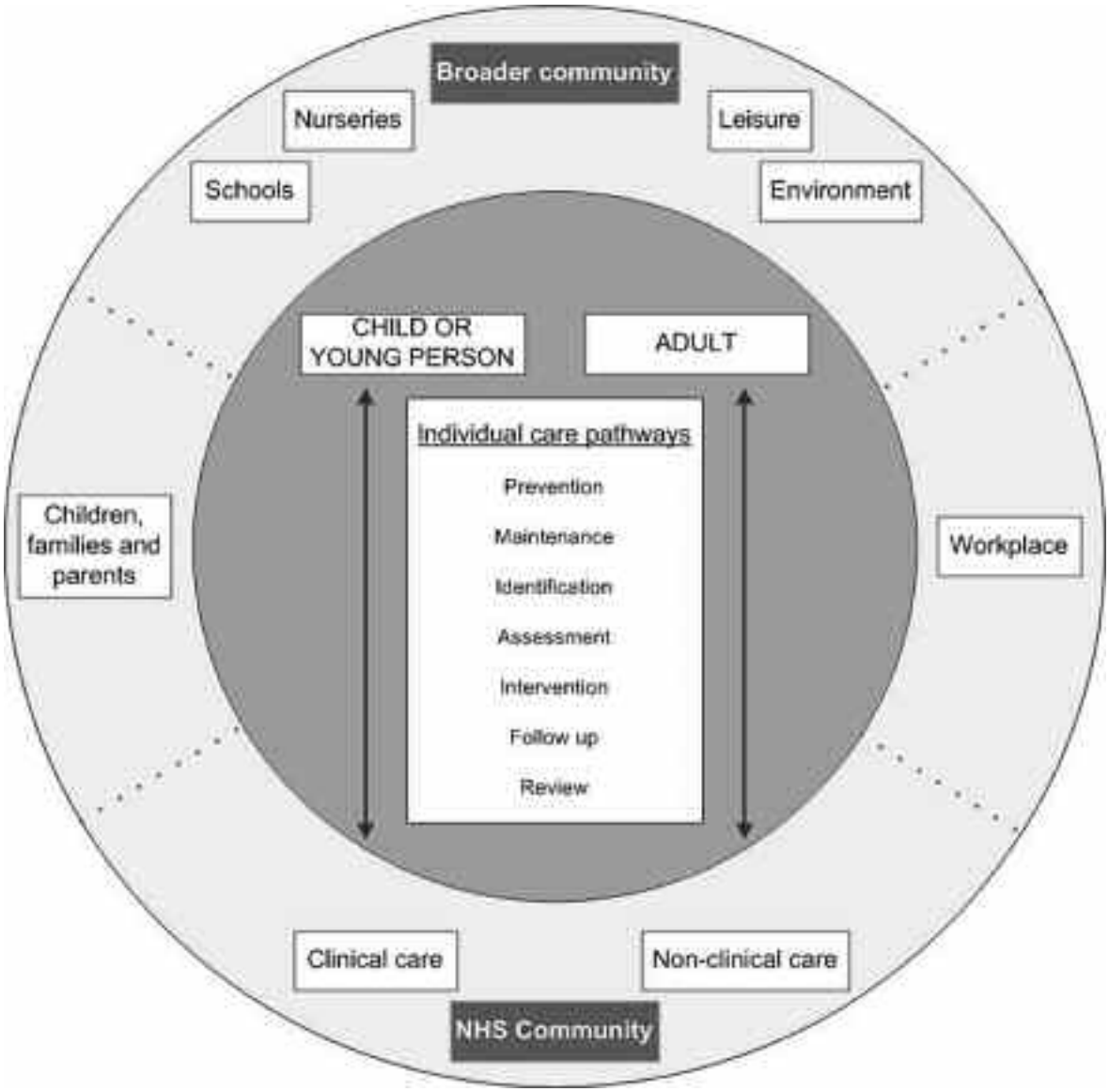
Explanation
- Give people information on any tests.
- Offer another consultation if needed to explore treatment options or discuss test results.

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

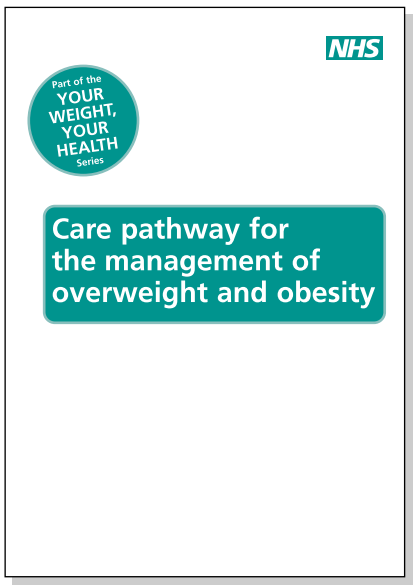
Public health map: Adults



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.

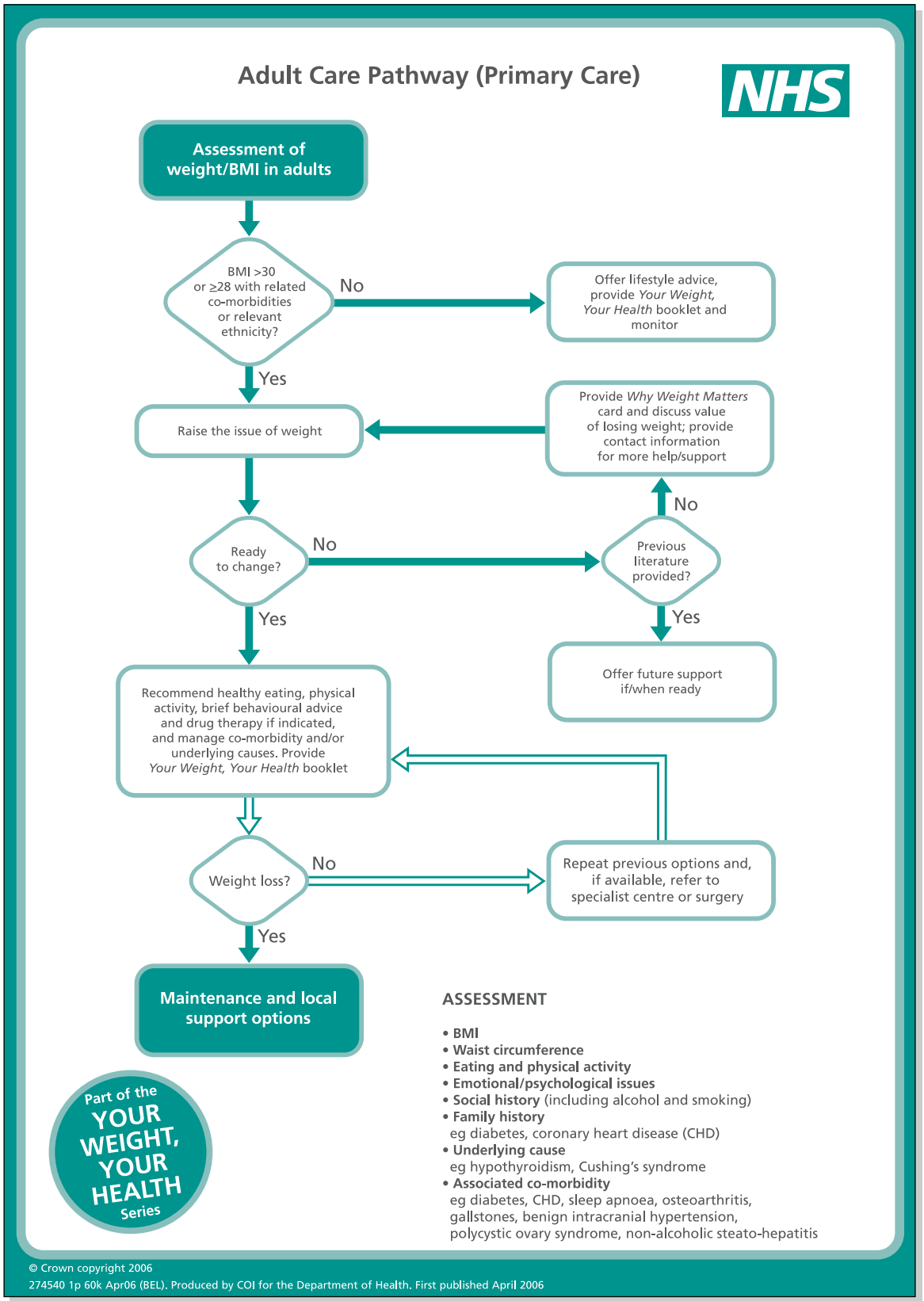
The pathways are also available as separate laminated posters (see pages 168-169), and the *Raising the issue of weight* tools are also available as separate laminated cards (see pages 170-171).

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

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)

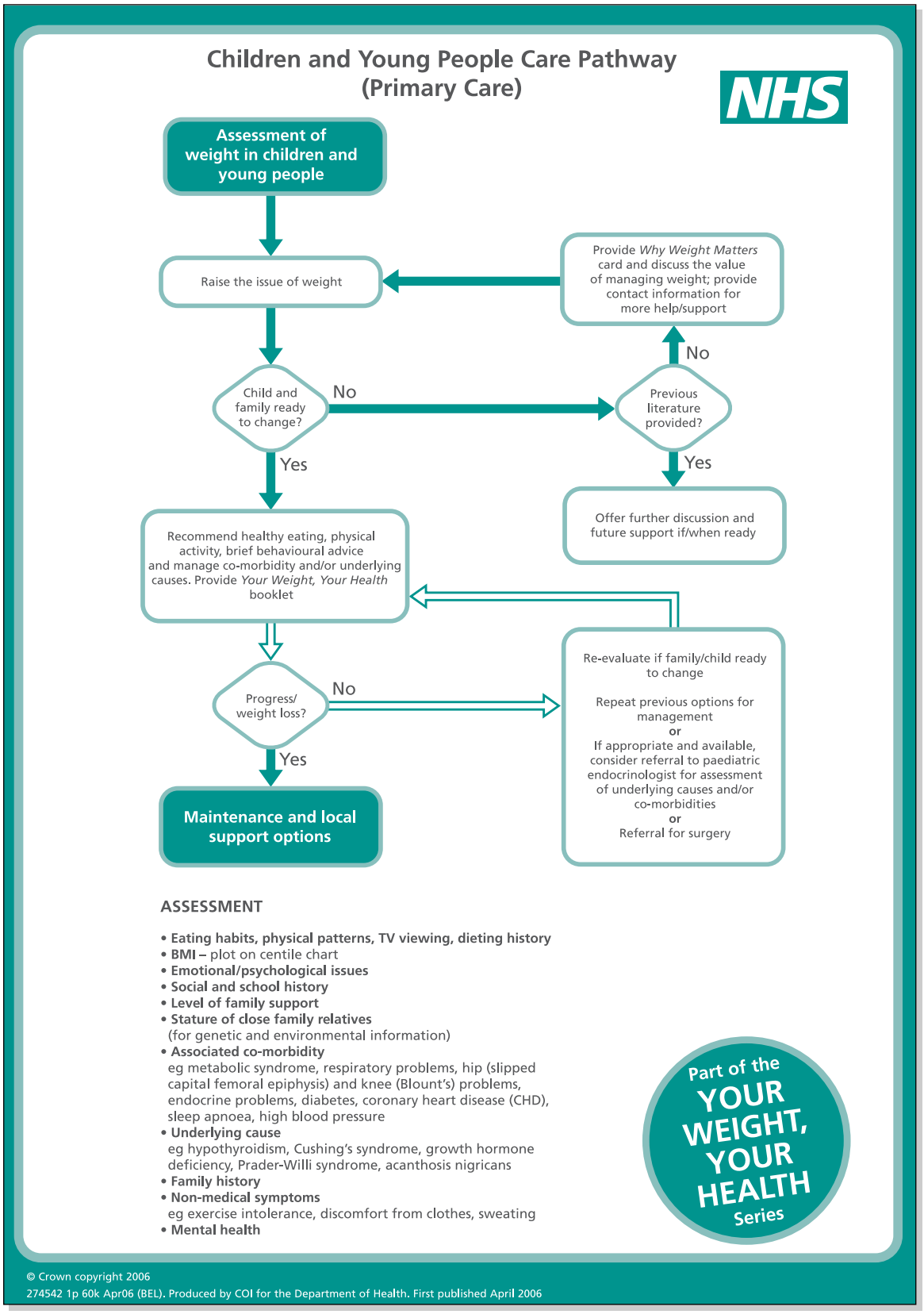
Adult care pathway

Laminated poster[4] – available from Department of Health Publications (see page 167)



Children and young people care pathway

Laminated poster[5] – available from Department of Health Publications (see page 167)



Part of the YOUR WEIGHT, YOUR HEALTH Series

NHS

Raising the Issue of Weight in Adults

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 (≥102cm)	≥35 inches (≥88cm)
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 ≥90cm for males and ≥80cm 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 overweight 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.[3] 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

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[6] Rollnick S et al (2005) Consultations about changing behaviour. BMJ 331: 961–3.
[7] O'Neil PM and Brown JD (2005) Weighing the evidence: Benefits of regular weight monitoring for weight control. J Nutr Educ Behav 37: 319–22.
[8] Lancaster T and Stead LF (2004) Physician advice for smoking cessation. Cochrane Database of Systematic Reviews, 4.

Benefits of modest weight loss[4]

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.[7] Interventions for smoking cessation have found that behaviour change is more successful when follow-ups are included in the programme.[8]

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Part of the YOUR WEIGHT, YOUR HEALTH Series

NHS

Raising the Issue of Weight in Children and Young People

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	Severely overweight
BMI centile ≥91st centile	**BMI centile** ≥98th centile

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 childhood[4,5]

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.

[1] Carnell S et al (2005) Parental perceptions of overweight in 3–5 year olds. Int J Obes 29: 353–5.

[2] Cole T et al (2002) A chart to link child centiles of body mass index, weight and height. Eur J Clin Nutr 56: 1194–9.

[3] Jebb S et al (2004) New body fat reference curves for children. Obes Rev (NAASO Suppl) A156.

[4] McCallum Z and Gerner B (2005) Weighty matters: An approach to childhood overweight in general practice. Aus Fam Phys 34(9): 745–8.

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Raising the issue of weight in children and young people

Laminated card[7] – available from Department of Health Publications (see page 167)

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.

D
Resources

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/m^2 or above, or there

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					
eg Breastfeeding advice					
eg Healthy eating advice for young families					
SCHOOL					
eg Teaching about healthy eating					
eg Providing healthy meals					
eg Encouraging uptake of physical activity and sports					
WORKPLACE					
eg Providing healthy meals					
eg Workplace travel plans					

INTERVENTION	DELIVERABLE(S)	LEAD PARTNER	PARTNERS	TIMESCALE	DEADLINE
COMMUNITY					
eg Healthy eating campaigns					
eg Physical activity campaigns					
eg Weight control groups					
PRIMARY CARE					
eg Healthy eating advice					
eg Physical activity advice					
eg Identifying overweight and obese patients					
eg Referral to commercial slimming clubs					
eg Exercise referral					
HOSPITAL					
eg 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

- 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

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.

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 **Learning through PE and sport – An update on the strategy (2004)** www.teachernet.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.
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	*National standards, local action* 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.

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.

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: OBESITY 1: The practice can produce a register of patients aged 16 years and over with a BMI greater than or equal to 30kg/m^2 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.easoobesity.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

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.iotf.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.nutritionsociety.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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If you require further copies of this toolkit quote 50374/*Lightening the Load: tackling overweight and obesity* and contact:

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www.dh.gov.uk/publications

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London WC1H 9LG
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E nhf-post@heartforum.org.uk
W www.heartforum.org.uk
Registered charity number 803286

Faculty of Public Health
4 St Andrews Place
London NW1 4LB
T 020 7935 0243
E enquiries@fph.org.uk
W www.fph.org.uk
Registered charity number 263894

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