

BHFNC summary of:

Tackling Obesities: Future Choices – Project Report

The UK Foresight Project ‘Tackling Obesities – Future Choices’ was commissioned by the Government Office for Science and Innovation in July 2005. Over 300 experts from a range of disciplines and stakeholders from within, and beyond Government, have reviewed the evidence base and used a variety of futures techniques to examine the question: ‘How can we deliver a sustainable response to obesity over the next 40 years?’ New research was also commissioned to fill in some of the gaps and cast new light on the determinants of obesity and its likely prevalence in the future.

The Foresight project report ‘Tackling Obesities – Future Choices’ was published in October 2007. The report has used the scientific evidence base from across a wide range of disciplines in order to identify the broad range of factors that influence obesity; create a shared understanding of the relationships between key factors influencing levels of obesity and their relative importance; build on this evidence to identify effective interventions; and analyse how future levels of obesity might change and identify the most effective future responses.

The report is organised into several sections:

- The scale of the problem
- Causes of obesity
- Tackling obesity: The evidence and the uncertainty
- Obesity: A complex system
- Visualising the future: scenarios to 2050
- Managing the consequences
- Building a sustainable response

The scale of the problem

This section draws on data from the Health Survey for England to examine the current incidence and distribution of overweight and obesity. It explores their possible future trajectories and summarises the current evidence of co-morbidities. It reports the outcomes of a quantitative modelling exercise, using this evidence and current estimates of the associated costs to the NHS and society, to explore potential future costs.

In some countries, including the USA and the UK, the rates of obesity have more than doubled in the last 25 years, and being overweight has become the norm for adults. The most recent data from The Health Survey for England (2004), shows that nearly a quarter of adults are obese.

The measurement of obesity in children is a complex issue, however regardless of the methodology used for determining obesity prevalence in children, the data clearly

demonstrate that the prevalence of overweight and obesity in children in the UK is increasing. In this report, the International Obesity Task Force (IOTF) definition of obesity was used to calculate incidence rates of obesity in children. When applying this definition to data from the Health Survey for England (2004) around 10% of children aged 6-10 years; 5% of boys aged 11-15 years and 11% for girls of the same age are obese.

Future trends in obesity

The dataset of the Health Survey for England from 1994–2004 was used as the basis for extrapolating the distribution of people across the various BMI categories, to 2050. The simulation allows estimation of trends in obesity for different age groups and by gender, social class and geographical region. Attempting to make projections so far into the future is always compromised by lack of evidence. However, projections indicate that the obesity crisis is due to get worse. By 2025, the prevalence of obesity is estimated to rise to around 47% among men and 36% among women and by 2050 over half of men and women could be obese. Foresight calculations propose a similar picture for young girls, with 70% overweight and obese by 2050. The 2050 projected levels for boys are slightly less, with around 55% being overweight and obese.

The report also predicts the future prevalence of chronic diseases associated with being overweight and obese. Type II diabetes incidence is estimated to increase the most dramatically due to obesity (a >70% increase by 2050), with increases of 30% for stroke and 20% for coronary heart disease. The projected increases in obesity and the associated chronic diseases are likely to significantly increase the costs to the NHS and the economy. The House of Commons Select Committee estimated that the total cost of overweight and obesity in England in 2002 was nearly £7 billion. Foresight predicts that this may climb to £45.5 billion by 2050 (if the total costs to the health service remains similar to today).

The causes of obesity

This section of the report draws upon the review of the scientific literature and offers an overview of the evidence base for the determinants of obesity. The causes of obesity are complex and multifaceted, many factors play a role in the development of obesity.

Although there are many factors contributing to individuals becoming obesity, it is now widely accepted by health and allied professionals that the increasing prevalence of obesity in the UK is primarily caused by an individual's latent biological susceptibility interacting with a changing environment that includes more sedentary lifestyles and an increased abundance of energy dense foods.

It concluded that 'At the heart of the obesity crisis lies a homeostatic biological system that struggles to maintain an appropriate energy balance and therefore body weight. This system is not well adapted to a changing world, where the pace of technological progress and lifestyle change has outstripped that of human evolution.'

Opportunities for physical activity have become scarce as roads have become busier and more dangerous, technological advances have brought us labour saving devices and increased availability of convenience foods and fast food restaurants. When this is coupled with human biology, growth and development in early life and broader economic and social changes 'passive obesity' is almost inevitable.

Tackling obesity: the evidence and the uncertainty

This section offers an overview of the evidence base for obesity prevention and treatment and considers the lessons that can be drawn from other countries around the world.

It opens by presenting the evidence base for the determinants of obesity and its treatment and prevention. Few interventions have been successful in reducing the prevalence of obesity and those interventions which have demonstrated success have not yet been widely replicated or delivered at a scale that offers a clear option for public health strategies. Given the urgent need to tackle obesity, it is likely that interventions to prevent the obesity problem worsening will have to be initiated when the evidence base is neither complete nor perfect.

In the future, prevention of obesity will require major changes in behaviour at all levels from organisations that have an influence on individual behaviour to individuals themselves.

The Foresight report examined a range of interventions that may or may not have potential to reduce obesity levels. For example, social marketing campaigns urging people to exercise more frequently were discussed and were considered as possibly inadequate in changing behaviour and addressing the problem of obesity. Interventions that go beyond informational campaigns to simultaneously inform, shift motivation and provide the necessary skills are more likely to lead to behaviour change. The promotion of walking and cycling was recognised as a possible method for increasing physical activity, however it was acknowledged that without broader environmental changes to tackle issues such as pedestrian safety or commuting distances, its impact could be limited.

The report also provides examples of targeted interventions currently being used in the UK for the treatment of overweight and obesity in children and adults, such as MEND and Counterweight. The evidence of the effectiveness of a range of interventions used to tackle obesity from other countries across the globe was also reviewed. It was concluded that although specific actions and/or interventions could be useful, without overall coherence in policy and clear political drivers, these are unlikely to deliver the required level of change.

The potential of health policy is discussed in the prevention and management of overweight and obesity. This strategy has been utilised in recent years, for example, the 2004 target to 'halt the year-on-year rise in obesity among children aged under 11 by 2010 in the context of a broader strategy to tackle obesity in the population as a whole.' However, Foresight comments that the potential success of such targets may be limited as more research into wider economic and social determinants of health is needed to help policy makers make sense of the complexity associated with the causation and management of obesity. Without this knowledge and combined with the multi-level nature of modern governance, policy faces a complex set of challenges.

It was concluded that there are significant gaps in the evidence base for effective interventions to prevent or tackle obesity. At the present time, there are few interventions that successfully reduce the prevalence of obesity and on a population level, however there are a few international examples which are beginning to some promise.

A complex system

This section draws upon the Foresight systems mapping work to examine the complexity of the determinants of obesity, their interrelationships and implications for intervention.

As discussed earlier in the report, obesity is a consequence of interplay between a wide variety of variables and determinants related to individual biology, eating behaviours and physical activity, set within a social, cultural and environmental landscape. Foresight used a systems mapping approach to capture this complexity and to discover more about interrelationships and the importance of various determinants. This information has been used to visualise how future scenarios and options for policy responses may affect the obesity system.

At the heart of the obesity map is 'energy balance' and this is surrounded by a set of 108 variables that directly or indirectly influence it. These variables can be separated into 7 clusters: physiology; individual activity; , the physical activity environment; food consumption ; food production;; individual psychology and social psychology. The systems map shows that the central 'energy balance' engine is primarily driven by 4 key variables:

Level of primary appetite control in the brain: Reinforces the dominance of the system to regulate biological appetite over energy expenditure within the physiology cluster of the map.

The force of dietary habits that keeps individuals of groups from adopting healthier alternatives: represents the accumulated consequences of multiple variables within the food cluster of the map.

The level of physical activity: Dominates other energy expenditure mechanisms that are less easily modified within the activity area of the map.

The level of psychological ambivalence: Symbolises the convergence of many motivations and social drivers on individual, family, group and societal behaviours within the psychological areas of the map.

The full obesity map indicates the strength of relationships between variables using arrows. Each of the 4 key variables is associated with many arrows in both directions, implying that they filter dispersed changes in the wider obesity system into the core engine, thus affecting energy balance. Foresight concludes that these four variables act as targets for potential policy interventions. Exploring the variables that are directly connected to the four key variables may also yield a group of potential intervention points in the obesity system.

Visualising the future: scenarios to 2050

A defining feature of Foresight's work is looking ahead to understand better the longer term uncertainties and the opportunities and obstacles that future worlds might present.

Within this section, the foresight project generated a set of scenarios for the future looking forward to 2050. These scenarios are developed to explore possible alternative contexts within which the range of variables identified in the obesity system map are likely to interact. Four scenarios of the future were developed, these scenarios focus on two critical uncertainties: uncertainty associated with people's values and behaviour and uncertainty over the strategic approach that should be

taken to meet the challenges in future societies from having a long-term focus to a short-term more reactive focus.

The 4 scenarios of the future and what they mean for physical activity

- **Scenario 1** – An individualistic, market-driven society that adopts a more long-term and sustainable view: In this scenario, individuals are responsible for their own health management and the focus is on individually tailored solutions. People will invest in prevention and education will be a critical means of accessing health information.
- **Scenario 2** – A society where social responsibilities are prioritised, and communities and Government implement plans to meet long-term challenges: This scenario enables system wide changes to be considered. Living well and staying healthcare seen as a civic duty as society may suffer the consequences if this responsibility is not taken. Those who opt out of a healthy lifestyle are likely to be marginalised in such a society. A strong focus on prevention rather than treatment prevails.
- **Scenario 3** – A society where communities take the lead and focus on tackling difficulties as they arise. In this society there is a belief that everyone deserves and should receive an adequate level of healthcare. Attention is focused on those who already need treatment rather than those who are at future risk. Prevention and public health is largely neglected and resources are pumped into acute care facilities such as accident and emergency.
- **Scenario 4** – An individualistic, market-driven society that reacts to problems when and where they occur. In this society, good health and a good appearance is a symbol of status. There is high personal responsibility to fund personal healthcare and inequalities are widening. It is common for employers to offer access to gym and leisure facilities in order to attract the best employees. For those of higher socio-economic status there are accessible medications to prevent weight gain.

In the future, obesity policies will need to consider the broader social, economic and political context. It is theorised that appropriate interventions can be planned by taking into consideration the context in which they will be implemented. For example, a market-driven, individualistic society as described in scenario 1 supports the development of individualised lifestyle services.

It is important to note that the prevalence of obesity does not decrease in any of the scenarios, although the rate of increase in prevalence differs dependant on the importance given to prevention as opposed to treatment.

Managing the consequences

This section sets out the results of the Foresight qualitative modelling exercise using future scenarios to explore potential policy options. It reports the outcomes of the modelling exercise when applied to hypothetical interventions on obesity levels of chronic disease and NHS costs.

The obesity map and the scenarios were used in conjunction to generate and test possible options as part of an integrated strategy for obesity. Seventeen interventions were chosen as having the potential to have a sustained impact on obesity. Experts

and stakeholders then ranked the anticipated impact of these interventions and highlighted issues around implementation.

The top 5 policy responses assessed as having the greatest probable impact on obesity across all four of the scenarios were:

1. Increasing walkability/cyclability of the built environment
2. Targeting health interventions for those at increased risk
3. Controlling the availability of and exposure to obesogenic foods and drinks
4. Increasing the responsibility of organisations for the health of their employees
5. Early life interventions at birth or in infancy.

Interventions in early life generated the highest average impact across all scenarios although greatest success was achieved in scenarios where a long-term approach as opposed to a reactive approach prevailed. The level of impact was dependant upon:

- How responses are implemented
- Social context and attitudes
- Variation in health inequalities.

It was concluded that no single intervention generated a high impact on obesity across all four scenarios. Thus suggesting that a mix of interventions targeted at a combination of the determinants of obesity are essential.

Building a sustainable response

This final section of the project takes into consideration all of the evidence collated by Foresight to propose a way forward for tackling obesity. Foresight report identifies the need for multiple interventions to be implemented for the prevention of obesity. It was acknowledged that focusing too heavily on one element of the obesity system, or on a single population group, is unlikely to have a substantial effect on obesity across the whole of society.

Five core principles for the development of a comprehensive, coherent strategy for tackling obesity have been identified:

1. A system-wide approach, redefining the nation's health as a societal and economic issue
2. Higher priority for the prevention of health problems, with clear leadership, accountability, strategy and management structures
3. Engagement of stakeholders within and outside Government
4. Long-term, sustained interventions
5. Ongoing evaluation and a focus on continuous improvement.

Foresight provides a comprehensive checklist for an effective obesity strategy and this is based around the five core principles. The user of the checklist is asked questions such as 'does the strategy act at multiple levels, from the national through the local to the individual?' This checklist explains the criteria further and provides examples of good practice.

This section of the report also identifies gaps in the evidence base. Additional evidence on 'what works' will help improve our understanding of the scientific basis of obesity. Foresight identify that additional research is needed in the areas of:

- Large-scale 'pilot' or 'demonstration' projects for the prevention of obesity

- Population-based solutions, including studies of the built environment and diet/activity/obesity
- Prevention
- Risk perception
- Human behaviour and values and how this drives change
- Evaluation of 'natural experiments' including policy initiatives.

The project concluded that the obesity epidemic will not be solved through interventions calling for greater individual responsibility or through short-term fragmented initiatives. Interventions need to be long-term and sustainable and accompanied by a higher priority for the prevention of health problems. It is important that the Government take the lead on tackling this issue, although progress will be enhanced by stimulating multi-section, multi-level action within and beyond the public health profession. It should be recognised that obesity is a complex problem, but is not insoluble .

To read the full report, click here: <http://www.foresight.gov.uk/Obesity/Obesity.html>