FINAL REPORT

Tackling Obesities: The Foresight Report and Implications for Local Government

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SHARPENS YOUR THINKING

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Introduction

The government supports the findings of the Foresight Report 'Tackling Obesities: Future Choices – Project Report'; published in 2007, as a significant contribution to recognising the social and economic costs of obesity in the UK. It has been estimated that about 28 per cent of women and 33 per cent of men in the UK will be obese by 2010. Similar trends are seen in obesity in children. This report sets out the key recommendations and actions of the Foresight Report and its relevance to local government. There are numerous examples of good practice across the country where local government has demonstrated leadership to tackle obesity. Examples are often found within obesity strategies set up and implemented in collaboration with a range of agencies including health, sports councils, the voluntary and private sector.

Obesity

Obesity is measured by calculating the Body Mass Index (BMI), which calculates the amount of excess body fat but considers this in relation to a person's height. People with a BMI of above 30 are considered obese. It is important to note that the risk of poor health increase sharply with increasing BMI above 30. In other words, someone with a BMI of 38 is at greater risk than someone of a BMI of 32. Some documents identify a further category of 'morbid' or 'severe' obesity above BMI of 40. A number of common causes of disease and death are associated with obesity. In particular, diabetes, cardiovascular diseases and some cancers are associated with obesity.

Section 1: Obesity – the wider debate

There are sometimes confusing messages about obesity portrayed throughout the media. While the government has used words to describe the increase in obesity as an 'epidemic', others say that this is not the case and that the situation is not as bad as that being portrayed by the government. This section gathers evidence to dispel some of the myths around obesity and clarify the facts. The facts are that the numbers of individuals who are overweight and obese have hit epidemic proportions and that the situation requires radical redress from all agencies in public and private services to halt the further rise in obesity. Further evidence for this section is presented as a series of appendices to the report.

The Foresight Report argues that understanding and preventing obesity is complex. There is no example anywhere in the world where the obesity trend has been reversed. The solution to reverse the trend is more complex than just helping individuals to change their diet and to take up exercise (although this is a part of the solution). Over the last few decades, our way of life has changed significantly. We have many labour-saving devices in our home, we drive more, eat out more and have takeaways delivered to our homes as well as the chance to do our weekly shop on the internet. Food is abundantly available and presented to encourage us to have the larger-sized Mars bar at the garage forecourt or to 'buy

one, get one free'. Towns have been planned around the car and large supermarket chains have replaced small family stores. Everything is ‘super sized’.

The Foresight Report argues that it is the interplay of these various factors that creates what has been termed in the report as an 'obesogenic environment'. The term is defined as: 'the total sum of influences in the environment on promoting obesity in individuals and populations'.

Section 2: Social policy frameworks for local government action
A global and nationwide response is required to stop the dramatic increase in the number of children and adults who are obese. Without a well thought through national strategy, the Foresight Report estimates that more than half of adults will be obese by 2050, with consequent increase in costs for society. Other countries in the world have used a range of strategies to combat obesity. For example, Norway has used a combination of food subsidies, target pricing and clear labelling on food to steer people away from unhealthy food. This is an opportunity for local government to model effective leadership in responding to this major challenge and to have a wider strategic role using its powers and influence creatively to make a difference. This has been referred to as 'place-shaping'.

The Local Government Act 2000 and the Local Government and Public Involvement in Health Act 2007 aim to strengthen visible and effective political leadership in local government by changing the structure of local government. The new legislation requires the local authority and its partners to prepare a Sustainable Community Strategy for promoting or improving the economic, social and environmental wellbeing of their area. The strategy could be a critical planning tool to develop a local strategy to reduce obesity.

Section 3: Inequalities and obesity
As with other diseases, obesity raises a number of issues of inequalities between groups in society. This section draws attention to issues arising from socio-economic factors, from gender, and from ethnicity. Sadly but not surprisingly, the negative consequences of obesity are greatest for those who are least well off. There is a mixed picture across different ethnic groups – levels of obesity are low among some groups. However, the disease risks, particularly for South Asian communities, are greater even when body mass indices are lower than that considered obese. The projected increases in obesity will be greater among men than women. Men are less healthy weight conscious or proactive in improving diet and lifestyle factors.

Section 4: Key areas of influence and responsibility
We have identified four local government areas of responsibility. These are: planning; children's services; adult social care and parks and leisure. In each case we have produced a detailed matrix matching key recommendations from the Foresight Report with these selected areas of local government. The following are examples from this section:

Planning

Towns could be planned to encouraging a more active community. EPODE is a French project that set out to impact upon the planning processes to create a

'healthy town'. A number of agencies became involved in the project from town planners, health, education and the voluntary sector. The outcomes of the project, which included several towns in France, were staggering. In the French 'fit' communities, the proportion of overweight boys almost halved from 19 per cent, and the rate among girls dropped from 10 per cent to seven per cent.

Low levels of activity and high levels of television watching appear to be more prevalent in more deprived communities. There is evidence of voluntary sector projects setting up 'sports' holiday clubs, or peer advocacy projects recruiting young people as health ambassadors. These projects can reduce the innate activity level of children by engaging them in holiday times. Examples of innovative projects can be found from the Healthy Living Barnsley project, where sports clubs for children helped to increase their physical activity levels.

Barnsley's Fit4thefuture website

Government policy is now designed to support such initiatives. Local strategic partnerships (LSPs) bring together representatives from health, local government, education and other public sector agencies to develop local area agreements (LAAs). LAAs offer the potential to pool funding at a local level for programmes that can best address local needs.

Guidance provided in 'Planning Together: Local Strategic Partnerships and Spatial Planning – a Practical Guide 2007', published by the Department for Communities and Local Government, suggests that "plans should be drawn up with community involvement and present a shared vision and strategy of how the area should develop. Local authorities have an important contribution to make in their 'place-shaping' role, as planning authorities and working in local partnerships with other agencies. Through LAAs they can set specific objectives for their communities" – see 'Healthy Weight, Healthy Lives 2008:20'.

Children's services

Interventions likely to be successful are those that engage the whole family to try to change behaviour – although individual sessions with children can also be effective. 'Watch It and Nip It in the Bud' was established in Leeds in 2002 and supported by the Neighbourhood Renewal Fund. There are four key components: frequent individual appointments; healthy education lifestyle plans; group activity sessions and parental group sessions. The sessions are run by health visitor trainers http://www.cdhpp.leeds.ac.uk/services/watch.php (link not working)

Adult social care

A small degree of exercise will prevent additional health problems. Adult social care needs to look at innovative ways to support people to be active – for example 'use it or loose it' initiatives. The Sustainable Community Strategy can be a key mechanism to do this. North East Lincolnshire has developed a community strategy that covers the period 2003-2022. It is their intention to use LAAs to develop a more integrated multi-agency approaches: "bringing a more effective targeting of services and resources towards strategic priorities" **North East Lincolnshire Council** (2007). Establishing adult health as a strategic priority can lead to initiatives such as affordable fitness opportunities and GP referral schemes.

Parks and leisure

New ways of working and new partnerships need to be formed to explore access to physical exercise and to increase physical activity. Partnership working is central to the Barking and Dagenham childhood obesity strategy

New partnerships have been formed to explore more creative and innovative solutions to preventing obesity. Apart from the primary care trust (PCT) and council, there are a number of stakeholders who have helped to design the strategy and implement actions. These include: the extended schools officer; head of the Barking and Dagenham Racial Equality Council (REC) and the health and fitness manager at the council. They are members of the Childhood Obesity Strategy Task Group and believe that preparing the strategy has helped to identify what the range of partners is doing and how that can be best coordinated.

Parks and leisure services are seen as significant component of local government that can lead and shape a more active community. Local council leisure facilities like leisure centres need to be prioritised for investment to ensure that they are attractive to the community and council operated playing pitches need protection to ensure that they are not sold as development land.

As a priority local parks need to become safe places for people to go. Citizens need to perceive that the park is a safe place for them to be. Parks are then excellent vehicles for community activities and exercise. Rotherham Metropolitan Borough Council has installed simple posts on walkways that advise walkers how far they have walked from one position to the next; this tends to encourages walkers to ‘go the extra post distance’.

Section 5: Conclusions and effective responses

In the later part of the Foresight Report there is a very detailed analysis of future scenarios. These have formed the basis of the government's strategy set out in ‘Healthy Weight, Healthy Lives 2008’. The five responses identify practical strategies for change. We have concluded our report with examples of how a local authority might use the five responses as a framework for action:

- **Increase the walkability and cyclability of the built environment** (urban and rural). For example: Oslo, Norway has been termed a 'slim city' as its design is around walkability and cyclability of the city.
- **Targeting health interventions for those at risk**. The MEND programme takes an integrated, holistic approach to obesity prevention for the whole familiy. Children and families spend one hour learning about nutrition and how to change eating behaviour and one hour taking part in activities. This has been piloted in Lewisham and Bromley and was recently awarded £169,000 by the New Deal for Communities (NDC) to extend the randomised controlled trial for MEND.

  Wandsworth links LAA targets on obesity from a PCT perspective. Two hundred families with children aged seven to 13 are to take part in the MEND weight management programme.
- **Controlling obesogenic foods and drinks**. For example: the Barking and Dagenham childhood obesity strategy and action plan has recognised that

food production and dietary habits have a cultural origin. Through the LAA it has fostered increased willingness to work with the voluntary sector – in this case Barking and Dagenham Racial Equalities Council – to deliver programmes which are led by the voluntary sector working directly with communities.

- **Increasing the responsibility of organisations for the health of their employees**. For example, employers can support corporate membership to gyms, provide showers in the work place and consider flexible hours.
- **Early life interventions**. Foresight identified this as the most effective response among those oriented to the family and far more effective than initiatives that might penalise parents. For example, breastfed babies may have some protection against obesity in later life (Gillman *et al.*, 2002) although further research is required in this area. There are some examples of workplace breastfeeding policies (Canada and adapted by York University). Barnsley LAA contains obesity targets but also links to opportunities for the environment to encourage breastfeeding.

  The majority of public spaces and buildings have not been planned to facilitate breastfeeding or best weaning practices but new government policy (Healthy Weight, Healthy Lives, 2008) encourages planners to consider these issues.

'Top Ten' tips for local action

1. Rise to the challenge. We are on the verge of an obesity epidemic even though there are mixed messages from the media. Get a better understanding of what this means for your residents locally
2. Prioritise obesity prevention – take a holistic approach to tackling obesity and the obesogenic environment. For example, connect the obesity strategy to other strategies where possible such as reducing carbon emissions. Resist the simplistic individual lifestyle choice explanations and focus on the environment. The personal changes will follow with less resistance.
3. Target children and vulnerable groups in raising obesity awareness and providing opportunities
4. Don't go it alone. Local strategic partnerships have been developed to bring partner agencies to work together on local issues such as obesity prevention
5. Identify 'obesity champions'. This might be the lead for public health or the lead for children's health or a local mayor or lead councillor. They can capture support with their passion to tackle obesity
6. Stay local. The Sustainable Community Strategy is intended to generate local action and solutions to obesity prevention
7. One size does not fit all. Work with individuals at the grass-roots level to find out what activity projects people would attend
8. Practice what you preach. Be a model employer and develop healthy workplace objectives
9. Don't re-invent the wheel. There is a lot of evidence out there to show what works to combat and prevent obesity, this can be tailored to fit local circumstances.

Learn from good practice elsewhere make information available to all agencies and signpost people to the evidence

10. Make information accessible. Help people understand practical examples of an unhealthy energy imbalance for example how much extra walking is needed to burn off a chocolate bar or a glass of wine.

Introduction

This report summarises the key findings of the Foresight Report 'Tackling Obesities: Future Choices – Project Report for Local Government'. 'Tackling Obesities: Future Choices' has taken a strategic view of the issue of obesity by looking ahead 40 years, using scientific evidence, commissioned research and expert advice. The report here aims to support local government to develop a local response to what is now being referred to as an 'obesogenic environment' [1]

About Foresight

Foresight brings together key people who are recognised as world leaders in their respective fields, knowledge and ideas to look beyond normal planning horizons to identify potential opportunities from new science and technologies and actions to help realise those opportunities. The programme aims to improve the relative performance of UK science and engineering and its use by government and society and considers how future science and technologies could address key future challenges for society.

Obesity

There has been some debate about obesity in the media and this sometimes detracts from the science behind the facts. **Section 1** presents a summary of the main strands of this debate with reference to the evidence from the Foresight Report and the wider scientific community. We have corresponded with a range of experts from research, science, health and wellbeing and sport to ascertain their views on these issues (contributors to this process are acknowledged in Appendix 1). We have presented a more detailed summary of the evidence on each aspect of the critique presented as a series of appendices at the end of this report.

There is now a general consensus that preventing the 'obesity epidemic' will only happen if there is a joined-up, collaborative approach between local government, health services and other partners. The changing legislative structure of local government (Local Government and Public Involvement in Health Act 2007) should enable a closer working relationship between local government and primary care trusts (PCTs) in the development of local level obesity strategies. The NHS operating framework requires all PCTs to develop plans to tackle child obesity and to agree local plans with strategic health authorities. The government expects that PCTs will work with local authorities to develop these plans using the Joint Strategic Needs Assessment process that will become a requirement from 2008. If the PCT and the local authority agree that there is sufficient need to promote maintaining a healthy weight then they can seek to make this a specific focus on the local area agreement (LAA) (Healthy Weight, Healthy Lives, 2008:27). It is only with such a strategic commitment that inroads will be made to impact on the prevention of obesity. The new structure should also enable elected members in local government to have more power and influence to develop a more systemic wide approach to tackling obesity. In **Section 2,** there are

[1] The term 'obesogenic environment' refers to the role environmental factors may play in determining both energy (or calorie) intake and (calorie) expenditure. The term is used in the Foresight Report (p52) and defined as 'the sum of influences that the surroundings, opportunities or conditions of life have on promoting obesity in individuals and populations'.

illustrations of how a local obesity strategy can be operationalised within newly-revised social policy frameworks. **Section 3** identifies who is most at risk in relation to obesity and reviews the evidence in relation to ethnicity, gender and socio-economic status.

To highlight the possible role of local government in changing the local environment and implementing interventions we have presented key findings from the Foresight Report (and from the government's obesity strategy 'Healthy Weight, Healthy Lives, 2008') in a series of matrices in **Section 4**. We have matched key recommendations of the Foresight Report with selected areas of local government responsibility. Four areas of local government responsibility have been selected because of the relevance of the Foresight analyses to their areas of influence. The four areas are: planning; children's services; adult social care; and parks and leisure. A brief commentary is provided in each matrix to explore examples of how public services could prevent its contribution to the development of an 'obesogenic environment'. Although it might represent a significant challenge, public services have the ability to improve their contribution to creating a health promoting environment in local communities, thus begin to reduce the influence of an 'obesogenic environment' on individuals and their families. This potential in itself is encouraging and local government are well positioned to be drivers and demonstrate leadership in this change. The commentary herein provides practical approaches concerning areas that local government has power and influence over.

Section 1: Obesity – the wider debate

The aim of the Foresight Report (2007:20) is to build on the scientific evidence of an explanation of obesity to help inform government strategy. The goals are three fold: 1) to prevent the increasing prevalence of numbers of people being defined as obese (particularly children) and 2) to explore the likely costs of obesity in relation to care and treatment (p21) and finally 3) to reverse the trend. There is however no evidence of any nation being able to reverse the obesity epidemic, which is why the emphasis is predominantly on prevention.

The causes of obesity are complex and the Foresight Report summarises some key contributory factors that include:

- **Technology** – More labour-saving devices that require minimal physical activity (including a significant increase in car use), a decline of manual jobs and the rise of online shopping (Foresight Report, 2007:52).
- **The built environment** – The built environment is one of our most important habitats. Current research suggests that obesity is linked with area of residence, resources, television, walkability, land use, sprawl, and level of deprivation (Booth, Pinkston and Poston, 2005). Previous research tends to focus on the challenges of balanced transportation (for example, roads, highways, infrastructure and public transportation). However, research and pragmatic interventions are needed to identify mechanisms by which the built environment adversely and positively impacts health. Oslo, Norway is an example of a 'slim city' where the built environment was structured to discourage car use and encourage cycling and walking.
- **The impact of genetics** – Recent research evidence indicates that genes might only exert small effects on an individual's likelihood of becoming

obese. Moreover, evidence on genetic contributions to obesity should not detract from individual or population efforts to alter energy balance by changing lifestyle, and by altering the environment to make such changes in lifestyle easier. The small magnitude of these effects means that the obesity epidemic is not attributable to these genes but to changes in environment and behaviour.

- **Opportunities for physical activity** – Physical activity in relation to walking and cycling has declined over the last 30 years. The design of the urban environment can have a significant impact on the motivation of individuals to walk, but other issues also come into play such as safety, availability and access, aesthetics, local knowledge and supportiveness of neighbourhoods (Foresight Report, 2007:53).
- **Food and drink availability** – Eating habits and the nature of food have changed. More people eat out at restaurants. Fast food outlets and takeaways often offer food to be delivered. This increases the availability of foods high in hydrogenated fats and salt content. It is also difficult to monitor the calorific intake of food from these outlets. (Foresight Report, 2007:54).
- **The price of food and drink** – There are now plentiful sources of relatively cheap foods. Cheaper food sources tend to be more energy dense and nutrient poor, that is they provide plentiful calories especially in the form of fats and sugars, but relatively low levels of vitamins and minerals (Foresight Report, 2007:55).
- **Food marketing** – This includes special offers, 'buy one, get one free', promotional offers, packaging and formulation of foods (Foresight Report, 2007:57).
- **Purchasing capacity and impact on eating patterns** – As people earn more they tend to eat out more (Foresight Report, 2007:58).
- **Impact of working practices** – There is a relationship between the increased hours worked and obesity (Foresight Report, 2007:58).

The Foresight Report argues that to be able to halt the obesity epidemic, a systemic approach is required which tackles a wide range of factors in an integrated way. Challenging directly the facets of an 'obesogenic environment', that is an environment which encourages the over-consumption of energy-dense foods, whilst reducing the opportunity for habitual physical activity, seems to represent the sole way forward in terms of obesity treatment and prevention. Some examples of how this can be accomplished are illustrated in Section 4 of this report.

The subsequent section now outlines some common issues in the debate around obesity and attempts to clarify some of the misunderstandings that surround them. The issues below have been identified due to the frequency with which they are misrepresented within popular media culture and would therefore benefit from a factual representation here supported by research evidence.

The issue	Clarification
1. Is there really an epidemic of obesity? • Professor Wright, Associate Dean at the University of Wollongong, Australia (2007) argues that there is no epidemic relating to obesity. She argues that this is all about people making money out of the solutions to obesity.	• The epidemiological evidence suggests that obesity has reached global epidemic proportions. • The UK has the fastest increase in the disease in Europe, with prevalence rates similar to those found in the US (Adult obesity rates have almost quadrupled in the last 25 years. Now 22 per cent of Britons are obese and three-quarters are overweight) (Davis *et al.*, 2004; Flegal *et al.*, 2002). • In children, the evidence suggests that obesity has reached epidemic proportions globally with the highest rates of childhood obesity observed in developed countries. • The number of young people who are overweight and obese in Britain has almost tripled in the past 20 years. • A longitudinal study (Wardle, Brodersen, Cole, Jarvis & Boniface, 2006) of an ethnically and socio-economically diverse sample of young people in Britain confirmed obesity trends (DoH, 2004b). Central obesity seems to be increasing particularly rapidly and the notion of 'puppy fat' that disappears upon maturation must be abandoned (Wardle *et al*., 2006). • (For a review of a commentary on the evidence of 'obesity as an epidemic', please see **Appendix 2**). •
2. Obesity and health • Not all people who are measured as 'overweight' or 'obese' will have the health problems associated with obesity such as diabetes or heart disease. Are some overweight and obese people healthier than thin people?	• There is a clear link between increased body fat (obesity) and increased risks of a number of serious disease outcomes. • There has been a reduction in people dying from cardiovascular diseases for a variety of reasons. This then results in more people living with these obesity-related chronic diseases as long-term conditions – at some cost for health services. • The associations between increasing obesity and mortality from obesity-related diseases are not simple. While there might be some apparent benefits for some elderly people of being overweight, in terms of surviving operations, research suggests that obesity and overweight in adulthood are associated with large decreases in life expectancy and increases in early mortality. These decreases are similar to those seen with smoking

The issue	Clarification
	(Peeters *et al.,* 2003). Furthermore, the relationship between excess mortality and obesity is best described by a 'J-shaped' curve (this is discussed further in **Appendix 2**). A brief explanation is given in this section of the report (**4. The BMI scale)** as body weight (expressed as BMI) increases, there is a curvilinear increase in mortality. • The increasing frequency of obesity in elderly people further complicates the clinical picture. For so-called 'fat-frail' individuals (Morely *et al.*, 2006), frailty is actually inside and not readily apparent. The substitution of muscle for fat is of particular concern, and combines the problems of frailty with those of being overweight. • Recent data from the US suggests that being slightly overweight may have benefits from an overall mortality point of view, however it doesn't suggest this is a disease-free benefit. Being overweight increases the risks of obesity itself. • (For a review of a commentary on the evidence of the obesity and health debate, please see **Appendix 3**)
3. The cost projections for obesity • The economic model used in the Foresight Report made inaccurate cost projections (£45.5 billion instead of £34 billion), which generated some cynicism (Professor David Speigelhalter, Cambridge University) about the wider debate about an 'obesity epidemic' or if the issues of obesity are really as serious as the Foresight Report suggests.	• Overall, the Foresight Report is as accurate as it can be in forecasting an increased cost for society of a greater prevalence of chronic diseases arising from obesity. • The areas of uncertainty are about the exact trends and associations with overall mortality do not diminish the main arguments.
4. The BMI scale • George Clooney and Russell Crowe would be described as obese and Brad Pitt and Mel Gibson are overweight using the BMI scale. • This measure of obesity does not take muscle density into account. Therefore the BMI measure is not a good measure for obesity.	• Although body mass index (BMI) is not devoid of its limitations, the gold standard (measures offering greatest validity/accuracy) alternatives (hydrodensitometry and/or dual-energy X-ray absorptiometry) are too expensive and not freely available. • For adult practice there is widespread agreement and evidence for the use of the body mass index. Moreover, BMI is currently the best available anthropometric estimate of fatness for public health purposes. • In children there is strong evidence for the importance of using a relatively stable method to assess adiposity (body fat) change such as

The issue	Clarification
	BMI when following risk of obesity. • (For a review of a commentary on the evidence of the BMI debate, please see **Appendix 4**)
5. Some individuals have a fat gene • Studies from the Wellcome Trust Case Control Consortium Project, (a collaboration of 24 leading human geneticists who analysed thousands of DNA samples from patients suffering with different diseases to identify common genetic variations for each condition) publicise evidence that there is a 'fat gene'. Followers of this belief detract from the Foresight Report believing no amount of measures in society, such as planning, cycle pathways etc will make a difference to those who have the 'fat gene'.	• Genetic potential does not lead to corporeal reality. • Take the example of height. The expression of the genes responsible for an individual's height depends upon the environment in which the individual lives. Those who have the potential to be tall will not realise this if they are exposed to poor living conditions and inadequate nutrition. • Individuals who have a genetic propensity to gain weight live in an environment that makes full expression of this genetic potential possible – hence the rise in obesity during a period where there could not have possibly been any change in the gene pool. • Contrary to what the statement suggests the evidence indicates that the most effective response to the obesity epidemic will be a change in an individual's environment rather than their genes. • (For a review of a commentary on the evidence of the fat gene, please see **Appendix 5**)
6. A need to stigmatise obesity • Some critics (D.Lawson from *The Independent* 18/10/2007 "We can seek a 'cure' for obesity. But it might be more effective to start stigmatising it") suggest the Foresight Report has failed to 'stigmatise' obesity. If obesity is stigmatised it would motivate more people to take individual responsibility for their food intake and increase exercise.	• The literature clearly points out that the obese population are acceptable targets of stigmatising behaviour in modern society. Indeed obesity has serious negative psychological consequences including; social exclusion, depression and reduced self-esteem. • Obese adults, particularly women, face prejudice and are often stigmatised as a result of their size. • Judgments about character traits attributed to obese individuals include being lazy, gluttonous, or lacking will power and it is often assumed, therefore, that obese individuals are responsible for their weight problems, which might promote self-blame and exacerbate distress. • Obese individuals experience low self-esteem and further stigmatisation is likely to have a greater negative impact. In fact, many overweight people already feel stigmatised and this may lead to an unwillingness to participate in schemes to loose weight and

The issue	Clarification
	limit adherence to treatment programmes. • (For a review of a commentary on the evidence of stigmatising obesity, please see **Appendix 6**)

Section 2: Social policy frameworks for local government action

The Lyons Report stated that there are strong and compelling arguments for local government to be a device for allocating public resources and effort efficiently and effectively to secure the wellbeing of citizens. The report suggested that local government should have a wider strategic role and should use its powers and influence creatively to promote the well being of its citizens. This was referred to as 'place-shaping'. The place-shaping agenda should be at the heart of efforts to create local healthy communities (Lyons, 2007)

The government introduced the Local Government and Public Involvement in Health Act in 2007; however implementation of this act is in stages with guidance still to be produced. There are currently a number of green papers that relate to the work of the local authority. It is therefore not clear exactly how this act and other new legislation will change local authority priorities and functions, however key points that relate to areas that could influence a comprehensive obesity strategy are considered below.

The Local Government Act 2000 and the Local Government and Public Involvement in Health Act 2007 have attempted to strengthen visible and effective political leadership and democratic legitimacy by changing the structure of local government (Stoker et al, 2007)

The Local Government Act 2000 required local councils to adopt one of four leadership models; following research and consultation the 2007 act reduces this to only two options for the vast majority of local authorities. Research also indicated that political stability was an important factor in successful councils (Stoker *et al.*, 2007). The 2007 act thus introduced a four-year elected term of office for either of the two models shown below:

- Elected mayor and elected member cabinet executive.
- Elected council leader and elected member cabinet executive.

Following full implementation, local authority areas will begin to enjoy more stable longer term political leadership during which longer-term objectives can be established. This longer term leadership role gives leaders the opportunity to drive the obesity agenda forward through all areas of local government operations and influence.

The Local Government and Public involvement in Health Act 2007 requires the local authority and its partners to prepare a Sustainable Community Strategy for promoting or improving the economic, social and environmental wellbeing of their area. The strategy could be a critical planning tool to develop a local strategy to

reduce obesity. The Sustainable Community Strategy (SCS) should take account of other local strategies.

It has been suggested that the lead member for health should take a lead role in driving this agenda. In Doncaster Metropolitan Council this position has been established as the member for children and public health. In other areas the lead member for health is for adult social care and health (Nottingham, Rotherham Metropolitan Borough Council and the London Borough of Bexley). Kent County Council has established this role as a lead member for public health.

The different positions for lead members for health will have some effect on what they are able to affect and influence. Clearly these councillors will have a significant leadership role in developing an obesity-aware SCS within their spheres of influence. However the Foresight Report suggest that a paradigm change is required in our response to obesity; obesogenic environmental factors (for an explanation, please see the footnote on page 7) cuts across all local government functions. Therefore if local communities are to holistically embrace the required change in thinking, it is suggested that the elected mayor or council leader should be the driving political force behind a comprehensive holistic obesity strategy.

Long-term strategies and planning

In 2006, the Department of Health (DoH) White Paper 'Our Health, Our Care, Our Say' sets out a new direction for improving the health and wellbeing of the population. It identified the need for directors of public health, adult social services and children's services to undertake regular strategic needs assessments of the health and wellbeing status of their populations. This collaborative, joint strategic needs assessment was formally introduce under section 116 of the 2007 act and is required for all local authority areas from April 2008. It should be a key component used to inform the SCS. DoH (2007)

Local strategic partnerships (LSPs) have been developed to bring partner agencies together to work jointly on local issues. They will continue to play a pivotal role in the development and implementation of the community strategy and thus a strategy to reduce levels of obesity. The solutions to an obesity epidemic will require long term coordinated intervention over many years. The local authority led Sustainable Community Strategy is a key vehicle through which a long-term vision for obesity can be developed and articulated. As an example, North East Lincolnshire has developed a community strategy that covers the period 2003-2022. It is their intention to use local area agreements (LAAs) to develop a more integrated multi-agency approaches "bringing a more effective targeting of services and resources towards strategic priorities" **North East Lincolnshire Council** (2007)

LSP and SCS priorities should also be a major influence on the planning environment with the integration of key objectives from the SCS into the development of the Local Delivery Framework (LDF) and the Local Spatial Plan (LSP). Guidance provided in 'Planning Together: Local Strategic Partnerships and Spatial Planning – a practical guide' (2007) published by the Department for Communities and Local Government suggests that "plans should be drawn up with community involvement and present a shared vision and strategy of how the area should develop. The new planning system therefore both offers, and requires, the development of a stronger leadership role for local authorities and elected

members, built on collaboration through LSPs and accountable delivery through LAAs". **Department for Communities and Local Government** (2007)

The place-shaping agenda utilising SCS, LSP, LAA and LDF could lead to the development of comprehensive local strategic plans. The local authority executive and it partners has both the vehicle and the authority to develop comprehensive, holistic and specific initiatives that will help to combat obesity and the obesogenic environment in the short, medium and long term.

Scrutiny and Comprehensive Area Assessment

Local arrangements for assessing the success of initiatives to stimulate healthy lifestyles and lessen obesity could fall to Overview and Scrutiny Committees (OSC). The 2007 act extended the role of OSC to include the performance of partner agencies if the partner agency is responsible for contributing to a local improvement target. Essex County Council undertook a scrutiny review to explore how they were tackling childhood obesity locally. One of the findings from the report suggest that although partnership arrangements in Essex are complex and need to be clarified. They hoped that "Local Area Agreements, Children and Young People's Plan and The Children's Trust approach will help to ensure strong partnerships with an effective accountability framework". **Essex County Council**, (2007).

A new joint inspection regime to replace the Comprehensive Performance Assessment will be introduced from April 2009. The Comprehensive Area Assessment (CAA) is currently the subject of a consultation process but will include inspection information from the Audit Commission, Commission for Social Care Inspection, Healthcare Commission, HM Inspectorate of Constabulary, HM Inspectorate of Prisons, HM Inspectorate of Probation and Ofsted. The CAA "will specifically check the progress that the local authority and its partners are making towards achieving the targets set out in the LAA"**. Audit Commission** (2007)

Section 3: Inequalities and obesity

Obesity presents a greater challenge for some groups in society than others. Particular attention should be addressed to these groups if the health inequalities associated with obesity are not to be increased. Age, gender, social class, ethnicity and geographical region will be discussed below. Three common issues are as follows:

- differences in the prevalence of obesity between some groups
- key differences in patterns of body fat distribution and, therefore, different disease consequences
- differences in uptake of prevention and treatment services.

It is important to note that the research about inequalities and obesity is still fairly limited.

Age and obesity

A threefold difference in the prevalence of obesity is found in comparing people of middle age (45 years) with young adults (16-24 years). This pattern of difference has remained stable with the changing levels of obesity across all groups in society. The main disease risks associated with obesity increase with age – for

example, heart attacks and strokes become more likely in later life. However, there is some evidence that obesity in later years (70+) poses less of a risk to health than obesity in early years and in middle age. But this issue needs more research before the policy implications can be clarified. There is evidence that prevention programmes premised on individual motivation to make lifestyle change are best targeted at those of middle age where the risks of the consequences of obesity are more immediate.

Age is also a factor in considering inequalities associated with obesity and its prevention. Studies of the life-course and inter-generational risks of obesity are important to understanding how inequalities are transmitted and amplified within social groups at different ages. A person with obese parents is more likely to become obese themselves reflecting social determinants in early life and childhood as well as genetic factors. Some periods in life may be more critical for development of obesity and a focus has been on foetal development, early childhood and adolescence.

Gender and obesity

In the past, body size has been considered much more of an issue for women than men. However, the prevalence of obesity and the projected trends show that obesity is more of a problem for men than women. The Foresight analyses suggest that 60 per cent of men (in comparison to 50 per cent of women) will be obese by 2050. In addition there are important differences in the patterns of body fat distribution such that there may be different consequences for health in comparing men and women. Men typically accumulate fat around the waist and it is this distribution that carries greatest risks for morbidity. Certainly men are more likely to be affected by cardiovascular diseases at an earlier age than women; mortality from heart attacks and strokes is higher. A further consideration relating to gender is the differences between men and women in the uptake of prevention and treatment services relating to obesity. For example, a large survey of the uptake of primary care services showed that men were much less likely to have had their BMI recorded than women.

Ethnicity and obesity

Obesity prevalence and disease risks vary between ethnic groups in the UK. For example, levels of obesity in women are lower (17.2 per cent) in Bangladeshi women and higher (38.5 per cent) in black African women, compared to the general population figure of 23.2 per cent. However, different patterns of fat distribution between ethnic groups mean there are important differences in the health risks associated with apparently similar levels of BMI. People of South Asian origin are at greater risks of cardiovascular diseases. An annual health survey for England[2] (2005) reveals important differences between health-related issues of different ethnic groups. Nearly a third of Pakistani men (31 per cent) have angina compared with 13 per cent of men in the general population and high prevalence of angina is also found in Indian women (15 per cent) compared with

[2] The Health Survey for England is a series of annual surveys about the health of people living in private households in England. It is carried out by the Joint Health Surveys Unit of the National Centre for Social Research and the Department of Epidemiology and Public Health at the Royal Free and University College Medical Schools. It is commissioned by the Health and Social Care Information Centre for the Department of Health

the general population of 9 per cent. Bangladeshi and Pakistani women reported relatively high levels of stroke (12 per cent and 10 per cent respectively compared with 5 per cent in the general population). Stroke rates were also relatively high among black Caribbean and Irish men (12 per cent and 9 per cent). The equivalent for men in the general population is 6 per cent. These health differences are not however associated with differences in obesity levels as most males from minority ethnic populations have markedly lower rates of obesity than among the general population. Instead it is suggested that the higher risk of coronary heart disease is associated with the distribution of fat around the abdomen. South Asian men are particularly more likely to have a high waist to hip ration than the general population. It is this pattern of fat distribution that potentially mediates the risk of stroke and coronary heart disease.

Children and obesity

Among children in England, obesity was relatively high among black African, Caribbean and Pakistani boys (42 per cent, 39 per cent and 39 per cent) and black African and Caribbean girls (42per cent and 40 per cent). Within the general population, 30per cent of boys and 31 per cent of girls are classed as overweight or obese (Health Survey, Health and Social Care Information Centre, 2005). A study in the US found that there were marked ethnic-based differences in weight accumulation in young adults. The study also found that later birth cohorts experienced an earlier onset of obesity. The conclusion of this study suggests that interventions should target young people with particular targeting of minority ethnic groups (McTigue *et al.*, 2002). An investigation into the role of ethnicity in childhood obesity in Germany found that known risk factors for being overweight were especially poor education of the mother and watching more television. This explained most of the difference in the prevalence of obesity by ethnic origin (Kuepper-Nybelen, 2005). An American study also found that low income and minority children watch more television than white advantaged children and are potentially exposed to more television commercials advertising high-calorie, low nutrient food during an average hour of television programmes (Kumanyika and Grier, 2006). In other words, factors in the obesogenic environment have additional adverse effects for those in vulnerable groups.

Social class and obesity

There is some evidence that obesity is commoner among groups with less education and other indicators of lower socio-economic status. The burden of obesity consequences in terms of risks of diabetes and cardiovascular diseases shows a very clear social class gradient. National surveys show that women with lower education levels are less likely to use healthy approaches to weight loss, such as combined physical activity and energy intake reduction, than more educated women and are less likely to participate in weight loss programmes (French *et al.,* 2003). In contrast to UK data, a study in the US found that while there was a lot of literature to support a higher prevalence of obesity among black and minority ethnic populations than with the general population, obesity is more likely to occur in lower socioeconomic groups within black and minority ethnic populations (Zhang and Wang, 2004). However, what is consistent across both UK and US populations is that environmental factors can have larger effects on disadvantaged and minority children than on their advantaged white peers, which

will contribute to disparities in obesity rates. Kumanyika and Grier (2006) argue that winning the fight against childhood obesity in low income, minority ethnic communities will depend on policy makers and public services desire to change the social and physical environments in which these communities exist.

Regional differences and obesity

Finally, geographical differences have been found in the prevalence of obesity across England. For example, the levels of obesity in some areas of Yorkshire are up to twice as high as areas in the southeast of England. Again, the main disease outcomes also show regional variations with worse health in the northwest of the country in comparison to the southeast.

Section 4: Key areas of influence and responsibility

Summarising the Foresight Report for Local Government

Background

Notwithstanding the continuing areas of debate, there is international agreement that impaired body functioning and disease increase with high levels of body fat (WHO 2000). Body mass index (BMI) is the most widely used measure of body fat. This measure has some limitations but these are overstated in the media (as discussed in **Section 1**) – the science shows this to be a robust measure of body fat. Obesity is a condition of excess body fat indicated by a BMI above 30kg/m^2 (Royal College of Physicians, 2005). As noted earlier this is a somewhat arbitrary cut-off point but there is overwhelming evidence that above this degree of body fat there are significantly increased risks of disease.

In the last three decades trends in the prevalence of obesity have led to it being increasingly prioritised as a public health problem in many parts of the world. Indeed the World Health Organization (WHO) has spoken of obesity as the greatest health threat of the 21st century (WHO 2000). Trends in levels of obesity in the UK are among the most worrying in Europe. Approximately a quarter of adults are obese according to BMI measures and these numbers are projected to increase (Zaninotto *et al.*, 2006). Various commentators and reports have drawn attention to the limitations of the UK response to this epidemic (National Audit Office 2000; Wanless Report, 2004).

However, more recent government statements on public health identify obesity as a priority, meriting specific public service agreements and policy targets (HM Government 2004). The key target arising from 'Choosing Health' (the government white paper on public health published in 2004) was to halt the year-on-year increase in childhood obesity. National guidance for health and other services has been provided by the National Institute for Health and Clinical Excellence (NICE 2006). Local authorities are identified as key players in the prevention of obesity.

In 2006 the Foresight section of the Government Office for Science commissioned work to draw together a range of expertise about obesity with a view to illuminating a sustainable response for the coming decades (Foresight 2007). A number of modelling and systems mapping exercises were undertaken, along with more conventional literature reviews, in an effort to integrate different disciplines and to

forecast the likely trajectory of the problem and effective responses. A report published in 2007 argues obesity is a complex problem that will require a paradigm shift across all levels of governance if it is to be tackled. Without a sustainable system-wide response the report estimates that more than half of adults will be obese by 2050, with a consequent increase in costs for society. The full title of the report was 'Tackling Obesities: Future Choices – Project Report'; hereafter 'Tackling Obesities' or the Foresight Report.

The forecasting of levels of obesity and future society scenarios is a somewhat inexact science. Not surprisingly, therefore, criticisms of the report have focused on the projected levels of obesity and also on the estimates of the health risks associated with obesity. Section 1 of our report has addressed these areas of scientific debate and media interest. There are inevitable areas of uncertainty about the scale of the problem but they should not deflect from the main thrust of 'Tackling Obesities' that there is a major problem that will require a complex response.

In early 2008 the government published 'Healthy Weight, Healthy Lives: A Cross Government Strategy for England' (HM Government 2008); hereafter, 'Healthy Weight, Healthy Lives 2008'. This set out the new ambition: "of being the first major country to reverse the rising tide of obesity and overweight in the population by ensuring that all individuals are able to maintain a healthy weight." (**HM Government** 2008:xi) In anticipation of 'Healthy Weight, Healthy Lives 2008' the government set out a new public service agreement in late 2007 in relation to child health and wellbeing. The new ambition was: "by 2020 we will have reduced the proportion of overweight and obese children to 2000 levels" (**HM Government** 2008:xi). 'Healthy Weight, Healthy Lives' draws on the Foresight Report analyses.

The scene is set therefore, with the Foresight Report 2007 and 'Healthy Weight Healthy Lives 2008' as the key documents for grasping the implications of obesity for local government. To translate the Foresight Report and integrate the strategy responses and plans set out in 'Healthy Weight, Healthy Lives' we have designed a series of matrices (pages 18-30). However, before presenting these matrices it is necessary to explain a number of concepts used in the Foresight analyses.

Mapping key causes of obesity

The Foresight Report draws on a mapping exercise to examine the determinants of obesity (pages 79-93). The map was constructed following 'detailed advice from a large group of experts' to provide a 'whole systems' view of key determinants of obesity and the relationships between them. In other words, it attempts to map all possible influences in the causes of obesity within our society.

The mapping demonstrates the complexity and interdependence of the determinants of obesity. The report presents the determinants within three feedback loops that play a fundamental part in energy balance. It argues that across the complex range of determinants we are more or less locked into an unhealthy energy balance in modern Britain. A large number of variables (108) are identified with a direct or indirect impact on the energy balance feedback systems. Within these are variables with greater potential to effect change.

The full 'obesity system' diagrams (presented as fold-out A3 size pages within the report at pages 85, 91, 93) are dauntingly complex. However, the system map can be simplified in terms of seven ‘thematic clusters’ (groups of closely-linked variables) and four direct determinants or ‘key variables’ with the most direct influence on the energy imbalance loops.

Briefly, the ‘thematic clusters’ (Foresight Report, pages 82-83) are as follows:

- **physiology** cluster (grouping of variables) contains a mix of biological variables such as genetic predisposition
- **individual activity** focuses on variables such as individual recreation and transport activity
- **physical activity environment** includes variables that may facilitate or obstruct physical activity such as how easy it is to walk within a particular environment
- **food consumption** includes variables related to the food market and patterns of consumption of food products including portion sizes and energy density of foods
- **food production** draws together variables driving the food industry and the wider socio-economic trends shaping food consumption patterns
- **individual psychology** contains the psychological variables known to influence obesity and health behaviour change including, self esteem and levels of food literacy
- **social psychology** focuses on influences at the societal level such as education and attitudes to body size and weight.

The ‘key variables’ (pages 86-87) are as follows:

- **level of primary appetite control** in the brain – this is presented as the key variable within the physiology cluster of variables, emphasising the importance of physiological drivers of appetite in understanding energy imbalance from this viewpoint
- **force of dietary habits** that keep individuals and groups from adopting healthier eating patterns – this is the key variable within the food consumption and food production clusters
- **level of physical activity** is seen as the most direct determinant on energy balance loops within the physical activity clusters
- **level of psychological ambivalence** draws together the psychological variables and is presented as the key through which the various motivations, social drivers, societal behaviours directly influence the energy balance loops.

The matrices presented below (pages 18-30) are designed to work with the ‘thematic clusters’ and the ‘key variables’ of obesity identified by the Foresight mapping. We will now explain the rationale for focusing on certain areas of local government influence.

Rationale for design of the matrices

The key challenge for local government is to provide strategic leadership among its partners to create sustainable system-wide change, promoting healthy lifestyles and healthy weights. (Strategic level considerations have been introduced in section two of our document.) The Foresight Report has implications therefore across all levels of local government, including the myriad range of services commissioned and directly delivered. To consider the Foresight implications across all areas would make for a document that is even more complex than the original! Therefore, four major areas of local authority influence and responsibility have been selected for more detailed analyses. These four are:

- Planning
- Children's services
- Adult social care
- Parks and leisure.

Of course there are many other areas of local authority responsibility; including environmental health services, waste management services, social housing. The Foresight Report has implications for these other areas but the implications are less direct or pressing in comparison to the selected four.

So, the matrices presented below are designed to work with the ‘thematic clusters’ and ‘key variables’ identified by Foresight and to focus in turn on four key areas of local government influence.

Matrix One: Planning

Local government planning has the power and influence to 'unlock' the unhealthy energy balance in the design and maintenance of healthy communities. Column 1 identifies the key variables from the Foresight Report that will have a direct impact on the prevalence of obesity. Column 2 gives examples of local government action in this area and Column 3 relates this area to current government strategy.

Variables relevant to obesity and local government planning	Examples of leadership and action	Supporting government strategy
Theme: Physiology key cause: Primary appetite control One of the barriers to breast feeding is the lack of designated space in community areas for breastfeeding mothers. The majority of public spaces and buildings have not been planned to facilitate breastfeeding or best weaning practices but government policy now encourages planners to consider these issues. Planners can explore opportunities for developing spaces for breastfeeding in public places for example shopping centres, supermarkets, libraries and food outlets and a range of other areas		
• Breastfeeding and weaning	Breastfed babies may have some protection against obesity in later life (Gillman *et al.*, 2002) although further research is required in this area. There are some examples of workplace breastfeeding policies (Canada and adapted by York University). Barnsley LAA contains obesity targets but also links to opportunities for the environment to encourage breastfeeding.	• The government will develop a code of best practice for employers and businesses on how to facilitate breastfeeding. (HW, HL, 2008:13-14). • The government will invest in training for planners on health implications of local plans (HW, HL, 2008: 21).

Variables relevant to obesity and local government planning	Examples of leadership and action	Supporting government strategy
Theme: Individual activity key cause: Physical activity Those involved in local government planning can explore ways to increase the amount of individual activity in the local environment. This can be done by electing to become a 'healthy town' (see below) or forging partnerships with other agencies to support 'activity' or 'sports' projects:		
• Level of recreational activity • Level of domestic activity • Level of occupational activity • Transport activity • Degree of innate activity in childhood • Learned activity patterns of childhood	EPODE is a French project and set out to impact upon the planning processes to create a 'healthy town'. A number of agencies became involved in the project from town planners, health, education and the voluntary sector. The outcomes for the project which included several towns in France were staggering. The French 'fit' communities led to the proportion of overweight boys almost halving from 19 per cent and the rate among girls dropping from 10 per cent to seven per cent. Similar projects have been carried out in Australia and Finland. Over the course of five years, the target group children aged between five and 12 years, are measured and weighed annually to calculate their body mass index. In an interview with a school doctor, parents are given a letter explaining their child's weight status and guidelines for diet and physical activity. Each town receives suggestions for activities, diets and community initiatives. Leaflets are distributed in shops and supermarkets. An example of success for one of the French towns is as follows: The city of Royan with 1,365 children aged 5-12. In 2004, 17 per cent were overweight. In 2007, only 15 per cent were categorised as overweight. Planning processes could be adapted to contain a health impact assessment which enables the health promoting elements of a development or planning policy to be assessed.	• The government will invest £30 million in Healthy Towns working with selected towns and cities to build on the successful *Ensemble Prevenons l'Obesite Des Enfants (EPODE) model used in Europe* • Local strategic partnerships (LSPs) bring together representatives from health, local government, education and other public sector agencies – able to develop local area agreements which offer the potential to pool funding at local level for programmes that can best address local need.

Variables relevant to obesity and local government planning	Examples of leadership and action	Supporting government strategy
Theme: Physical activity environment key cause: Physical activity Traditionally the environment has been planned around car drivers who have been given priority over pedestrians and cyclists. Now there is a suggestion that towns are redesigned as 'gyms' (BBC News24 20/02/08). Staircases could be prominent in new buildings to encourage use of the stairs instead of the lift, or pedestrian walkways could be attractively landscaped and cycle pathways given priority over car access. Play areas should be designed to be accessible and inclusive to all children including disabled children.		
• Access to opportunities for physical exercise • Walkability of living environment • Safety of walking, cycling and public transport • Opportunity of walking, cycling and public transport • Dominance of car transport in planning • Dominance of sedentary employment • Cost of physical exercise	Peterborough is a sustainable travel demonstration town – Peterborough is one of three towns taking part in the government's sustainable travel demonstration town programme. Peterborough council has used part of £3.2 million in funding that is available to implement individualised travel marketing, which works with households to offer tailor made information and support to enable them to consider alternatives to the car. The impact has been • 13 per cent reduction in car use • 21 per cent increase in walking • 25 per cent increase in cycling • 13 per cent increase in public transport use. (HW, HL, 2008:21) The World Health Organisation (WHO, 2007) suggest actions in the workplace setting could include: flexible working hours, reduced rates for gym membership, incentives for cycling or walking to work, access to showers and changing facilities and information on nutrition at work place canteens. In Norway a Planning and Building Act is being revisited to create more activity-enhancing surroundings (WHO, 2007).	• The Children's Plan announced new investment of £225 million between 2008 and 2011 to allow up to 3,500 playgrounds to be built or renewed and made accessible to children with disabilities. A new strategy on play to be produced 2008 (HW, HL, 2008: 17). • Cycle pathways and walking to take priority when developing or maintaining roads (HW, HL, 2008: 21). • Any new workplaces are linked to walking and cycling networks (HW, HL, 2008: 21). • All planning applications for new developments prioritise the need for people to be physically active as a routine part of their life. The includes for example staircases positioned to encourage use and are clearly signed (HW, HL, 2008: 21). • Invest in training for planners (urban, rural and transport) architects and designers on the health implications of local plans, for example, spatial plans and planning applications (HW, HL, 2008: 21).

Variables relevant to obesity and local government planning	Examples of leadership and action	Supporting government strategy
Theme: Food consumption key cause: Dietary habits The over consumption of food or consuming high calorie foods on a regular basis leads to weight gain. Local Authority planning departments could consider how they might limit the availability of these foods by challenging developers plans for fast food outlets		
• Convenience of food offerings	Free fruit to infant school children in the UK. There is a working model of this in Hull. The programme is called 'Eat Well, Do Well'. The programme involves the city council providing free healthy meals to children in primary and special schools. The University of Hull is conducting the evaluation which will find out if the healthier meals are making a difference by: helping pupils to do better in school; helping them come to school more often and get to school on time; affecting pupils' behaviour and number of exclusions. They will also find out what pupils and their parents think about healthier food. Contact details for further information: eatwelldowell@hullcc.gov.uk A ban on vending machines in schools in France took effect September 2005 (Foresight Report p73). Sales tax on soft drinks in Latvia (Foresight Report p73). Reward tokens given for healthy choices in Iceland (Foresight Report p73).	• A healthy code of practice to be developed, for example, to include information on the nutritional content of food in a wide range of settings, theme parks, visitor attractions, restaurants, take away foods, to be clear, effective and simple to understand (HW, HL, 2008: 18). • Local authorities will be given powers to prevent fast food outlets opening near parks and schools.

Variables relevant to obesity and local government planning	Examples of leadership and action	Supporting government strategy
Theme: Individual psychology key cause: Psychological ambivalence Perceptions of danger in the environment can impact upon an individual's willingness to walk in their local area. Designing out crime and building 'safe' neighbourhoods could help to tackle this		
• Perceived danger in the environment	Examples of increasing physical activity to meet the Public Service Agreement for obesity are addressed in the following ways: • School sport strategy • The Big Lottery Funds Play Initiative • The School Travel Scheme (Choosing Health: Obesity Bulletin, May 2006).	• Safety in the local community and perceptions of danger and crime. The 'Manual for the streets' gives advice on effective street design that encourages people to walk and cycle to local destinations (HW, HL, 2008: 21).
Theme: Social psychology key cause: Psychological ambivalence People will make healthy choices more often if the surrounding environment is supportive.		
• Exposure to food advertising • Perceived lack of time	To promote cycling to and from work. Austria and Sweden started competitive initiatives between companies (World Health Organisation, 2007).	• £75 million to be invested in an integrated marketing programme to inform and empower parents to make changes to their children diets and level of physical activity.

Matrix Two: Children's services

Children's services have the power and influence to 'unlock' the unhealthy energy balance in the lives of children and their families. Column 1 identifies the key variables from the Foresight Report that will have a direct impact on the prevalence of obesity. Column 2 gives examples of local government action in this area and Column 3 relates this area to current government strategy

Variables relevant to obesity and children's services	Examples of leadership and action	Supporting government strategy
Theme: Physiology key cause: Primary appetite control Pregnant women with young children are frequent users of children's services. These services could do more to support optimal growth and body composition in the ante-natal period. There is some evidence of a link between breastfeeding and reduced obesity in later childhood.		
• Embryonic and foetal growth • Maternal body composition • Breast feeding and weaning • Degree of GI signalling (or healthy eating advice)	The 'Healthy Start' scheme (the reformed Welfare Food Scheme DoH, 2007) offers fresh fruit and vegetables, as well as milk and formula, helping to ensure that breastfeeding and bottle feeding mothers benefit equally from the scheme. Improving support for breastfeeding and weaning is an obvious key area of influence and responsibility. The choice of foods in children's services can support or undermine the biological mechanisms for recognising when you are full. Eating styles – for example, chewing fully within an unrushed meal – can contribute as well.	• The government will invest in information campaigns and a national helpline. It will develop a code of best practices. It will develop guidance for professionals working with young children. It will invest further in support for families at greatest risk (HW, HL. 2008: 13-15).

Variables relevant to obesity and children's services	Examples of leadership and action	Supporting government strategy
Theme: Individual activity key cause: Physical activity Interventions likely to be successful at changing behaviour are those that engage the whole family (although individual activity session do play a role, particularly in introducing new activities and experiences to children)		
• Parental modelling of activity • Learned activity patterns of early childhood • Degree of physical education • Opportunity for team-based activity • Socio-cultural valuation of activity • Level of recreational activity • Transport activity • Functional fitness	**'Watch It and Nip It in the Bud'** was established in Leeds in 2002 and supported by the Neighbourhood Renewal Fund. There are four key components: frequent individual appointments; healthy education lifestyle plans; group activity sessions and parental group sessions. The sessions are run by Health Visitor Trainers www.cdhpp.leeds.ac.uk/services/watch.php Other areas run the **MEND programme** which takes an integrated, holistic approach to obesity prevention for the whole familiy. Children and families spend one hour learning about nutrition and how to change eating behaviour and one hour taking part in activities. This has been piloted in Lewisham and Bromley and was recently awarded £169,000 by The New Deal for Communities (NDC) to extend the randomised controlled trial for MEND. Wandsworth link LAA targets on obesity from a PCT perspective. 200 families with children aged 7-13 to take part in the MEND weight management programme. Southwark, London has written a Parenting Support strategy for 2006-9. One of the goals is to embed positive parenting across all agencies in Southwark.	• The government's ten-year Children's Plan was launched December 2007 and one of its targets is to reduce the proportion of overweight and obese children to the same level as in the year 2000 by 2020. • Investment in 'parenting advisors'. The Parenting Fund was launched in 2004 by the Minister for Children and Families. It is a major investment in parenting support right across the voluntary sector. • Expert parent support can be accessed on line http://www.parentscentre.gov.uk/educationandlearning/

Variables relevant to obesity and children's services	Examples of leadership and action	Supporting government strategy
Theme: Physical activity environment key cause: Physical activity Children's services are often well-placed to take a lead role in shaping the development of a physical activity environment for children; this role will need to be a supportive one to help children access opportunities for physical exercise. Children most at risk may be reluctant to participate in programmes without individual support and encouragement (The Audit Commission with the National Audit Office and the Healthcare Commission, 2006)		
• Access to opportunities for physical exercise • Cost of physical exercise • Opportunity of unmotorised transport (cycling and walking) • Dominance of motorised transport (a need to prioritise cycling and walking with children)	A local strategic partnership (LSP) could support peer advocates for children or health ambassadors which have had some success in supporting children and young people to engage in physical activity (Healthy Living, Barnsley Evaluation, 2007) In Bradford, the PCT, Yorkshire sport and the local authority have jointly funded a childhood obesity coach who works in partnership with Bradford Bulls to encourage children to become more active. 'Walking buses' are now becoming popular. www.walkingBus.com In Hertford, a walking bus for 30 children and volunteers has been operating since 2002. It is not unusual for the walking bus to move faster than the traffic on the main road! A further 10 Cycling Demonstration Towns in England, as well as the first large Demonstration City is planned. This will mean nearly three million people will have the chance to benefit from best practice and promotion of cycling. Darlington is a cycle demonstration town and has quadrupled the proportion of children cycling to school. Aylesbury has also seen a five-fold increase in residents using a bike as one of their two main means of transport in the last two years. www.gnn.gov.uk/environment	• Local strategic Partnerships (LSPs) bring together representatives from health, local government, education and other public sector agencies – able to develop local area agreements which offer the potential to pool funding at local level for programmes that can best address local need. • School playgrounds are designed to encourage varied and physically active play (HW, HL, 2008: 21). • 'Football and health' (May 2005) highlights the role of football clubs working with the NHS and other stakeholders . • Dept of Transport invests £140m over the next three years to allow an extra 500,000 10 year-olds across England to take part in 'Bikeability' cycle training by 2012, equipping them to cycle safely and responsibly. • The government plans to build another 250 Safe Links to Schools, connecting around 500 more schools to the National Cycle Network. Many schools with links have already doubled the number of pupils cycling to school.

Variables relevant to obesity and children's services	Examples of leadership and action	Supporting government strategy
Theme: Food consumption key cause: Dietary habits Food habits have changed significantly, with many children in the UK not eating the recommended portions of fruit and vegetables. A significant contributor to the increasing rate of crime, aggression, depression and poor school performance is poor nutrition. Children's services have a key leadership role in influencing, shaping and changing the behaviour of children's dietary habits		

Variables relevant to obesity and children's services	Examples of leadership and action	Supporting government strategy
• Food exposure • Tendency to graze • Deskilling • Convenience of food offerings • Food variety, abundance and palatability • Energy density of food offerings • Portion size • Rate of eating	The statement above is the conclusion of an inquiry held by the Associate Parliamentary Food and Health Forum, which issued a report urging the Government to fund a campaign to research, increase awareness and encourage us to eat more fish and whole foods high in essential fats, vitamins and minerals. Research findings to date show: • Children with learning and behaviour problems improve focus, concentration and school grades when given essential fat supplements and IQ scores improve when given multi-vitamins • Eating breakfast and a low glycaemic diet, low in sugar, improves behaviour and concentration • Supplementing B vitamins improves depression and symptoms of schizophrenia and stops or slows down memory decline in older people. In Bolton, a joint initiative between Bolton Council, Bolton Wanderers FC and the PCT, aims to encourage children to eat healthily and educate families on how to pack a healthy lunch box. Youngsters in ten primary schools in Bolton have been split into 'football teams'. Pupils with a nutritious lunch box will score goals for their team. All ten teams will be entered into a prize draw for the chance to dine with the Wanderers. The Barking and Dagenham childhood obesity strategy and action plan has recognised that food production and dietary habits have a cultural origin. Through the LAA it has fostered increased willingness to work with the voluntary sector – in this case Barking and Dagenham Racial Equalities Council – to deliver programmes which are led by the voluntary sector working directly with communities.	• Local authorities will be given powers to prevent fast food outlets opening near parks and schools (HW, HL, 2008: xiii) • The Department for Children, Schools and Families will extend its healthy school meals programme, it will invest £500m between 2005-2011. • To promote a culture of healthy eating, the government now expects all schools – in consultation with parents, pupils and staff to adopt whole school food polices. The school food trust (SFT) www.schoolfoodtrust.org.uk provides guidance on how to do this (HW, HL 2008: 15). • All schools to be asked to develop healthy lunch box policies, so that those not yet taking up school lunches are also eating healthily (HW, HL, 2008: xii).

Variables relevant to obesity and children's services	Examples of leadership and action	Supporting government strategy
Theme: Individual psychology key cause: Psychological ambivalence The Foresight Report identifies the links between emotion, eating and self-esteem in children. There are a range of projects that work to help build social and emotional learning of individuals, for example SEAL www.bandapilot.org.uk/primary		
• Stress • Individualism • Food literacy • Social interaction • Self-esteem	Social marketing could make behaviour change a reality – recent research has identified that obese children have a greater snacking habit (50 per cent higher) than children of normal weight – it is the parents who purchase 80 per cent of the snacks. Programmes that support both children and parents to change their eating behaviour are likely to have a successful impact.	• A need to challenge the 'food on the go' habit, with children buying chocolate and sweets at retail outlets on their way to and from school. Further work is needed to look at aspects of the built environment or how building design influences people's food habits (HW, HL, 2008: 54). • The School Food Trust www.schoolfoodtrust.org.uk has invested 20 million of lottery funding to establish a network of 'Lets get cooking' cookery clubs aimed at encouraging both parents and children in healthy eating and the enjoyment of cookery. These programmes aim to build the confidence of children in preparing healthy meals (HW, HL, 2008).
Theme: Social psychology key cause: Psychological ambivalence TV watching has been identified as a key variable in the increased weight of children. While watching television, they are also vulnerable to media and advertising of particular foods and snacks. TV watching as a habit can extend into the over-reliance of 'passive entertainment options', such as the use of video games. Children's services can work with a range of agencies to explore 'wrap around' school activities and sports options for children		
• Exposure to food advertising • TV watching • Children's control of diet • Media availability and consumption • Availability of passive entertainment options	A ‘stay on site’ policy will reduce access to and consumption of fast food and in conjunction with the 'extended role of schools' a 'whole-school approach' can be adopted. This involves health professionals, school staff and parents. Hours from 8am to 6pm will be available in all schools by 2010 and a range of parenting classes, cookery classes, food co-ops, sports clubs and the use of leisure facilities will be planned (HW, HL, 2008: 16).	• Schools should consider the length of time for lunch and consider a 'stay on site' policy at lunchtime (HW, HL, 2008: 15).

Matrix Three: Adult social care

Adult social care services have the power and influence to 'unlock' the unhealthy energy balance in the lives of adults in receipt of social care living in the local community. Column 1 identifies the key variables from the Foresight Report that will have a direct impact on the prevalence of obesity. Column 2 gives examples of local government action in this area and Column 3 relates this area to current government strategy

Variables relevant to obesity and Adult social care	Examples of leadership and action	Supporting government strategy
Theme: Physiology key cause: Primary appetite control The choice of foods in adult social care services can support or undermine biological systems, for example, systems for recognising when to eat due to hunger instead due to desire. Eating environments and styles, for example, chewing fully within an unrushed meal, can contribute as well.		
• Consumption of high energy dense foods – such as processed food • Consumption of foods with a high glycaemic index	Signposting foods with a low glycaemic index to help with food choice.	• If the PCT and the local authority agree that there is sufficient need to promote maintaining a healthy weight then they can make this a focus of the LAA (HW, HL, 2008: 27).

Variables relevant to obesity and Adult social care	Examples of leadership and action	Supporting government strategy
Theme: Individual activity key cause: Physical activity A small degree of exercise will prevent additional health problems. Adult social care should be constantly thinking about supporting people to be active – 'use it or loose it' initiatives.		
• Degree of physical education • Socio-cultural valuation of activity • Level of recreational activity • Transport activity • Functional fitness	Physical fitness schemes for older people are recommended. Young and Dinan (1994) in the ABC of Sports Medicine http://www.bmj.com/cgi/content/full/309/6950/331 provide recommendations for fitness schemes for older people. Specific working examples include the Big Lottery Programme 'Fit as a Fiddle'. This initiative is designed to help older people to live a more healthy, active and fulfilling life. There are to be a wide range of projects which will be delivered at a national, regional and local level. A national training programme and educational resources will be designed to reach all older people and support the different agencies who work with them. Contact details are: fitasafiddle@ace.org.uk Dudley Metropolitan Borough Council has introduced a Smartcard to be used within its leisure services, enabling easier access to facilities.	• The government seek to develop the 'NHS choices' website to give highly personalised advice to all on their diet and activity levels, with clear and consistent information on how to maintain a healthy weight. (HW, HL 2008:xiv).

Variables relevant to obesity and Adult social care	Examples of leadership and action	Supporting government strategy
Theme: Physical activity environment key cause: Physical activity More can be done to make the physical environment enjoyable to walk in. Adult social care can work with other agencies to ensure that communities are safe to walk in and support more activity and partnership between social care support workers, personal assistants and adults in receipt of care		
• Access to opportunities for physical exercise • Cost of physical exercise • Opportunity of using other forms of transport other than the car, including walking, cycling	Nottinghamshire has explored affordable fitness and leisure facilities to tackle cost as a barrier to physical exercise Leeds North West PCT currently delivers or commissions a range of services in this field. These include **10% clubs** – offering practices an effective weight management service for their patients. This service is being expanded to offer a service to morbidly obese patients. **Physical activity referral** – this service provides a referral service for 16 GP surgeries. In addition, this service is closely linked to the 10% clubs, offering highly specific exercise opportunities for obese adults in Leisure Centres **South Asian Healthy Lifestyle project** – this project delivers a wide variety of opportunities for healthy living within the South Asian Community in the inner locality.	• The Local Government and Public Involvement in Health Act 2007 requires the local authority and its partners to prepare a community strategy for promoting or improving the economic, social and environmental well-being of their area. The strategy could be a critical planning tool to develop a local strategy to reduce obesity. • The government has plans to invest in a 'Walking into Health' campaign, aiming to get a third of England walking at least 1,000 more steps daily by 2012 (HW, HL, 2008:xiii).

Matrix Four: Parks and leisure

Parks and Leisure have the power and influence to 'unlock' the unhealthy energy balance in the lives of children and adults in the local community. Column 1 identifies the key variables from the Foresight Report that will have a direct impact on the prevalence of obesity. Column 2 gives examples of Local Government action in this area and Column 3 relates this area to current government strategy:

Variables relevant to obesity and Parks and leisure	Examples of leadership and action	Supporting government strategy
Theme: Physiology key cause: Primary appetite control New ways of working and new partnerships need to be formed to explore the potential for local people to access physical exercise and to increase their physical activity levels. Breastfeeding mothers should be able to continue to breastfeed in all facilities provided by parks and leisure services		
• Breastfeeding and weaning	Cardiff Council (2007) have developed a breastfeeding strategy to ensure all council buildings including those in parks and leisure adhere to good practice in providing breastfeeding space for mothers.	• The government will develop a code of best practice for employers and businesses on how to facilitate breastfeeding. (HW, HL, 2008: 13-14). • The government will invest in training for planners on health implications of local plans (HW, HL, 2008: 21).

Variables relevant to obesity and Parks and leisure	Examples of leadership and action	Supporting government strategy
Theme: Individual activity key cause: Physical activity Leisure services staff teams should be creative in the ways that they engage all members of the community. Perhaps leisure centre staff could become involved in outreach exercise programmes with vulnerable citizens like elderly or mental health groups. Leisure services staff team could also be instrumental in establishing local leagues that would ensure council pitches are fully utilised and the local community is engage with both physical activity and the use of local facilities.		
• Level of recreational activity • Transport activity	Dudley Metropolitan Borough Council have set up 'home zones' which are environments designed to support physical activity. Walkability audits are undertaken and the recommendations of these audits need to be incorporated into the transport, community safety and land use plans in order for 'home zones' to become a reality.	• Local strategic partnerships (LSPs) bring together representatives from health, local government, education and other public sector agencies – able to develop local area agreements which offer the potential to pool funding at local level for programmes that can best address local need. • Local delivery frameworks (LDF) and the local spatial plan (LSP). Guidance provided in 'Planning Together, Local Strategic Partnerships and Spatial Planning – a practical guide 2007' Department for Communities and Local Government suggests that "plans should be drawn up with community involvement and present a shared vision and strategy of how the area should develop. These plans should consider how physical activity can be promoted through the design and use of parks and leisure facilities."

Variables relevant to obesity and Parks and leisure	Examples of leadership and action	Supporting government strategy

Variables relevant to obesity and Parks and leisure	Examples of leadership and action	Supporting government strategy
Theme: Physical activity environment key cause: Physical activity Efforts should be made to encourage overweight people into non stigmatising exercise regimes at local facilities during which comprehensive healthy living advice could be given. Local councils need to pay attention to admission prices for use of leisure facilities as often pricing structures can become unaffordable for the most disadvantaged groups.		
• Access to opportunities for physical exercise • Walkability of living environment • Safety of walking, cycling and public transport • Opportunity of walking, cycling and public transport • Dominance of car transport in planning • Dominance of sedentary employment • Cost of physical exercise	Through Natural England, the Department of Health is working on a Physical Activity Care Pathway pilot. The 'pathway' is a means by which frontline health professionals can identify sedentary patients who would benefit – in terms of physical health – from increased levels of physical activity. This pathway has been designed to help facilitate the promotion of physical activity across primary care. The pathway is a tool for GPs and other professionals to use with patients who would benefit from a more active lifestyle and should result in signposting to local health walks and 'green' exercise schemes in addition to opportunities for local indoor activities. Physical Activity Care Pathway – pilot details The first wave launched in September 2007 in six London boroughs (Islington, Harrow, Haringey, Tower Hamlets, Southwark and Wandsworth) with eight GP practices involved. Wave two launched in March 2008 in six London boroughs with seven GP surgeries involved.	• Cycle pathways and walking to take priority when developing or maintaining roads (HW, HL, 2008: 21). • Any new workplaces are linked to walking and cycling networks (HW, HL, 2008: 21). • Invest in training for planners (urban, rural and transport) architects and designers on the health implications of local plans, for example, spatial plans and planning applications (HW, HL, 2008: 21).

Variables relevant to obesity and Parks and leisure	Examples of leadership and action	Supporting government strategy
Theme: Individual psychology Key cause: Psychological ambivalence As a priority local parks need to become safe places for people to go. Citizens need to perceive that the park is a safe place for them to be. Parks are then excellent vehicles for community activities and exercise.		
• Perceived danger in the environment	Rotherham Metropolitan Borough Council has installed simple posts on walkways that advise walkers how far they have walked from one position to the next, this tends to encourage walkers to 'go the extra post distance'.	• Safety in the local community and perceptions of danger and crime. The 'Manual for the streets' gives advice on effective street design that encourages people to walk and cycle to local destinations (HW, HL, 2008: 21).
Theme: Social psychology key cause: Psychological ambivalence People will make healthy choices more often if the surrounding environment is supportive. Parks and leisure services are seen as a significant component of local government with a central role to create a more active community. Local council leisure facilities like leisure centers need to be prioritised for investment to ensure that they are attractive to the community and council operated playing pitches need protection to ensure that they are not sold as development land.		
• Exposure to food advertising • Perceived lack of time	To promote cycling to and from work, Austria and Sweden started competitive initiatives between companies (World Health Organisation, 2007).	• £75 million to be invested in an integrated marketing programme to inform and empower parents to make changes to their children diets and level of physical activity.

Section 5: Conclusions and effective responses

In the later part of the Foresight Report there is a very detailed analysis of future scenarios (pages 95-103) and discussion of the effectiveness of various responses (pages 105-117). From a starting point of 56 possible policy interventions, the report identifies only five responses likely to be effective across all future scenarios (page 109). These have formed the basis of the government's strategy set out in 'Healthy Weight, Healthy Lives, 2008' and are set out below. We have concluded this report with examples to illustrate how a local government strategy may look across the five responses:

- **Increase the walkability and cyclability of the built environment** (urban and rural). Practical ideas here include building staircases in prominent positions which are well signposted to encourage people to take the stairs, as well as making best use of open park spaces such as distance markers telling people how far they have walked. Foresight identified this as the most effective response among those focused on the built environment and transport. It has most obvious implications for planning but also other areas of local government responsibility in providing and commissioning services. 'Healthy Weight, Healthy Lives 2008' mostly considers this area of response within plans for 'Building physical activity into our lives' (HW, HL pages 19-22).
- **Targeting health interventions for those at risk**. Foresight identified this as an important response for the health sector ahead of population-wide interventions or interventions focused on the disease consequences of obesity. Services provided and commissioned by local government are likely to play an important role in identifying and supporting groups at risk of obesity. Identify those most at risk including children and families from a low socio-economic class who are more likely to spend increased hours watching television than their more advantaged peers. 'Healthy Weight, Healthy Lives' considers this area of response mainly within its section on 'Personalised advice and support' (pages 24-25) and within the section on 'Children: healthy growth and healthy weight' (pages 13-17).
- **Controlling obesogenic foods and drinks.** This is identified by Foresight as an effective regulation response. The availability and exposure to foods and drinks that are known to be implicated in obesity are the focus here. Local government has power and influence to build partnerships with local businesses to improve the local food supply and limit the availability of obesogenic foods and drinks. Again, this is of relevance across local government areas of responsibility. 'Healthy Weight, Healthy Lives' sets out plans of response within the section 'Promoting healthier food choices' (pages 17-19).
- **Increasing the responsibility of organisations for the health of their employees**. Foresight envisaged this as a response option among a number of fiscal incentives. As a major employer local government will need to address this area. For example, employers can support corporate membership to gyms, provide showers in the work place and consider flexible hours. 'Healthier Weight, Healthier Lives' considers responses within the section on 'Creating incentives for better health' (pages 22-24).

- **Early life interventions.** Foresight identified this as the most effective response among those oriented to the family and far more effective than initiatives that might penalise parents. The majority of public spaces and buildings have not been planned to facilitate breastfeeding or best weaning practices but new government policy ('Healthy Weight, Healthy Lives, 2008') encourages planners to consider these issues. This is something that could be addressed through council planning policies for new buildings. Again this is of particular relevance to local government responsibilities for Children's services. 'Healthy Weight, Healthy Lives' sets out plans of response within the section on 'Children: healthy growth and healthy weight' (pages 13-17).

The five areas of most effective response are summarised in the table below. It should be emphasised again that these are not the only areas of response or only areas of local government influence.

Relevance of Foresight 'top five' policy responses to local government

	Planning	Childrens' services	Adult social care	Parks and leisure
Early life interventions at birth or in infancy		✓		✓
Controlling obesogenic foods and drinks	✓	✓	✓	✓
Targeting health interventions for those at risk		✓	✓	✓
Walkability and cyclability of the built environment	✓	✓	✓	✓
Increasing responsibility of organisations for employees		✓	✓	✓

'Top Ten' tips for local action

1. Rise to the challenge. We are on the verge of an obesity epidemic even though there are mixed messages from the media. Get a better understanding of what this means for your residents locally.
2. Prioritise Obesity prevention – take a holistic approach to tackling obesity and the obesogenic environment. For example, connect the obesity strategy to other strategies where possible such as reducing carbon emissions. Resist the simplistic individual lifestyle choice explanations and focus on the environment. The personal changes will follow with less resistance.
3. Target children and vulnerable groups in raising obesity awareness and providing opportunities.
4. Don't go it alone! Local strategic partnerships have been developed to bring partner agencies to work together on local issues such as obesity prevention.

5. Identify 'obesity champions'. This might be the lead for public health or the lead for children's health or a local mayor or lead councillor. They can capture support with their passion to tackle obesity.
6. Stay local. The Sustainable Community Strategy is intended to generate local action and solutions to obesity prevention
7. 'One size does not fit all'. Work with individuals at the grass roots level to find out what activity projects people would attend.
8. 'Practice what you preach'. Be a model employer and develop healthy workplace objectives.
9. Don't re-invent the wheel. There is a lot of evidence out there to show what works to combat and prevent obesity, this can be tailored to fit local circumstances. Learn from good practice elsewhere make information available to all agencies and signpost people to the evidence
10. Make information accessible. Help people understand practical examples of an unhealthy energy imbalance for example how much extra walking is needed to burn off a chocolate bar or a glass of wine.

References

Audit Commission, (2007), *Comprehensive Area Assessment. A joint consultation by the Audit Commission, Commission for Social Care Inspection, Healthcare Commission, HM Inspectorate of Constabulary, HM Inspectorate of Prisons, HM Inspectorate of Probation and Ofsted*. CW print

Stoker G, Gains F, Greasley S, John P and Rao N, (2007) *The New Council Constitutions, The Outcomes and Impact of the Local Government Act 2000.* Department for Communities and Local Government: London

Department for Communities and Local Government, (2007) *Strong and Prosperous Communities: The Local Government White Paper Implementation Plan: One Year on*. Department for Communities and Local Government: London

Department of Health (2007) *Guidance on Joint Strategic Needs Assessment* Department of Health (2007)

Canoy D and Buchan I, (2007) Challenges in obesity epidemiology. *Obesity Reviews* **8** (Suppl. 1) 1-11.

Center for Consumer Freedom (2005) *An Epidemic of Obesity Myths*. Washington DC, Center for Consumer Freedom. Available from www.obesitymyths.com/

Flegal K, Graubard B and Willimson D, (2004) Methods of calculating deaths attributable to obesity. *American Journal of Epidemiology*, **160**, 331-338.

Flegal K, Willimson D, Pamuk E and Rosenberg H. (2004) Estimating deaths attributable to obesity in the United States. *American Journal of Public Health*, **94**, 1486-1489.

Flegal K, Graubard B, Willimson D and Gail M, (2005) Excess deaths associated with underweight, overweight and obesity. *JAMA*, **293**, 1861-1867.

French S A *et al.* (2003) Perceived barriers to and incentives for participation in a weight-loss programme among low-income women in WIC. *Journal of the American Dietetic Association*

Kopelman P, (2007) Health risks associated with overweight and obesity. *Obesity Reviews* **8** (Suppl. 1) 13-17.

Kuepper-Nybelen J, (2005) Major differences in prevalence of overweight according to nationality in pre-school children living in Germany: determinants and public health implications. *Archives of Disease in Childhood,* **90**, 353-366

Kumanyika S and Grier S (2006) Targeting interventions for Ethnic Minority and Low Income populations www.futureofchildren.org **16** (1) Spring 2006

Lyons M (2007*) The Lyons Inquiry into Local Government*, The Stationary Office: London

McTigue K M, Garrett J M, Popkin B M, (2002) The natural history of the development of obesity in a cohort of young US adults between 1981 and 1998. *Annals of Internal Medicine*

Sturm R. (2002) The effects of obesity, smoking and problem drinking on chronic medical problems and health care. *Health Affairs*, **21**, 245-253.

Sturm R and Wells K, (2001) Does obesity contribute as much to morbidity as poverty or smoking? *Public Health*, **115**, 229-295.

WHO (2000) *Obesity: Preventing and Managing the Global Epidemic,* World Health Organization, Geneva.

Zhang Q and Wang Y, (2004) Socioeconomic inequality in the United States: do gender, age and ethnicity matter? *Social Science and Medicine* **58**, (6) 1171-1180

Appendix 1: Contributors to this report

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Appendix 2: Is there really an epidemic of obesity?

Professor Wright, Associate Dean at the University of Wollongong, Australia (2007) argues that there is no epidemic relating to obesity. Professor Wright argues that most calculations of obesity rely on BMI measurement which is not an accurate marker of obesity. She argues that this is all about people making money out of the solutions to obesity.

"Am I the only one unconvinced by the 'obesity epidemic'? It clashes with my experience… sounds a bit like a moral panic to me – especially when activists try to link it to climate change in a scaremongering fashion and it gives politicians some kind of purpose." *Guardian Unlimited blogs*: http://blogs.guardian.co.uk/food/Oct 17 2007

The notion that the obesity epidemic is a fantasy (or has been exaggerated) is not grounded in the evidence, and appears to be based at least partly on a misunderstanding over the ability of BMI to diagnose obesity accurately (this has been discussed in **Appendix 2**).

The epidemiological evidence suggests that obesity has reached global epidemic proportions (Behn and Ur, 2006) and data from developed and developing countries has revealed that an ever-increasing proportion of adults are obese (World Health Organisation, 2002) in virtually all populations and age groups worldwide (Eckel *et al*., 2004). The UK has the fastest increase in the disease in Europe, with prevalence rates similar to those found in the US (Adult obesity rates have almost quadrupled in the last 25 years. Now 22 per cent of Britons are obese and three-quarters are overweight) (Davis *et al.,* 2004; Flegal *et al.,* 2002).

In children, the evidence suggests that obesity has reached epidemic proportions globally (Wang and Lobstein, 2006). Worldwide, more than 155 million school-age children are severely overweight (British Medical Association: BMA, 2005) with the highest rates of childhood obesity observed in developed countries (Dehghan, Akhtar-Danesh and Merchant, 2005). The number of young people who are overweight and obese in Britain has almost tripled in the past 20 years (Lobstein, James & Cole, 2003), as it has in the US (Hedley, Ogden, Johnson, Carrol, Curtin and Flegal, 2002), and accelerated notably over the past decade (Chinn & Rona, 2001). In 1996 in the UK, 9.6 per cent of all children were obese; by 2003 this

figure had risen to 13.7 per cent (National Audit Office: NAO, 2006). In the US, as of 2002, approximately 30 per cent of children were overweight and more than 15 per cent of children were obese (Hedley *et al.*, 2002). Increases in obesity amongst adolescents have been most prominent with obesity rising from 14 per cent in boys and 15 per cent in girls' aged 11-15 in 1995, to 24 per cent and 26 per cent respectively by 2004 (Department of Health, 2004a). A longitudinal study (Wardle, Brodersen, Cole, Jarvis and Boniface, 2006) of an ethnically and socio-economically-diverse sample of young people in Britain confirmed obesity trends identified from national statistics (DoH, 2004b) and further highlighted that obesity rates are high and rising. Central obesity seems to be increasing particularly rapidly and the notion of 'puppy fat' that disappears upon maturation must be abandoned (Wardle *et al.*, 2006).

There is also an increase in overweight and obesity across the population as a whole with all age ranges affected. These figures are based on BMI and although this measure does have its limitations (which have been discussed elsewhere in this report) systematic reviews of the evidence have shown that a high BMI in both children and adults denotes individuals with high fat mass and high risk of the co-morbidities of obesity with very high specificity (low false positive rate) but with a moderate sensitivity (modest false negative rate). This means that BMI-based definitions of obesity are conservative and actually underestimate the scale of obesity epidemic.

However, there is a sense in which the use of the word 'epidemic' legitimises a discourse which supports panicky and sensationalist reporting and interpretation of the scientific data. This style of reporting occurs in a context of a debate about the appropriate response to the substantial increase in the prevalence of chronic health problems in the context of a healthcare system which is increasingly constrained and set up to deal with acute rather than chronic or preventative health issue. In recent years, the notion of health has become inextricably linked with personal responsibility the consequence of which has been to create a climate in which people who fall ill can be seen to be blamed for their poor health. In this sense people who become obese are seen to be personally culpable for their weight gain and thus deemed irresponsible. From this position it is a mere hop, step and a jump away from imputing moral failure in an individualist society.

From this perspective the notion of an obesity epidemic is being constructed as a moral panic, and this is probably incredibly unhelpful when it comes to developing an effective response to rising levels of fatness across the population. However, the scientific facts speak for themselves. Perhaps the real ‘epidemic’ is in the level of poor quality reporting of an increasingly complex scientific phenomenon.

Appendix 3: Obesity and health – are some overweight people healthier than thin people?

There is a continuing uncertainty about the levels of mortality and morbidity associated with obesity. The basic question here is how many extra deaths and extra diseases are associated with different levels of body mass. Inevitably the science behind the Foresight figures is stronger in some areas and weaker in others. It is sensible to acknowledge this but it is not sensible to believe this fatally undermines the analysis or projections. Again there is considerable 'slippage' in the media in the clamour for a sensational story at the expense of clear presentation of the issues. A range of interest groups (for example, on behalf of restaurants and food companies) have been keen to highlight these areas of uncertainty (Centre for Consumer Freedom, 2005).

There is universal agreement that mortality shows what is called a 'J-shaped curve' in its relationship with BMI. In other words, that mortality is slightly higher for those with a low BMI (thin people) on the one hand and a lot higher for those with a high BMI (fat people) on the other hand. However, the lowest mortality is actually somewhere in between low and high BMIs. The uncertainty is about where that in-between lowest risk point lies in relation to BMI. In fact there's no very clear cut point so it is one of those issues resolved in practical fashion by expert working groups. Most noteworthy among these have been the World Health Organization's (WHO 2000) categories of BMI and disease risk. Previously the lowest risk area was established by the WHO as a BMI between 18.5 and 25 kg/m^2.

Recent data is making this look a bit 'rough and ready' and it appears perhaps that the lowest mortality risk area might be closer to a BMI around 27 kg/m^2. A study in the US lead by Katherine Flegal has been the most prominent of the recent efforts to review categories of risk (Flegal *et al.*, 2004, 2004a and 2005). In this case, from a mortality point of view, being slightly overweight (BMI 25-30) may be beneficial. The recent figures are still clear that a very low or very high BMI carries extra mortality risk – they still clearly support a 'J-shaped curve'. But an expert group working just with this data might draw attention to the obesity related health risks being for those above 35 kg/m^2 rather than above $30kg/m^2$.

However, it depends what data is considered apart from overall mortality. It is significant that the Foresight Report focuses on the extra burden of diseases

linked to obesity rather than deaths from obesity. This is firmer ground because a very wide range of data shows how risks of diabetes, hypertension and cardiovascular diseases and so on increase with increasing levels of body fat as indicated by BMI. The physiological mechanisms for these increasing risks are fairly well understood as well (Kopelman, 2007). For example, how extra body fat affects the efficiency of the working of insulin in the body to regulate sugar levels. How blood lipids (essential fats) like cholesterol are affected by body fat levels. It is clear that increasing obesity will increase the burden of diseases. Furthermore, comparing obesity with other leading causes of health service cost and chronic morbidity shows it to be a serious issue (Sturm, 2002; Sturm and Wells, 2001).

So why does this link to chronic disease not appear to be followed through in the figures about people dying from obesity-related diseases? The reasons are not fully understood (Canoy and Buchan, 2007) because there are a number of concurrent epidemiological trends and some of these may be masking the visibility of the effects of increasing obesity in the population.

For example, risks for diabetes increase with increasing BMI and the prevalence of this disease is increasing. The Health Survey for England in 2003 suggests that diabetes prevalence in this country has increased by 80 per cent in women and doubled for men since 1991. Cardiovascular diseases (heart attacks and strokes) are key causes of death for people with diabetes and hence for obesity as a main cause of diabetes. But the death rate from cardiovascular diseases has been decreasing since the 1970s for a variety of reasons including the availability of better treatments. Untangling the different strands of epidemiological trends is tricky and more robust studies are required to arrive at definitive answers. Waiting for definitive answers on mortality is inappropriate because there is more than sufficient evidence on morbidity on which to base reasonable actions at this point.

In conclusion, the key points are:

- there is a clear link between increased body fat (obesity) and increased risks of a number of serious disease outcomes
- there has been a reduction in people dying from cardiovascular diseases for a variety of reasons

- more people are therefore probably living with these obesity-related chronic diseases as long term conditions – at some cost for health services
- the associations between increasing obesity and mortality from obesity related diseases are not simple
- recent data from the United States suggests that being slightly overweight may have benefits from an overall mortality point of view
- however it doesn't suggest this is a disease-free benefit
- being overweight increases the risks of obesity itself.

Overall, the Foresight Report is as accurate as it can be in forecasting an increased cost for society of a greater prevalence of chronic diseases arising from obesity. The areas of uncertainty about the exact trends and associations with overall mortality do not diminish the main arguments.

Appendix 4: Body Mass Index (BMI)

The BMI scale

BMI is calculated by dividing weight in kilograms by height in metres squared. The scale of BMI is:

Underweight: less than 18.5

Normal: 18.5 to 24.9

Overweight: 25 to 29.9

Obese: 30 or more

Although there are certainly limitations concerning BMI as a measure of obesity, it is rather uninformed to simply state that "George Clooney and Russell Crowe would be described as obese and brad Pitt and Mel Gibson are overweight using the BMI scale" (**Dominic Lawson**, 19 October 2007). The issues concerning the validity of BMI as a tool to classify obesity are in fact far more complex. A short response to the 'body mass mess' is offered below.

The measurement of obesity or excess body fat represents a challenge to researchers and clinicians. A large proportion of body fat is diffuse and inaccessible. Therefore, it is impossible to measure total adipose directly. The gold standard for estimating body fat has been hydrodensitometry (underwater weighing), and more recently dual-energy X-ray absorptiometry (DEXA). However, both of these methods are expensive and not available for routine clinical care making them impracticable for epidemiological use. However, they can and have been used to validate other methods of measuring body fat such as BMI.

In clinical practice and in large epidemiologic studies, body fat is most commonly estimated using BMI (a formula that combines weight and height). However, this method does have limitations and has been open to criticism as a result (John Cawley and Richard V Burkhauser, 2006. 'Beyond BMI: The Value of More Accurate Measures of Fatness and Obesity in Social Science Research,' NBER Working Papers 12291, National Bureau of Economic Research Inc.). BMI is an imperfect proxy for obesity because there is much individual variability in the relationship between BMI and body fat, cardiovascular risk factors, and long term health outcomes (D M B Hall[1], T J Cole[2] What is the BMI? *Archives of Disease in*

Childhood 2006 **91**:283-286; doi:10.1136/adc.2005.077339). BMI also ignores individuals frame size (people with a larger frame have greater mass overall but a smaller ratio of lean mass to fat mass) and gender (weights are the same for men and women, even though women are expected to have a higher percentage of body fat). Furthermore, body composition can change while weight and therefore BMI stay the same. For example, dieting and physical exercise fitness training could reduce fat mass and increase muscle mass (D M B Hall[1], T J Cole[2] What is the BMI? *Archives of Disease in Childhood* 2006 **91**:283-286; doi:10.1136/adc.2005.077339).

A review of the evidence seems to suggest that the criticisms of BMI are somewhat over-egged by social commentaries. BMI is evidenced to provide a more accurate measure of total body fat compared with the assessment of body weight alone. Furthermore, neither bioelectric impedance nor height-weight tables provide an advantage over BMI in the clinical management of all adult patients, regardless of gender (The National Heart, Lung and Blood Institute. *Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults. The evidence report*. Bethesda, M D: The Institute; 1998. [cited 29th Jan 2008]. http://www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.htm).

Among middle-aged adults, body mass index is strongly correlated with fat mass measured by densitometrically and adjusted for height (r is approximately 0.9 for both men and women) (Spiegelman D, Israel R G, Bouchard C, Willett W C. Absolute fat mass, percent body fat, and body-fat distribution: which is the real determinant of blood pressure and serum glucose*? Am J Clin Nutr* 1992 **55**:1033-1044). Systematic reviews of the evidence have shown that a high BMI in both children and adults denotes individuals with high fat mass and high risk of the co-morbidities of obesity with very high specificity (low false positive rate) albeit with a moderate sensitivity (modest false negative rate).

The application of BMI to determine obesity has been widely adopted in the adult population with adult BMI cut-off points for overweight and obesity based on the morbidity and mortality associated with excess weight. However, in children the absence of such data has made the situation more complicated and yet there is still widespread international support for the use of BMI to define obesity in children, expressed in non-systematic reviews and consensus statements (Cole T

J, Freeman J V and Preece M A. Body mass index reference curves for the UK, 1990. *Arch Dis Child* 1995 **73**:25-9.6; Cole T J, Bellizzi M C, Flegal K M and Dietz W H. Establishing a standard definition for child overweight and obesity worldwide: international survey. *BMJ* 2000 **320**:1240-3.7; Robinson T N. Defining obesity in children and adolescents: clinical approaches. *Crit Rev Food Sci Nutr* 1993 **33**:313-320).

Some of the limitations of the use BMI in children are expressed herein. The international obesity task force defined the cut-off points for young people by back-extrapolating from the centile of body mass index corresponding to values of >25 kg/m^2 (overweight) and 30 kg/m^2 (obese) at age 18. However, the application of this definition has not been uniform amongst research or clinicians which make international comparisons impossible – limiting the ability to which trends can be established (Jebb and Prentice. Single definition of overweight and obesity should be used. *BMJ* 2001 **323**:999. 27 October). Further, the existence of a choice of centiles (85th and 95th) by which obesity can be defined effectively inflates the apparent number of overweight and obese children and has led to confusion over the prevalence of obesity in young people (Jebb and Prentice. Single definition of overweight and obesity should be used. *BMJ* 2001 **323**:999. 27 October) and comments that the obesity epidemic is somewhat inflated (Professor Wright, Associate Dean at the University of Wollongong, Australia (2007)). That said according to Professor Tim Cole from the Department of Epidemiology and Public Health, Institute of Child Health, BMI correlates sufficiently well with direct measures of total body fat to support its use, on an anonymous basis, as a public health tool for monitoring progress in dealing with the obesity epidemic (Establishing a standard definition for child overweight and obesity worldwide: international survey. Tim J Cole, Mary C Bellizzi, Katherine M Flegal, and William H Dietz *BMJ* 2000 **320**:1240). What is more, data gathered over many years in the UK (Rudolf M C, Sahota P, Barth J H, *et al*. Increasing prevalence of obesity in primary school children: cohort study. *BMJ* 2001 **322**:1094–95) and throughout the world show that BMI is increasing, and it is reasonable to conclude that child and adolescent populations are getting fatter. Moreover, the increase in BMI probably underestimates the rise in visceral fat mass (VFM) which is of great concern given the strong correlation of health risk with intra-abdominal or VFM (McCarthy H D,

Ellis S M and Cole T J. Dramatic increases in central overweight and obesity in British children aged 11–16 years: cross-sectional surveys of waist circumference. *BMJ* 2003 **326**:624–6; Moreno L A, Sarría A, Fleta J, *et al*. Secular trends in waist circumference in Spanish adolescents, 1995 to 2000-02. *Archives of Disease in Childhood* 2005 **90**:818–19.)

In summary, although BMI is not devoid of its limitations, the gold standard alternatives (hydrodensitometry and or dual-energy X-ray absorptiometry) are too expensive and not freely available. For adult practice there is widespread agreement and evidence for the use of the body mass index (BMI: weight in kilograms divided by the square of height in metres: kg/m^2), with a simple definition of obesity as BMI >30.0 kg/m^2 (The National Heart, Lung and Blood Institute. Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults. The evidence report. Bethesda, M D: The Institute; 1998. [cited 29th Jan 2008]. Available from: http://www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.htm). Moreover, BMI is currently the best available anthropometric estimate of fatness for public health purposes (**D M B Hall[1], T J Cole[2]** What is the BMI? *Archives of Disease in Childhood* 2006 **91**:283-286; doi:10.1136/adc.2005.077339). In children there is strong evidence for the importance of using a relatively stable method to assess adiposity change such as BMI when following risk of obesity. (Cole T J, Faith M S, Pietrobelli A, Heo M. What is the best measure of adiposity change in growing children: BMI, BMI %, BMI z-score or BMI centile? *Eur J. Clin Nutr.* 2005 Jun **59**(6):807.)

Of particular concern is the evidence that a high BMI in both children and adults denotes individuals with high fat mass and high risk of the co-morbidities of obesity with very high specificity (low false positive rate) but with a moderate sensitivity (modest false negative rate). This means that BMI-based definitions of obesity are potentially conservative and actually underestimate the scale of obesity epidemic. One could argue on the basis of this evidence that the epidemic has been underestimated from secular trends in BMI. Secular trends in waist and in body fat content of the non-obese are even more worrying, suggesting that the epidemic has affected most of the population, not just those who would be identified as obese.

Appendix 5: Do some individuals have a fat gene?

Studies from the genome project publicise evidence that there is a 'fat gene'. Followers of this belief detract from the Foresight Report believing no amount of measures in society, such as planning, cycle pathways and so on, will make a difference to those who have the 'fat gene'.

The recent evidence on the 'FTO gene' indicates that genes might only exert small effects. Although some mutations have been shown to cause severe obesity (that is leptin gene mutations), the incidence of these mutations in the general population is low. These genes could be called 'fat genes' but they are unlikely to be responsible for most cases of obesity. Instead, the genetics of obesity can be described as polygenic against a strong environmental background. In other words there are a large number of genes which each make a small contribution to the condition alongside a large contribution by environmental factors. Moreover, evidence on genetic contributions to obesity should not detract from individual or population efforts to alter energy balance by changing lifestyle, and by altering the environment to make such changes in lifestyle easier. The small magnitude of these effects means that the obesity epidemic is not attributable to these genes but to changes in environment and behaviour.

The genes involved in obesity are likely to include those that code for the molecules and receptors involved in the signalling of hunger and satiety, such as ghrelin, leptin, pro-opiomelanocortin, serotonin etc. Polymorphisms or variants in these genes will make people more or less susceptible to obesity; someone with the 'fat' version of all of the genes involved is much more likely to be obese than someone with the 'thin' versions. However, the influence of all of these genes is very likely to be less than the influence of lack of exercise. The reason why people are obese is predominately because of their lack of exercise rather than because they overeat. They overeat relative to the number of calories they burn, if they want to continue to live a sedentary lifestyle and not become obese they will have to eat less. Why don't people exercise? Because they don't have the motivation.

From an evolutionary point of view a genotype predisposing to overeating (an energy intake that is greater than energy expenditure) when food was available could, logically, have been advantageous to the individual. However, genetic influences that conveyed an advantage during evolution may leave humans ill-

equipped to survive a modern western lifestyle with unlimited availability of food. In some people the natural control mechanisms that regulate appetite, satiety and psychological response to food may be genetically biased, in subtle ways, towards an overeating phenotype. It has been estimated that an imbalance between energy intake and expenditure of only 100 calories a day will result in weight gain. However, the relationship between appetite and food intake is complex; food intake is influenced by many factors in addition to feelings of hunger. In particular, eating in the absence of hunger is influenced by social situation, availability of palatable food and response to emotional stress (Hill *et al.*, 1991; Wardle *et al.*, 2000; Yeomans *et al.*, 2004).

In sum, genetic potential does not lead to corporeal reality. Take the example of height. The expression of the genes responsible for an individual's height depends upon the environment in which the individual lives. Those who have the potential to be tall will not realise this if they are exposed to poor living conditions and inadequate nutrition. Individuals who have a genetic propensity to gain weight live in an environment that makes full expression of this genetic potential possible – hence the rise in obesity during a period where there could not have possibly been any change in the gene pool. Contrary to what the statement suggests the evidence indicates that the most effective response to the obesity epidemic will be a change in an individual's environment rather than their genes.

Appendix 6: A need to Stigmatise obesity?

Some critics suggest the Foresight Report has failed to 'stigmatise' obesity. If Obesity is stigmatised it would motivate more people to take individual responsibility for their food intake and increase exercise.

"One word which did not appear in the Foresight projects list of possible responses to the ‘obesity crisis’ is stigma. This is a deeply unfashionable term, but it is vital. It is not ignorance that keeps some of our least well-educated from eating less often and exercising more. Everybody knows why they become overweight. The reason why obesity is more common outside the middle classes is because among them (the bourgeoisie) it is considered naff to be fat and unacceptable to be grossly obese." (**Dominic Lawson**, 19 October 2007

There is little or indeed no evidence that stigmatisation is likely to make a helpful contribution to dealing with the obesity epidemic. In fact this notion could be construed as absurd. The literature clearly points out that the obese population are acceptable targets of stigmatising behaviour in modern society (Puhl and Brownell, 2001). Indeed obesity has serious negative psychological consequences (Carpenter *et al.*, 2000) including; social exclusion, depression and reduced self-esteem (Chief Medical Officer, 2004). Obese adults, particularly women, face prejudice and are often stigmatised as a result of their size (Quinn and Crocker, 1998). Judgments about character traits attributed to obese individuals include being lazy, gluttonous, or lacking will power and it is often assumed, therefore, that obese individuals are responsible for their weight problems, which might promote self-blame and exacerbate distress (Puhl and Brownell, 2001). Being overweight is associated with lower income, intelligence, and parental education for women (Goran, 2001), poor educational achievement in men, and limiting longstanding illness in both sexes (Viner and Cole, 2005). In short, all things being equal, obese individuals are linked to lower educational achievement and intelligence, lower income, and poorer job chances. They are less likely to get a job, have a place to live, be thought of as attractive, have a partner, and be thought of as mentally stable compared to their non-obese counterparts obesity (Power, Lake and Cole, 1997). To further stigmatise them clearly does not constitute a rational theoretically underpinned approach.

In children and adolescents the psychological implications are equally marked. Overweight adolescents are more likely to be socially isolated, bullied and peripheral to social networks compared to their normal weight counterparts (Morgan, Tanofsky-Kraff, Wilfley and Yanovski, 2002). Furthermore, weight status has been consistently associated with high depressive symptoms and suicidal ideation in obese young people (Mellin, Neumark-Sztainer, Story, Ireland and Resnick, 2002). Collectively, these findings have created a need for clinicians and researchers to address issues that are related to the long-term wellbeing of clinically obese young people rather than try to stigmatise them. Furthermore, without intervention, the high incidence of psychopathology amongst obese and overweight children (Mellin *et al.*, 2002; Puhl and Brownell, 2003; Zametkin, Zoon, Klein and Munson, 2004) can persist into adulthood, diminishing quality of life and psycho-social health.

Exercise interventions could be particularly appropriate treatments in obese populations since they have potential to improve both physical and psychological health simultaneously. However, there is concern that obesity treatment and prevention programmes and untested health education messages, particularly in children, could have the potential to stigmatise participants (Latner and Stunkard, 2003), and perpetuate the beliefs that overweight and obese people are 'weak-willed, ugly and awkward' and 'gluttonous, lazy, bad, weak, stupid, worthless and lacking in self-control' (Hill and Silver, 1995; Wardle and Cooke, 2005).

Highlighting the problem of being overweight in prevention programmes is likely to have adverse effects. Potentially making adults and in particular children more sensitive about their weight and self-perceived lack of athletic ability (O'Dea, 2006) could mean they are less likely to participate in physical activity (Shaw and Kemeny, 1989). Studies of barriers to physical activity among adolescents (O'Dea, 2006; Shaw and Kemeny, 1989) clearly identify body consciousness, lack of privacy in changing rooms and physically revealing sports uniforms as major barriers, particularly among girls. Coercing unwilling, body-conscious, overweight children and adults for that matter into sport or physical activity is likely to exacerbate these problems and further reduce their participation in physical activity. Conversely, involving individuals in physical activities that they enjoy is likely to boost their feelings about themselves, social interactions and friendships

(Strauss & Pollack, 2000), which promote the evidence-based philosophy that fat individuals can be fit and healthy (Blair, 2003).

Obesity is also linked to eating patterns and it is well recognised that psychological factors influence eating behaviour. Consideration of the hedonistic aspect of appetite control is equally important in the notion of stigmatism. Most people eat because it is a pleasurable activity in addition to the need to eat due to hunger. Indeed, there is evidence that eating certain forms of food (carbohydrates such as chocolate) can affect psychological wellbeing by promoting a sense of comfort and fostering 'feel good' sensations (Parker *et al.*, 2002). Of particular note is that mood state can also alter food preference, with a desire for 'junk food' shown to increase during negative mood states and preference for healthy foods increase during positive mood states (Lyman, 1982). Coping with negative mood states such as stress, boredom, depression and social self-doubt by eating is common (Taylor *et al.*, 1996; Hill *et al.*, 1991; Rozin *et al.*, 1991). What is more, emotional eating has been linked with increased feelings of guilt and this type of emotional eating is more common in those who are overweight or obese (Ganley, 1989). While weight gain caused by emotional eating may exacerbate aversive mood states, the latter could trigger a cycle of further emotional eating and continued weight gain. Yet again the notion of further stigmatising individuals seems ridiculous.

In summary, there is overwhelming evidence that the phrase 'if obesity is stigmatised it would motivate people to take responsibility for their food intake and increase exercise' is fundamentally flawed. Obese children and adults are already stigmatised widely and it is difficult to imagine that this puts any meaningful brake on excessive weight gain or that further stigmatisation would be helpful. There is also an ethical case against stigmatisation. Trends in obesity suggest that social patterning is less marked than it was and that the gap in prevalence between the wealthy and the poor is closing in the UK and this provides indirect evidence against the idea that stigmatisation protects the wealthy from obesity. Indeed, levels of obesity stigma appear to be rising and the obese are just as likely stigmatise themselves as lean individuals are.

Put simply, stigma compounds the problem of obesity rather than solving it. The evidence suggests that making people feel bad about themselves destroys their

self-efficacy which reduces their capacity for behaviour change. Psychological factors not only contribute to an individual's risk of developing obesity, they may also play an important role in the ability of a subject to change their lifestyle, in particular their eating habits and the amount of exercise they take and therefore bring about a reduction in the extent of their obesity. Unless a subject is motivated to change and exhibits self-efficacy (the self-belief that they are capable of making changes in their life), they are unlikely to adhere to a diet exercise programme or to achieve significant weight loss. Evidence from clinical trials has highlighted that obese patients with a greater level of autonomy toward change or those who have greater internal motivation are more likely to maintain dietary change over the longer term. Moreover, these patients are more likely to lose weight (Williams *et al.*, 1996). The extent of motivation and self efficacy is influenced by a number of factors most notably psychological wellbeing. It is clear therefore that researchers, practitioners and clinicians should focus programmes on building self-efficacy and confidence in obese individuals rather than eroding it with stigma.