Public Health Policy to tackle obesity:

An International Perspective

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The opinions expressed in this publication are of the researchers and not necessarily those of the NHS Health Scotland.
Caveat

This report is based on the extensive set of documents we were able to obtain from web sites, individuals and government departments. To maximise coverage, the web was searched in a variety of ways and individual web sites were visited several times. However we cannot be certain that we obtained all relevant documents. Further, for several countries it is likely that some documents may not have been translated into English. Thus, some of our findings might well be modified had we had access to a fuller set of documents.
Executive Summary

Introduction
Obesity is a major public health problem which is currently getting worse. The medical and financial costs of obesity are widely recognised. We therefore conducted a review of public health policy documents on obesity, nutrition and physical activity. These were examined to identify the salient features of policy.

Methods
The review of policy covered fourteen developed countries: Australia, Canada, Denmark, England, Finland, Ireland, Japan, New Zealand, Northern Ireland, Norway, Scotland, Sweden, USA and Wales. Policy documents from every country were reviewed by two independent observers. Short summaries were prepared of the key policy features on: the assessment of the problem; the targets set; the interventions proposed; and the evaluations that have been put in place.

Results
All countries express concern at the rapid increase in the prevalence of obesity. Overweight and obesity are thought to result from the combination of the over-consumption of energy dense foodstuffs and inadequate levels of physical activity. Despite the rapidly worsening situation only a few countries have specific strategies on obesity. Instead obesity is often tackled indirectly through separate policies on nutrition and physical activity.

The policies are often written in general terms and frequently identify sets of action which could be pursued without making commitment to carrying them out. Interventions in schools and the workplace are the most well-developed. Many countries have created active transport strategies to increase both cycling and walking. Apart from these, there are few specific proposals for tackling obesity. Those countries with obesity polices highlight the need to tackle the problem among socially disadvantaged people.
Fiscal and legislative interventions are almost completely absent from policy documents. There is also little mention of funding for the range of proposed interventions. Further research to develop effective interventions is recommended, as is the evaluation of the impact of current policies. However specific proposals for these actions are seldom given.

**Conclusions**

Obesity is a major epidemic which needs urgent action. However, current policy is largely concerned with exploring options on ways to develop policy, rather than providing a comprehensive set of interventions to reduce obesity. The problem posed by obesity completely overshadows the efforts being made to tackle it.
Introduction

The association between obesity and chronic disease has been recognised for many years\(^1\). In 1998, the World Health Organisation\(^2\) concluded there was an association between obesity and seventeen diseases including type II diabetes, gallbladder disease, coronary heart disease, osteoarthritis, sleep apnoea and cancer of the breast, endometrium and colon. The extent of these disease associations are of concern because the prevalence of obesity is now rapidly increasing: in England it tripled between 1980 and 1999\(^3\). Similar trends have been documented in Australia and the USA\(^1\). The prevalence of obesity is also rising rapidly among children\(^4\). The scale of the obesity problem may be underestimated. One recent report concluded that the deleterious effects of obesity on health and health care costs substantially exceeds those of tobacco or alcohol\(^5\). Despite this, obesity is given much less attention in public health policy.

Obesity is the natural consequence of energy intake exceeding energy expenditure. Thus the cause of obesity is either overeating, sedentary behaviour or a combination of the two\(^6\). Although genetic makeup is important, the prevalence of obesity has increased too rapidly for genetic changes to account for it. Thus the focus of public health policy must be on diet and physical activity.

There is a widespread view that modern society presents “an essentially unlimited supply of convenient, relatively inexpensive, highly palatable energy dense foods”\(^7\). However evidence for overeating is not persuasive. Dietary data in the UK shows a fall in per capita energy intake since 1970\(^6\), although concerns about the validity of these estimates have expressed by the House of Commons Select Committee\(^8\). In the USA dietary surveys show that energy intake appears to have remained stable during the last 40 years\(^9\).

Overall energy expenditure has reduced in recent years\(^2\)\(^3\). This is attributed to a reduction in walking, occupational exercise and leisure time physical activity. This has been paralleled by an increase in sedentary behaviour (television and computer games) and an increase in energy saving devices in public places (lifts, escalators, automatic
doors and car usage). Physical activity is also being engineered out of people’s lives through labour saving devices such as TV remote control devices, automatic car washes, pizza delivery services and shopping on-line.

Traditional approaches to preventing obesity focused on changing individual behaviour, but these are now thought to be inadequate. There is a growing consensus that strategies for tackling obesity need to address the physical and social environment, the so called obesogenic environment. One proposal is to increase the availability and palatability of foods that are low in fat and low in energy density. This could be accompanied by education to foster a preference for less energy-dense foods. Others have suggested using fiscal policy by placing taxes on high fat foods and exempting healthier foods and restrictions on the advertising of junk foods. Such proposals are likely to meet considerable opposition from the food industry. A complementary approach is to make the environment more conducive to physical activity by providing safe walking and cycling paths, parks and community recreation centres. This could be combined with campaigns to discourage sedentary activities such as watching television and to promote regular exercise.

The problems posed by the obesity epidemic are well understood, as are the directions: reduced consumption and increased physical activity, which must be followed to tackle them. The challenge for policy is to design and implement a programme of interventions which will change the social and physical environment to allow the strategic objectives to be achieved.
Aims

This study provides a review of obesity policy in fourteen developed countries and investigates the interventions proposed in policy to address the problem. The aims of the study were to:

i Obtain policy documents with particular relevance to obesity

ii Identify current perspectives on the nature and causes of the problem

iii Outline strategic approaches which have been proposed to tackle obesity

iv Describe the health targets most relevant to obesity

v Collate the interventions proposed within the documents obtained

vi Describe the proposals for the evaluation of the effectiveness of policy

Overview

This study was based on a review of public health policy documents from the following countries: Australia, Canada, Denmark, England, Finland, Ireland, Japan, New Zealand, Northern Ireland, Norway, Scotland, Sweden, USA and Wales.
Methods

Policy documents to address obesity were obtained from fourteen developed countries: Australia, Canada, Denmark, England, Finland, Ireland, Japan, New Zealand, Northern Ireland, Norway, Scotland, Sweden, USA and Wales. The majority of documents were obtained from Ministry of Health websites. The initial search identified those countries with stand alone policies on obesity. The overall public health policies from all countries were then reviewed to establish which countries included obesity, nutrition or physical activity as topics in their public health strategies. Websites were searched again for stand alone policies on nutrition and physical activity. The majority of documents were downloaded from the Ministry of Health websites. The public health policies from the USA, Japan, Denmark and the Health Strategy and Health Promotion Strategy from Ireland were obtained directly from the Health Departments of each country. We identified some documents through links to other government department websites, such as Departments of Education or Sport and Recreation. However, these websites were not systematically searched.

Some countries have a limited amount of documents in the English language available on the Ministry of Health websites. For example, Norway’s public health strategy is only available as a summary document in English. In addition, we found little English language documentation from Finland and Sweden. Thus, the amount of information available varied substantially between countries. It is possible that the non-English speaking countries have policies in their own language which we were unable to access.

Policy review

The policy documents were reviewed by two independent observers (LI and IKC). Data on the format and content of the policies, with particular attention to potential interventions to be implemented, were extracted from the documents. The organisation of policy to address obesity varies across countries. Few countries have policies on obesity, but strategies on nutrition and physical activity address the problem. This is described in the section entitled Current Policy on obesity, nutrition and physical activity.
Summaries were prepared of the key policy features of policy: the assessment of the problem, the targets set, the interventions proposed and the evaluations that have been put in place. A comprehensive list of interventions proposed in policy was compiled. Interventions were sub-divided into ten categories: fiscal; legislative; policy development; transport; media; food and leisure industries; nutrition labelling; social and physical environment; educational strategies; and settings for intervention. From the list of all the interventions across all of the policies we have synthesised the range of interventions which could be implemented within each of these categories. Because we sought to provide as comprehensive a review as possible, we have included interventions irrespective of the governments’ commitment to implementation. Some will no doubt be implemented, but others may be mentioned in policy documents only for consideration.
The nature of the problem

All countries are concerned about the dramatic increase in overweight and obesity in recent years. It is a growing problem among both genders, adults and children and in all population groups\textsuperscript{16}. England and the USA have recently reported that more than 60\% of the population are overweight or obese\textsuperscript{8,16}. The prevalence of obesity, defined by a Body Mass Index $>$30, varies between the countries studied. In England in 2002, 22.9\% of men and 25.4\% of women were obese\textsuperscript{8}. New Zealand reported that in 1999 15\% of males and 19\% of females were obese\textsuperscript{17}, while Denmark reported the prevalence in 1999 to be 8\%\textsuperscript{18}. It is estimated that there is a nine year reduction in life expectancy among obese patients\textsuperscript{8}. If current trends continue, obesity may soon be responsible for as much preventable premature morbidity and mortality as smoking\textsuperscript{8,16,19}. Overweight and obesity in children gives particular cause for concern, due to the increased risk of many diseases in adulthood. Thus it has been predicted that, for the first time in more than a century, life expectancy for the current generation of children is likely to fall\textsuperscript{2}.

Diseases caused by obesity

Individuals who are obese have an increased risk of premature mortality. Many health risks are associated with obesity and as body weight increases, so does the prevalence of health risks. New Zealand gives the relative risks of developing certain diseases\textsuperscript{20}. These are graded as: greatly increased for type II diabetes, gall bladder disease, dislipidaemia, insulin resistance, breathlessness and sleep apnoea; moderately increased for coronary heart disease, hypertension, osteoarthritis and hyperuricaemia; and slightly increased for cancer of breast (post menopause), endometrium and colon, reproductive hormone abnormalities, polycystic ovary, impaired fertility, increased anaesthetic risk, and fetal defects. Denmark points out that from three years of age, obesity in children is increasingly linked to obesity in adult life. In addition, children whose parents are obese have a risk in developing obesity as adults whatever their weight in childhood\textsuperscript{18}. The Danish document also highlights the problem of prejudice in children, social problems among adults and discrimination in the workplace. Australia points out that obesity can destroy self-esteem, lead to social discrimination and contribute towards mental illness\textsuperscript{21}. 
Cost of obesity
The cost of managing obesity is high, due to the associated health problems and subsequent mortality. This has substantial economic implications and places a major burden on health care systems. The World Health Organisation, in 2000, estimated that the cost for countries amounted to 2% to 7% of the annual health budget. The total cost of obesity in England in 2002 was estimated to be £3.3 to £3.7 billion. This includes the direct costs of treating obesity and associated diseases and the indirect costs from premature mortality and lost productivity. The total cost in the USA in 1995 was estimated to be $99 billion.

Causes of obesity
In simple terms, obesity occurs when energy intake exceeds energy expenditure. Genetic susceptibility can play a role but the main reason for the sudden increase in obesity is due to environmental factors. Energy dense foods are becoming more available while in today’s society energy expenditure is reduced. Australia in its strategic plan to reduce obesity, Acting on Australia’s Weight, acknowledges that the nutritional composition of the diet has changed in recent decades, with fat typically providing a higher proportion of energy intake. This is in part due to the increase in the use of convenience foods, many of which are high in fat. It suggests that the reduction in physical activity during the same period has also contributed. Australia’s Healthy Weight 2008, which addresses overweight and obesity in children, puts the increased problem in children down to a decrease in physical activity, an increase in unhealthy eating and an increase in television viewing. It states that changes to the social, cultural, physical and economic conditions are driving these unhealthy behaviours.

New Zealand’s Healthy Eating – Healthy Action background document categorises the influences as biological, behavioural and environmental. It states that the biological influences of ethnicity, gender, age, hormonal and genetic factors explain the variance in body fat in individuals, but do not explain the rapid increase in obesity at a population level. It goes on to suggest important influences such as sedentary lifestyles at work and leisure and spending less time on leisure and other physical activity. Less time for
cooking and loss of cooking skills are also seen as a problem as well as easier access to food outlets, larger portion sizes, and easier access to pre-prepared foods which tend to be high in fat, sugar and salt. Media influences, particularly on children, are also discussed. The document reviews evidence that suggests that television viewing promotes weight gain not only because it is a sedentary activity, but because the consumption of energy dense foods increases with television viewing. Advertising may also affect dietary patterns and children who watch television during meals have poorer diet\textsuperscript{23}.

**Sedentary behaviour as a cause of obesity**

Several countries discuss the reduction in physical activity over recent decades. Australia puts this down to a preference for sedentary lifestyles, lower participation in active recreational pursuits, and the greater use of labour saving devices at home and in the workplace\textsuperscript{22}. The proportion of people in sedentary occupations has increased while television viewing, particularly day time television viewing has become more popular, mainly among women and children. Playing computer games, which leads to long periods of inactivity, is also much more popular among children.

All countries recommend that adults accumulate 30 minutes or more of moderate-intensity physical activity on most, preferably all days of the week. However, the majority of the countries reviewed report that this is not achieved. Sweden estimates that no more than 20% of the population may be sufficiently active to benefit their health\textsuperscript{24}; Scotland reports that 72% of women and 59% of men are not active enough to benefit their health\textsuperscript{25}, while Australia and New Zealand estimate that one third are not sufficiently active to benefit health, although they acknowledge this figure may be higher\textsuperscript{26 27}.

**High risk groups**

Overweight and obesity are more common among the lower socio-economic and socially disadvantaged groups, particularly among women. This is highlighted in the strategies from Australia\textsuperscript{21}, New Zealand\textsuperscript{20}, Norway\textsuperscript{28}, and Sweden\textsuperscript{29}. People from minority ethnic groups are also at higher risk. A recent report from the Health Committee appointed by
the House of Commons in England describes the differences between different groups. Men and women working in unskilled manual occupations are over four times more likely to be classified as morbidly obese. In 2001, 28% of women and 19% of men in unskilled manual occupations were obese compared to 14% of men and women in professional groups. In England, children who are Asian are four times more likely to be obese than white children. Among women there are also differences between ethnic groups. In 1999 obesity was 50% higher in black Caribbean women than the national average and 25% higher among Pakistani women.

Australia and Japan identify certain age groups who are most at risk. Australia suggests men aged 25 – 40 years, and women aged 45 – 55 years are at greatest risk while Japan has set targets for men aged 20 – 69 years and women aged 40 – 69 years. New Zealand identifies older people as vulnerable and Australia, Japan and New Zealand all identify children and adolescents as a high risk group.
Strategic approaches to tackling obesity and physical inactivity

World Health Organisation Global Strategy on Diet, Physical Activity and Health

The World Health Organisation’s *Global strategy on diet, physical activity and health* was endorsed by the 57th World Health Assembly in May 2004. The strategy was developed in response to the recognition that a few largely preventable risk factors account for substantial morbidity and mortality worldwide. This population-wide, prevention-based strategy was developed through extensive consultation with member states, organisations of the United Nations system, other intergovernmental bodies and civil organisations.

Non-communicable diseases account for around 60% of all deaths and approximately 47% of the global burden of disease. Diet and physical activity were identified as two main risk factors for these diseases. It is important to note that diet and physical activity influence health together and independently. The effects of diet and physical activity often interact, particularly in obesity, although their effects on health may be completely independent. The major factors that contribute to the development of non-communicable diseases include: diet that is high in energy dense, nutrition poor foodstuffs which are high in fat, sugar and salt; and reduced levels of physical activity at home, school, work and during recreation. Unhealthy diet, inadequate physical activity and energy imbalances in children and adolescents give particular cause for concern.

Overall goal

The overall goal of the *Global Strategy* is to promote and protect health by guiding the development of an enabling environment for sustainable actions at individual, community, national and global levels. Taken together these should lead to reduced disease and death rates related to unhealthy diet and physical inactivity.
Objectives

The *Global Strategy* has four objectives:

- To reduce the risk factors for non-communicable diseases that stem from unhealthy diets and physical inactivity by means of essential public health action and health-promoting disease-preventive measures
- To increase the overall awareness and understanding of all the influences of diet and physical activity on health and of the positive impact of preventive interventions
- To encourage the development, strengthening and implementation of global, regional, national and community policies and action plans to improve diets and increase physical activity that are sustainable, comprehensive, and actively engage all sectors, including civil society, the private sector and the media
- To monitor scientific data and key influences on diet and physical activity; to support research in a broad spectrum of relevant areas, including evaluation of interventions; and to strengthen the human resources needed in this domain to enhance and sustain health

The *Global Strategy* is based on the evidence that a healthy lifestyle, which includes a healthy diet and physical activity and avoidance of tobacco can lead to a long and healthy life. The document acknowledges that more research is required, but that urgent public health action is required to improve health. Recommendations for diet and for physical activity are given to guide policy makers. For diet, the recommendations for populations and individuals should include:

- achieve weight balance and a healthy weight
- limit energy intake from total fats and shift fat consumption away from saturated fats and towards the elimination of trans-fatty acids
- increase consumption of fruit, vegetables, whole grains and nuts
- limit the intake of sugars
- limit salt consumption

For physical activity the recommendations state that individuals engage in adequate levels throughout their lives. For adults at least thirty minutes of regular, moderate
intensity physical activity on most days is recommended to reduce the risk of cardiovascular disease, diabetes, and colon and breast cancer. More activity may be required for weight control.

**Principles for action**

The *Global Strategy* sets out the seven principles upon which it is based and recommends their use in the development of national and regional strategies.

1. Strategies need to be based on the best available scientific research and evidence. Strategies should be consistent with the Ottawa Charter and must recognise the complex interactions between personal choice, social norms and economic and environmental factors.

2. A life-course approach is seen to be essential. This includes good nutrition from the antenatal period through all the stages of life and encourages physical activity from youth to old age.

3. Strategies must include a comprehensive and coordinated approach to tackle non-communicable disease. This must include all aspects of good nutrition, from breast feeding, under-nutrition and over-nutrition, to food security and food safety. For physical activity, all settings must be considered including the home, schools and workplaces, as well as environmental factors such as city planning, safety and access to facilities.

4. Priority should be given to activities that will benefit the most disadvantaged groups and communities.

5. Evaluation, monitoring and surveillance are essential for all policies implemented.

6. Gender differences, cultural factors and the variation in need according to age must be considered when developing policy.

7. Policies and plans must be culturally appropriate, bearing in mind that dietary habits and patterns of physical activity are based on local and regional traditions. National strategies should be able to respond to changes over time.
Responsibility for action

WHO recognises that bringing about the desired changes in dietary habits and patterns of physical activity will need long-term action and will require the cooperation and collaboration of many stakeholders. WHO itself will provide leadership and support to member states in the development of, and implementation of national strategies. Recommendations for action are also given for: member states, particularly for government action; international partners; civil society and non-governmental organisations; and the private sector.

Governments

Most emphasis is given to the role of governments:

1. Governments are encouraged to build on existing policies and action plans, but the need for incorporating mechanisms to coordinate the implementation of a comprehensive plan, is also emphasised.

2. Ministries of Health are identified as the department to coordinate and facilitate the contribution of other departments.

3. The need to have broad support for strategies and plans is highlighted. To achieve this, strategies should be supported by effective legislation, appropriate infrastructure, implementation programmes, adequate funding, monitoring, and follow-up. Governments are encouraged to develop national strategies and guidelines on diet and physical activity.

4. Governments should also provide accurate and balanced information that will enable people to make healthier choices. Care must be taken that the information needs of all consumers are met. This can be achieved through:
   a. Education, communication and public awareness. Consistent, coherent, simple messages should be conveyed by governments on the relationship between diet, physical activity and health.
b Health literacy. Health literacy should be incorporated into adult education programmes

c Marketing, advertising, sponsorship and promotion. Marketing of food and beverages should not exploit children’s inexperience and credulity. Messages that encourage unhealthy behaviour should be discouraged, and positive, healthy messages should be encouraged.

d Labelling of foodstuffs. Accurate comprehensive information that will allow customers to make healthy choices should be included on food labels.

e Information from food producers. Food producers should not provide messages that can mislead the public about nutritional benefits or risks.

5. National food and agricultural policies should be consistent with the protection and promotion of public health. Governments are asked to ensure that policies facilitate the adoption of a healthy diet and that food and nutrition policies incorporate food safety and food security. Four aspects are specifically addressed:

a Promotion of food products should be consistent with a healthy diet. Governments could consider additional measures to encourage the reduction of the salt content of processed foods, the use of hydrogenated oils and the sugar content of beverages and snacks.

b Fiscal policies through taxation, subsidies and pricing policy can be used to encourage healthy eating.

c Food programmes for disadvantaged groups should ensure that the quality and nutritional content of the food contributes to a healthy diet and that nutrition education forms part of the programmes.

d Governments should consider healthy nutrition in their agricultural policies, as agricultural policy and production can have an effect on national diet.

6. Multi-sectoral policies are encouraged as a way of increasing physical activity.

a National and local government policies should ensure that: walking, cycling and other forms of physical activity are accessible and safe; transport policies include
non-motorised forms of transport; workplace policies encourage physical activity; and sports and recreational facilities are suitable for all.

b Strategies should be geared to include community involvement to help change social norms so that the integration of physical activity into everyday life is accepted as normal. Environments that facilitate physical activity should be promoted, and supportive infrastructures should be set up to increase access to and use of facilities.

c Ministries of Health should take the lead department in forming partnerships with all stakeholders in developing strategies.

d Clear public messages should be given on the quantity and quality of physical activity necessary to provide substantial health benefits.

7. School policies and programmes should support the adoption of healthy diet and physical activity. Schools should be encouraged to provide children with daily physical activity and governments are encouraged to adopt policies that ensure healthy eating in schools.

8. Member states are encouraged to establish mechanisms to promote participation of non-governmental organisations, civil society, communities, the private sector and the media in activities related to diet, physical activity and health. Governments should consult with stakeholders on policy. Ministries of Health are charged with establishing the mechanisms and strengthening intersectoral working at all levels.

9. Health services and other services, particularly primary care, have an important role in prevention. Routine contacts with health service staff should include advice to patients on the benefits of healthy diet and increased physical activity. Governments should consider incentives to encourage preventive services and identify ways of financing a structure to enable health professionals to dedicate more time to prevention.
a Health care providers, particularly those in primary care play an important role in prevention by giving advice on diet and physical activity. Activities include the measurement of the key biological risk factors eg blood pressure and cholesterol level, and the identification and management of high risk individuals including referral to specialist services. Training of personnel to deliver these interventions is essential.

b Health professionals and consumer groups should be involved in raising awareness of government policies in order to enhance their effectiveness.

10. Governments are also required to invest in surveillance, research and evaluation.
   a Monitoring and surveillance are essential tools in the implementation of national strategies.
   b Research, especially in community demonstration projects and in evaluating policies and interventions, should be promoted.

11. National institutions for public health, nutrition and physical activity, under the Ministry of Health, are called upon to implement programmes.

12. Governments are asked to ensure that adequate funding, from various sources, in addition to the national budget, is provided to assist in the implementation of the strategy.

**International partners**

The role of international partners is of paramount importance in achieving the goals of the *Global Strategy*. Organisations of the United Nations system, intergovernmental bodies, non-governmental organisations, professional associations, research institutions and the private sector can all contribute.

**International standards**

Suggestions are made for the introduction of international codes and standards in: labelling of foodstuffs on the content and benefits of products; measures to minimise the
impact of marketing on unhealthy dietary patterns, more detailed information on healthy eating patterns, including steps to increase the consumption of fruit and vegetables; and the development of processing standards on the nutritional quality and safety of products.

Civil society and non-governmental organisations
Civil society and non-governmental organisations can play a role in influencing individual behaviour and can help ensure that consumers ask government to provide support for healthy lifestyles, and also ask the food industry to provide healthy products.

Private sector
The private sector can play a significant role in promoting healthy diet and physical activity. The food industry, retailers, catering companies, sports-goods manufacturers, advertising and recreation businesses, insurance and banking groups, pharmaceutical companies and the media have been identified as having important roles as responsible employers and as advocates for healthy lifestyles.

Follow up and future developments
WHO will take responsibility for reporting on progress made in implementing both the Global Strategy and national strategies. Aspects that will be reported on include:

- patterns and trends of dietary habits and physical activity and related risk factors for major non-communicable diseases
- evaluation of the effectiveness of policies and programmes to improve diet and physical activity
- constraints or barriers encountered in implementation of the strategy and the measures taken to overcome them
- legislative, executive, administrative, financial or other measures taken within the context of the strategy

WHO will also work at global and regional levels to set up a monitoring system and to design indicators for dietary habits and patterns of physical activity.
USA

The Surgeon General’s call to action to prevent and decrease overweight and obesity 2001

The Surgeon General together with the Office of Disease Prevention and Health Promotion and other agencies in the Department of Health and Human Services developed *The Surgeon General’s call to action to prevent and decrease overweight and obesity 2001* in response to the escalating problem in the USA. Evaluation of progress from 1990 to 2000 showed that the trends for overweight and obesity had steadily moved in the wrong direction. Both overweight and obesity are therefore key health objectives for the first decade of the 21st century.

The process of developing this *Call to Action* began in December 2000, when the Surgeon General hosted a public Listening Session on Overweight and Obesity. Discussion focussed on interventions and activities in five key settings: families and communities; schools; health care; media and communications; and worksites. Key actions were identified for each of the settings. The key actions were organised by settings into a framework called CARE: Communication; Action; Research; and Evaluation.

**The CARE framework**

The CARE framework has been designed to be implemented at many levels. A multidimensional approach is essential in tackling the problem of overweight and obesity. While individual behavioural change is necessary, efforts must focus on group influences, institutional and community influences and public policy. It is recognised that individual behaviour change can only occur in a supportive environment with accessible and affordable healthy food choices and opportunities for regular physical activity.

The components of the framework are:
**Communication:** the provision of information and tools for decision makers at governmental, organisational, community, family and individual levels who will create change toward the prevention and decrease in overweight and obesity.

**Action:** interventions and activities that assist decision makers to help prevent and reduce the problem of overweight and obesity.

**Research and Evaluation:** investigations to better understand the causes of overweight and obesity, to assess the effectiveness of interventions, and to develop new communication and action strategies.

For all of the five settings identified, the CARE framework is applied, and a list of actions is identified under each section of the framework.

**Setting 1: Families and communities**
Families and communities are fundamental to tackling the problems of overweight and obesity. Emphasis should be placed on family and community opportunities for communication, education and peer support to ensure healthy eating and physical activity. Communication strategies include raising awareness and education of individuals, families and communities on the effects of overweight on health, on healthy eating patterns and the benefits physical activity. Policy makers should be aware of the need to develop social and environmental policy to help communities and families be more physically active and consume a healthier diet.

**Setting 2: Schools**
Schools have been identified as a key setting for public health strategies to prevent and decrease overweight and obesity. Schools provide opportunities for healthy eating and participation in physical activity, as well as reinforcing messages about the benefits of a healthy diet and physical activity. However, public health approaches in schools should extend beyond health and physical education, to include school policy, the school social and physical environment and links between schools and the wider community.
Setting 3: Health Care
The health care setting is also seen as key provider for reducing the prevalence of overweight and obesity, as the majority of the population has a contact with a health care professional in any one year period. Health care providers are seen as advocates for effective public policy and may reinforce interventions in the community and media. Most emphasis in this setting is on the education and training of health care staff.

Setting 4: Media and Communications
The media is an important tool for public education and for social marketing, by the dissemination of health messages and by displaying healthy behaviours. The media can also provide a powerful forum for community members who are addressing the social and environmental influences on dietary behaviour and physical activity patterns.

Setting 5: Worksites
Worksites provide many opportunities to reinforce the adoption and maintenance of healthy lifestyle behaviours. However, public health approaches in worksites should extend beyond health education and awareness to include worksite policies, the physical and social environments of the worksites, and their links with families and communities.

From all of the issues identified across the five settings, 15 activities were selected as national priorities for immediate action. Individuals, families, communities, schools, worksites, health care, the media, industry, organisations and government departments are charged with determining their role and with taking action to prevent and decrease overweight and obesity.

The Surgeon General’s Priorities for action
The priorities for action are arranged in three sections: communication; action; and research and evaluation.
**Communication**

The Nation must take an informed, sensitive approach to communicate with and educate the American people about health issues related to overweight and obesity. Everyone must work together to:

- Change the perception of overweight and obesity at all ages. The primary concern should be one of health and not appearance.
- Educate all expectant parents about the many benefits of breastfeeding.
  - Breastfed infants may be less likely to become overweight as they grow older.
  - Mothers who breastfeed may return to pre-pregnancy weight more quickly.
- Educate health care providers and health profession students in the prevention and treatment of overweight and obesity across the lifespan.
- Provide culturally appropriate education in schools and communities about healthy eating habits and regular physical activity, based on the *Dietary Guidelines for Americans*\(^{31}\), for people of all ages. Emphasize the consumer’s role in making wise food and physical activity choices.

**Action**

The Nation must take action to assist Americans in balancing healthful eating with regular physical activity. Individuals and groups across all settings must work together to:

- Ensure daily, quality physical education in all school grades. Such education can develop the knowledge, attitudes, skills, behaviours, and confidence needed to be physically active for life.
- Reduce time spent watching television and in other similar sedentary behaviours.
- Build physical activity into regular routines and playtime for children and their families. Ensure that adults get at least 30 minutes of moderate physical activity on most days of the week. Children should aim for at least 60 minutes.
- Create more opportunities for physical activity at worksites. Encourage all employers to make facilities and opportunities available for physical activity for all employees.
- Make community facilities available and accessible for physical activity for all people, including the elderly.
- Promote healthier food choices, including at least five servings of fruits and vegetables each day, and reasonable portion sizes at home, in schools, at worksites, and in communities.
- Ensure that schools provide healthful foods and beverages on school campuses and at school events by:
- enforcing existing US Department of Agriculture regulations that prohibit
  serving foods of minimal nutritional value during mealtimes in school food
  service areas, including in vending machines.

- adopting policies specifying that all foods and beverages available at school
  contribute toward eating patterns that are consistent with the Dietary Guidelines
  for Americans.

- providing more food options that are low in fat, calories, and added sugars such
  as fruits, vegetables, whole grains, and low-fat or nonfat dairy foods.

- reducing access to foods high in fat, calories, and added sugars and to excessive
  portion sizes.

- Create mechanisms for appropriate reimbursement for the prevention and treatment
  of overweight and obesity.

Research and Evaluation

The Nation must invest in research that improves our understanding of the causes,
prevention, and treatment of overweight and obesity. A concerted effort should be made
to:

- Increase research on behavioural and environmental causes of overweight and
  obesity.

- Increase research and evaluation on prevention and treatment interventions for
  overweight and obesity, and develop and disseminate best practice guidelines.

- Increase research on disparities in the prevalence of overweight and obesity among
  racial and ethnic, gender, socioeconomic, and age groups, and use this research to
  identify effective and culturally appropriate interventions.
Australia

Acting on Australia’s weight

*Acting on Australia’s weight. A strategic plan for the prevention of overweight and obesity*[^1] is a ten year plan published by the National Health and Medical Research Council Working Party on the prevention of overweight and obesity. The working party was set up following a 1995 report by the Australasian Society for the Study of Obesity (ASSO) entitled *Healthy Weight Australia*[^2], which stressed the need to increase the proportion of Australians who maintain a healthy weight throughout life.

*Acting on Australia’s weight*, reviews overweight and obesity in Australia and reviews the effectiveness of initiatives aimed at the prevention of obesity. It then makes recommendations on appropriate structural and educational strategies and advises on the implementation of these strategies. The model that was adopted for the *Plan* proposes that the three main influences on body fat equilibrium are biological, environmental and behavioural. The importance of biological or inherited factors is acknowledged but the document states that most overweight and obesity develops from lifestyle and environmental factors. Opportunities for intervention therefore lie in changing environmental factors and by influencing lifestyles.

The *Plan* suggests that the macro-environment of food supply and opportunities for physical activity determines the prevalence of obesity in a population and the micro-environment of knowledge, beliefs, social attitudes and behaviour determine the presence of obesity in the individual. The model therefore proposes a supportive macro-environment as the main public health strategy, but also highlights the need for programs that aim to influence behaviour and the micro-environment of target groups.

The strategic plan focuses on changes to the macro-environment that will make it easier for people to undertake physical activity and make healthier food choices. However, improvements to the macro-environment need to be accompanied by complementary activities focusing on shaping the micro-environment of knowledge, beliefs, social...
attitudes and behaviour to influence the presence of overweight and obesity in individuals.

All of the strategies for implementation of the Plan are organised in nine categories. These categories give details on:

- the time frame for implementation
- the lead agency or agencies for implementation
- collaborating agencies
- the estimated cost
- the potential impact, as the estimated potential to prevent overweight and obesity: high – great potential to prevent overweight and obesity; medium; or low – low potential to prevent overweight and obesity
- achievability, which indicates the potential ease of implementation: high - minimal difficulty to implement; medium; or low – difficult to implement
- sustainability, which indicates the longevity of the strategy implementation: high – relatively easy to implement; medium; low – will require a large amount of effort or funds to sustain
- performance indicators which have been developed to indicate how progress towards meeting individual strategies may be measured
- target groups – priority groups for this plan are Aboriginal and Torres Strait Islander people, men aged 25-40 years, post menopausal women, and children and adolescents

**Strategies for implementation**
The Plan has eight strategies for implementation: infrastructure and education; workplaces; schools; community environments; healthcare; research; monitoring and evaluation; and coordination of effort. All of the strategies have several strands and for every strategy a rationale is given. These strategies focus on the macro-environment to make it easier for people to undertake physical activity and make healthier food choices.
The Plan is accompanied by a detailed review of overweight and obesity in Australia. The review looks at the causes and prevalence of overweight and obesity, the economic issues in the prevention and treatment of overweight and obesity, the role of physical activity and inactivity, the effects of cardiovascular risk factor interventions on weight and weight loss beliefs and practices in Australia. All of these chapters contain a section on the public health implications, suggesting ways in which overweight and obesity can be addressed.

Healthy Weight 2008 – Australia’s Future

At a meeting of Australian Health Ministers in Sydney on 28 November 2003, the Government's Task Force on Obesity presented the National Action Agenda for Children and Young People and Their Families – Healthy Weight 2008: Australia's Future, which contains recommendations to the Government for tackling childhood obesity. Following this, Australian Health Ministers asked the National Obesity Taskforce to lead and coordinate the implementation of Healthy Weight 2008 and to provide advice on strategies to address obesity in adults and older Australians.

Healthy Weight 2008 is a four year plan. The broad focus is on supportive environments that will encourage healthier lifestyles. It places emphasis on the prevention of overweight and obesity rather than on treatment, partly because overweight and obesity are difficult conditions to treat. The document acknowledges that there is no single cause of obesity. For some, it is due to a genetic disposition, but the decline in physical activity in children and the increase in unhealthy eating over the past twenty years has been the major problem. The changes in behaviour have been driven by social, cultural, physical and economic conditions. For that reason an approach is needed which creates living environments that support healthy eating and physical activity and encourages families to adopt healthier lifestyles.

Healthy Weight 2008 presents a national strategic framework for action to address overweight and obesity in children and young people (0-18 years). It is seen as the first
phase of a long term approach to tackling overweight and obesity. Addressing the needs of adults and older people will be developed after the life of this plan.

A key requirement is to support young people and their families in the home and the wider community. A cross-sectoral, multi-settings approach is needed to reach the young people and to address the underlying environmental and lifestyle causes of overweight.

*Healthy Weight 2008* gives a framework for action in various settings and also describes national strategies to tackle overweight and obesity. For every setting desired outcomes are listed. These are accompanied by actions which will commence in 2004.

**Settings are:**

- Child care (including child care centres, family day care and outside school hours care)
- Schools – Primary and Secondary (including public and private schools, and use of school facilities)
- Primary Care Services, (including general medical practice, community health centres, and other community-based and private sector services)
- Family and Community Care Services (including social work, child protection, juvenile justice, and outreach services to vulnerable and disadvantaged groups)
- Maternal and Infant Health (including hospitals, infant and child health clinics, and community health services)
- Neighbourhoods and Community Organisations (including state/territory government, local government, community groups, recreation and sporting bodies, and private organisations)
- Workplaces (including government, private and non-government work settings both formal and informal)
- Food supply (including, producers, manufacturers and retailers eg supermarkets, markets, stores, and food service outlets eg restaurants, cafes and take-aways)
- Media and marketing (including television, cinema, videos, electronic games, internet and commercial advertising, marketing and promotions)
National strategies

- Support for families and community-wide education (including public policy and planned mass media communication and education)
- Whole community demonstration areas (integrated actions from all the settings implemented in discrete population areas as potential models for wider long term implementation in other communities and to enhance community ownership and capacity for sustained action)
- Evidence and performance monitoring (including measurement, analysis, evaluation, policy and action research to inform planning and management, and enhance accountability)
- Coordination and capacity building (including strategic management, operational coordination, infrastructure support, community and stakeholder strengthening and professional development)

The Strategy lists forty outcomes that are sought across these areas and suggests actions to be taken under the leadership of the health sector. Examples of the outcomes sought include: ensuring that settings such as schools and care centres promote healthy eating and physical activity; improving the knowledge of carers and teachers and the public; improving facilities and opportunities for physical activity; providing improved access and availability of the facilities in the community, schools and workplaces; referral of individuals affected by overweight to specialist services; improved access to healthy foods; and the protection of young people against the promotion of unhealthy foods. For every setting, actions to be taken are also listed. Many of these proposed actions involve establishing collaborative working across many areas and the development and/or dissemination of guidelines on healthy eating and opportunities to increase physical activity.
New Zealand

Healthy Eating - Healthy Action

*Healthy Eating - Healthy Action*\(^{23,33}\) is New Zealand’s strategy for reducing mortality and morbidity from diseases that can be prevented by healthy eating and by being physically active (particularly cardiovascular disease, diabetes, cancer and obesity). The *Strategy* addresses nutrition, physical activity and obesity. The *New Zealand Health Strategy*\(^{17}\) identified thirteen priority areas for population health. Nutrition, overweight and obesity, and physical activity are three of these health priorities. However, because these issues are inherently inter-related, *Healthy Eating - Healthy Action* provides an integrated approach by addressing the three areas simultaneously. The Strategy document\(^{23}\) has an accompanying background paper\(^{33}\) which provides justification for the framework.

*Healthy Eating - Healthy Action* is a five year plan. It is directed at a range of stakeholders. It identifies the key policy priorities for the Ministry of Health and aims to guide District Health Boards in the funding of programmes and services. Research priorities are identified and the need for intersectoral working is identified, particularly between central and local government, non government organisations and industry. Fundamental to *Healthy Eating - Healthy Action* is the recognition that environmental modification is necessary, as well as behavioural change in order to improve nutrition, increase physical activity and reduce obesity. Reducing inequalities in health is central to the aims of the *Strategy*.

The Strategy is based on five key priorities for action

- low socio-economic groups
- children, young people and their families
- environments
- communication
- workforce
These priorities were selected, after consultation, as the most likely to result in progress towards the overall goals of the strategy (to improve nutrition, increase physical activity, and reduce obesity).

The framework for *Healthy Eating – Healthy Action* is based on the principles of the Ottawa Charter. For every priority area, the rationale is given for its selection as a priority. Each priority area has six objectives based on the components of the Ottawa Charter:

1. build healthy public policy
2. create supportive environments
3. strengthen community action
4. develop personal skills
5. reorient services and programmes
6. monitor, research and evaluate.

Key actions to be taken are then listed for each objective. To illustrate this two examples are given below:

Priority 1 is lower socioeconomic groups.

The document states that significant health gains can be achieved through improving nutrition, increasing physical activity and maintaining a healthy body weight among socioeconomic groups, who may have difficulty accessing good nutrition and being physically active.

Objective 1.2 therefore is to create supportive environments for lower socio-economic groups. Proposed key actions are:

- Work with the food industry, local government and non-government organisations to encourage the increased availability of affordable, healthy food choices and physical activity opportunities
- Create safe environments for physical activity, such as footpaths, access to public transport, lighting, parks etc
Create a range of environments that support healthy eating, which are accessible and appropriate for lower socio-economic groups

Priority 3 is environments.
The document states that environments need to be developed and modified to support good nutrition, physical activity and healthy weight across all key sectors and settings.

Objective 3.5 is to reorient services and programmes to modify environments. Proposed key actions are:

- Encourage and support services and programmes with demonstrated effectiveness to integrate nutrition, physical activity and healthy weight initiatives into each programme (across, for example, transport, local government, education and health)
- Support the development of appropriate programmes and services for the treatment of overweight, and obesity, including partnership with treatment and prevention services.

The actions identified in the document are high level actions directed at the whole population and/or specific groups. It does not give details on the implementation of the recommended actions, but states that more specific actions will be developed as part of the implementation plan.

New Zealand’s Toolkits

In addition to Healthy Eating – Healthy Action, New Zealand provides toolkits on nutrition, obesity and physical activity. These toolkits are designed to give guidance to District Health Boards in addressing the health priorities identified in the New Zealand Health Strategy. Both the obesity and physical activity toolkits are based on the framework of the Ottawa Charter. Within the broad framework a setting-based approach is used.
**Obesity toolkit**

Until recently, obesity prevention and obesity management were perceived as two distinct processes. Overweight or obese patients were managed by clinicians and the aim of treatment was weight loss. Preventive measures were undertaken by health promotion or public health personnel. It is now realised that obesity management must cover long-term strategies ranging from prevention through weight maintenance, the management of obesity co-morbidity and weight loss. These need to be coordinated in a variety of settings.

The toolkit on obesity reports that the evidence for the effectiveness of many of the suggested interventions is inconclusive due to a lack of well-evaluated interventions as well as evaluation difficulties. However, it proposes a comprehensive approach which addresses:

- Provision of supportive environments
- Health promotion of healthy eating and increasing physical activity
- Effective, sympathetic and accessible services for obese people
- Trained staff skilled in obesity prevention and weight management
- Credible publicity about healthy food intake and practical physical activity
- In cooperation with the food industry, reduction in the availability of high fat/high sugar foods
- Development of awareness of the childhood risk of obesity and development of strategies to manage and support families with obese children
- Regional data collection, information dissemination and research
- A framework for community action
- A well structured programme for monitoring and evaluation

The toolkit goes on to describe what District health Boards can do at a public health level (settings) and in primary care. The suggested settings for delivery of interventions are:

- The media (influence purchasing and knowledge)
- Food consumption environments (schools, workplaces, homes)
- Food service industry (restaurants, takeaways)
• Food industry (influences consumption and marketing)
• Communities (influence cultural food consumption patterns)

**Physical activity toolkit**

Physical activity strategies from around the world were reviewed and several common elements were identified and seen as essential for implementing a physical activity strategy

• getting political endorsement and commitment from government at a national level
• recognising that promotion of physical activity is the responsibility of a wide range of government and non-government agencies
• providing a framework for different sectors to collaborate
• recognising that moderate-intensity physical activity is the key public health message, but that it must be backed up by strategies that make it easy for people to become active
• recognising the need to influence the whole population but also targeting those groups most at risk from being inactive
• continuing evaluation of the effectiveness of campaigns and programmes to learn what works and what does not
• identifying factors that encourage long-term compliance or maintenance of physical activity.

The toolkit gives a list of potential settings based interventions that district Health Boards could work collaboratively to support and implement. Proposed settings and potential actions include: schools; workplaces; communities/neighbourhoods; homes; local health care and health promotion; health system; media; health insurance; fitness/leisure industry; transport system and urban/rural development; and government and regional/national organisations
Current policy on obesity, nutrition and physical activity

Strategies to address obesity may be spread across several public health policy documents (Table 1, page 72). These inevitably include healthy eating and strategies to increase physical activity. The majority of documents were identified from Ministry of Health websites. A few documents from other departments were identified, e.g., two documents from England, *Game Plan: a strategy for delivering Government's sport and physical activity objectives* from the Department of Media and Sport and *Learning through PE and Sport*, from the Department for Education and Skills. The websites of these departments and other potentially relevant sites such as Departments of Education, Transport or Social Welfare were not systematically searched.

We were unable to find policy documents from Finland. This is unfortunate as Finland boasts major successes in healthy eating, including a trebling of vegetable consumption in 20 years\(^\text{19,37}\). Finland also has a reputation for being a physically active nation\(^2\). A recent review, *Nutrition in Finland*\(^\text{38}\), from the National Public Health Institute, gives details of nutritional guidelines and recommendations dating from the late 1960s. Similarly, few policy documents were found for Canada. However, Canada is currently developing an *Integrated Pan-Canadian Healthy Living Strategy*\(^\text{39}\). This collaboration between Federal/Provincial/Territorial Ministers of Health will initially focus on physical activity, healthy eating and their relationship to healthy weight.

**Obesity policies**

Only four countries have specific strategies on overweight and obesity (Australia, Denmark, New Zealand and the USA).

**Nutrition policies**

The majority of countries have a nutrition policy in place, and these may also address obesity, particularly in making recommendations for fat consumption. Some countries have had nutrition policies for many years. For example, in 1978, Finland officially adopted general nutrition guidelines and created a nutritional policy\(^\text{40}\). By 1981 dietary guidelines had been disseminated to the whole population. The widespread general
interest in nutrition is attributed to the North Karelia Project. However, since 1948 all Finnish school children have been provided with free lunches and since the 1970s recommendations have been issued for workplace lunches\textsuperscript{38}. Australia’s public health nutrition strategy which was adopted in 1979, has undergone several reviews. Despite this history nutrition policies are still evolving. For example England has a Food and Health Action Plan which was put out for consultation in July 2003\textsuperscript{41}.

**Physical activity policies**

In recent years all countries have introduced strategies to increase levels of physical activity. Many of these strategies are also under development, such that initial documents are superseded within a few years. In some countries, such as Scotland\textsuperscript{25}, obesity is directly mentioned within the policy document. However some policies have other main aims; for example England’s *Game Plan*\textsuperscript{35} policy is concerned about achieving international sporting success as well as increasing activity levels in the general population.
Targets

The use of targets for obesity, nutrition and physical activity varies substantially between the countries studied. While the majority of countries have targets for nutrition, few have targets for obesity or physical activity.

Targets for obesity

Only four countries have set specific targets for obesity. The USA\(^42\) sets targets for adults who are at a healthy weight as well as to reduce the proportion who are obese. Japan\(^43\) sets separate targets for children and men and women from age groups that have been shown to be at risk. Both countries have ambitious targets given the rate at which obesity is currently increasing. Northern Ireland’s target is to halt the increase in the prevalence of obesity in adults\(^44\). England’s only target, set in July 2004, is to halt the year on year rise in obesity among children under 11 years by 2010\(^45\).

<table>
<thead>
<tr>
<th><strong>Obesity targets</strong></th>
<th>Initial prevalence</th>
<th>Target prevalence (2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>USA</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adults at healthy weight</td>
<td>42%</td>
<td>60%</td>
</tr>
<tr>
<td>Obese adults</td>
<td>23%</td>
<td>15%</td>
</tr>
<tr>
<td>Overweight or obese children and adolescents</td>
<td>11%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Japan</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obese men (20-69 years)</td>
<td>24.3%</td>
<td>15%</td>
</tr>
<tr>
<td>Obese women (40-69 years)</td>
<td>25.2%</td>
<td>20%</td>
</tr>
<tr>
<td>Obese school children</td>
<td>10.7%</td>
<td>7%</td>
</tr>
<tr>
<td><strong>Northern Ireland</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obese men</td>
<td>17%</td>
<td>&lt;17%</td>
</tr>
<tr>
<td>Obese women</td>
<td>20%</td>
<td>&lt;20%</td>
</tr>
<tr>
<td><strong>England</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obese children</td>
<td></td>
<td>halt the year on year rise in obesity in children under 11</td>
</tr>
</tbody>
</table>
**Targets for nutrition**

We identified nutritional targets for five countries; Japan; New Zealand; Northern Ireland; Scotland; and the USA. Most common are targets for foodstuffs and the proportion of calories from fats. The other targets cover dietary intake of grain, bread and cereals, fruit and vegetables and sugar.

<table>
<thead>
<tr>
<th>Examples of nutrition targets</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Foodstuff/nutrient</strong></td>
<td><strong>Target</strong></td>
</tr>
<tr>
<td>% total dietary energy from fat</td>
<td>35% (from 40.75%)</td>
</tr>
<tr>
<td>% adults whose fat intake is &gt;40% of total energy intake</td>
<td>zero</td>
</tr>
<tr>
<td>% saturated fatty acids to dietary energy</td>
<td>10% (from 17.5%)</td>
</tr>
<tr>
<td>Bread and cereals</td>
<td>75% of population consuming ≥6 servings per day</td>
</tr>
<tr>
<td>At least 2 daily servings of fruit</td>
<td>75% of population (from 28%)</td>
</tr>
<tr>
<td>Daily vegetable intake</td>
<td>350 grams or more (from 292 grams)</td>
</tr>
<tr>
<td>% total dietary energy from sucrose and other free sugars</td>
<td>15% or less</td>
</tr>
<tr>
<td>Oil rich fish consumption</td>
<td>88 grams per week (from 44 grams per week)</td>
</tr>
</tbody>
</table>

Japan is unusual in setting several targets for dietary knowledge and behaviour. These are attractive because they identify some of the changes which will be required in order to meet the nutritional targets.

<table>
<thead>
<tr>
<th>Japan’s targets for dietary knowledge and behaviour</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Initial prevalence</td>
</tr>
<tr>
<td>% aware of optimal weight</td>
<td>62.6% males 80.1% females</td>
</tr>
<tr>
<td>% who skip breakfast</td>
<td>32.9% men (20-29 years) 20.5% men (30-39 years) 6% junior/high school students</td>
</tr>
</tbody>
</table>
Japan’s targets for dietary knowledge and behaviour (continued)

<table>
<thead>
<tr>
<th>% who eat balanced meals at least once per day in the company of 2 or more persons, and spend 30 or more minutes per meal</th>
<th>56.3%</th>
<th>70% or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>% who read nutrition labels</td>
<td>Baseline level not available at time of publication</td>
<td>To be decided when baseline level is available</td>
</tr>
<tr>
<td>% who know appropriate size of meal to maintain optimal weight</td>
<td>65.6% adult males 73.0% adult females</td>
<td>80% or more</td>
</tr>
<tr>
<td>% who desire dietary improvement (if diet is perceived to be a problem)</td>
<td>31.6% adult males 33.0% adult females</td>
<td>80% or more</td>
</tr>
</tbody>
</table>

The USA takes a different approach and specifies targets for nutrition and education at specific settings: schools; worksites; and primary care. These targets will help monitor specific mechanisms which could lead to changes in dietary behaviour.

USA’s targets for settings

<table>
<thead>
<tr>
<th></th>
<th>Initial prevalence</th>
<th>Target prevalence (2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase % of children and adolescents whose meals and snacks at school contribute to good dietary quality</td>
<td>Developmental target (no baseline data at time of publication)</td>
<td></td>
</tr>
<tr>
<td>Increase % of worksites that offer nutrition or weight management classes or counselling</td>
<td>55% of worksites with more than 50 employees</td>
<td>85%</td>
</tr>
<tr>
<td>Increase % of physician contacts by patients with cardiovascular disease, diabetes or hyperlipidaemia that include counselling</td>
<td>42%</td>
<td>75%</td>
</tr>
</tbody>
</table>

Lastly, Japan identifies the environmental changes to achieve changes in diet. These targets are new therefore no reference values were available at the time of publication. Data from the Nutrition Survey in 2000 will provide baseline data, and targets for 2010 will be set.
Japan’s targets for environmental change

<table>
<thead>
<tr>
<th>Target</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Increase availability and use of healthy menus in cafeterias, workplaces, restaurants, and food retailers</td>
</tr>
<tr>
<td>2</td>
<td>Increase opportunities to obtain information on health and nutrition in the community and workplace</td>
</tr>
<tr>
<td>3</td>
<td>Increase number of voluntary groups involved in study and activities related to health and nutrition in the community and workplace</td>
</tr>
</tbody>
</table>

Targets for physical activity

More of the countries included in the review have targets for physical activity. The most common target is that a greater proportion of the population should undertake the recommended levels of physical activity. This usually includes thirty minutes of moderate activity on most days of the week for adults and an hour on most days for children. England’s target is that 70% of the adult population achieves 30 minutes of moderate activity on five days of the week by 2020\(^{35}\). New Zealand aims for 75% of adults to be moderately active for at least 30 minutes on most, if not all days of the week, by 2010\(^{27}\). Scotland’s target is that 50% of adults over 16 years will be physically active for 30 minutes on most days and 80% of children should accumulate an hour of physical activity on most days by 2022\(^{25}\).

Japan and the USA have the most innovative targets for physical activity. Japan’s targets are given for adults and older people are given separately. The targets for adults are to increase awareness about the importance of physical activity; to increase walking and also to encourage more vigorous exercise. Japan is the only country with physical activity targets for older people. The aim for older people is to increase the number of elderly who take a positive attitude towards going outside and to increase social activity as well as increasing walking.
<table>
<thead>
<tr>
<th>Japan’s targets for physical activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Adults</strong></td>
</tr>
<tr>
<td>Awareness of importance of</td>
</tr>
<tr>
<td>physical activity. Number of people</td>
</tr>
<tr>
<td>who intentionally participate in</td>
</tr>
<tr>
<td>physical activities to maintain and</td>
</tr>
<tr>
<td>promote their health</td>
</tr>
<tr>
<td>Number of steps walked in daily</td>
</tr>
<tr>
<td>life</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Number of individuals who do</td>
</tr>
<tr>
<td>regular physical exercise (exercise</td>
</tr>
<tr>
<td>that makes you pant), over 30</td>
</tr>
<tr>
<td>minutes, more than twice per week</td>
</tr>
<tr>
<td>for at least a year</td>
</tr>
<tr>
<td><strong>Older people</strong></td>
</tr>
<tr>
<td>% who like to go shopping, take a</td>
</tr>
<tr>
<td>walk, and go outside by themselves</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>% who join certain local community</td>
</tr>
<tr>
<td>activity programmes</td>
</tr>
<tr>
<td>Number of steps walked in daily</td>
</tr>
<tr>
<td>life</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

The USA’s targets are divided into four sections: physical activity in adults; muscular strength/endurance and flexibility; physical activity in children and adolescents; and access to physical activity. The USA, like Japan, has targets to increase both moderate physical activity and vigorous activity. Targets for both moderate physical activity and vigorous activity have been set for adults and adolescents. The USA also wants to increase physical activity within schools, both during and outside school hours.
Importantly, they also set a target to ensure that at least 50% of time designated to physical activity in class is spent being physically active. The USA is alone in setting a target to reduce the time spent by adolescents watching television. The targets for increasing access to physical activity include making school facilities available outside school hours, increasing physical activity and fitness programs in the workplace and by increasing the proportion of trips made by cycling and walking.

<table>
<thead>
<tr>
<th>USA’s targets for physical activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Adults</strong></td>
</tr>
<tr>
<td>% of adults who engage in no</td>
</tr>
<tr>
<td>leisure-time physical activity</td>
</tr>
<tr>
<td>% of adults who engage regularly,</td>
</tr>
<tr>
<td>preferably daily, in moderate</td>
</tr>
<tr>
<td>physical activity for at least 30</td>
</tr>
<tr>
<td>minutes per day</td>
</tr>
<tr>
<td>% of adults who engage in</td>
</tr>
<tr>
<td>vigorous physical activity that</td>
</tr>
<tr>
<td>promotes the development and</td>
</tr>
<tr>
<td>maintenance of cardiorespiratory</td>
</tr>
<tr>
<td>fitness 3 or more days per week</td>
</tr>
<tr>
<td>for 20 or more minutes per</td>
</tr>
<tr>
<td>occasion</td>
</tr>
<tr>
<td><strong>Muscular strength/endurance and</strong></td>
</tr>
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<td><strong>flexibility</strong></td>
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<td>% of adults who perform physical</td>
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<td>activities that enhance and</td>
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<td>% of adults who perform physical</td>
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<td>activities that enhance and</td>
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<td>maintain flexibility</td>
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<tr>
<td><strong>Physical activity in children and</strong></td>
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<tr>
<td><strong>adolescents</strong></td>
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<tr>
<td>% of adolescents engaging in</td>
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<tr>
<td>moderate physical activity for at</td>
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<td>least 30 minutes on 5 or more days</td>
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<td>% of adolescents engaging in</td>
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<tr>
<td>vigorous physical activity 3 or</td>
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<tr>
<td>more days per week for 20 or</td>
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<td>more minutes per occasion</td>
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<tr>
<td>USA's targets for physical activity (continued)</td>
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<tr>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>% of the Nation's public and private schools that require daily physical education for all students</td>
</tr>
<tr>
<td>% of adolescents who participate in daily school physical education</td>
</tr>
<tr>
<td>% of adolescents who spend at least 50% of school physical education class time being physically active</td>
</tr>
<tr>
<td>% of adolescents who view television 2 or fewer hours on a school day</td>
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</tbody>
</table>

**Access**

| Increase % of schools that provide access to their physical activity spaces and facilities for all persons outside of normal school hours | No baseline data available at time of publication |
| Increase % of worksites offering employer-sponsored physical activity and fitness programs | 46% | 75% |
| Increase % of trips made by walking | 17% adults, trips < 1 mile, 31% children, trips to school ≤1 mile | 25% 50% |
| Increase % of trips made by bicycling | 0.6% adults, trips ≤5 miles, 2.4% children, adolescents, trips ≤2 miles | 2.0% 5.0% |
Policy interventions to reduce obesity

This section provides a compilation of the types of interventions proposed by the countries to tackle obesity. Because policies on nutrition and on physical activity propose interventions which will contribute to reducing obesity these have also been included. Thus all interventions or actions which will lead to a reduction in consumption of high fat or high sugar foods, or to an increase in the consumption of fruit, vegetables or grains, have been included. Similarly all interventions from physical activity policies which will lead to increased activity levels among groups in the general population are described. Interventions to increase sporting success are excluded.

Several countries with obesity strategies emphasise the need for coordination between the obesity, nutrition and physical activity strategies. New Zealand argues that the topics are inherently inter-related and has therefore produced an integrated strategy for improving health. Thus its toolkit on obesity combines nutritional and physical activity interventions within specific settings such as schools, workplaces, and health care. Denmark points out that nutrition and exercise are closely linked in both health care professionals’ and the general public’s understanding of healthy lifestyles. Norway, although it does not address obesity directly, includes physical activity and nutrition in a section on lifestyle choices. Thus its package of proposed actions combines interventions in both areas. Australia also adopts this combined approach and its guidelines on nutrition and physical activity are grouped together to ensure they provide the necessary complementary approach to tackling obesity. The United States does not explicitly link its policies on nutrition and physical activity, but it does identify instances of overlap and shared interest.

Organisation of strategies

Policy documents vary substantially in the descriptions of the proposed strategies. Many of the proposed actions describe general areas where interventions may be put into place, but the details of the interventions and mechanisms for implementation and evaluation are not given. Strategies within policy can be categorised in many ways. We have
selected ten categories: fiscal; legislative; policy development; transport; media; food and leisure industries; nutrition labelling; social and physical environment; educational strategies; and settings for intervention.

**Fiscal**

No fiscal measures to address obesity were identified in policy documents. However some governments, such as Northern Ireland\(^4\), recognise that cost is an important motivator for healthier food choices.

**Legislative**

All countries have legislation on food safety and hygiene, food additives and contaminants as well as packaging and labelling. No legislative measures to tackle obesity are described in policy. However, New Zealand promises to investigate regulatory and policy options to improve nutrition and increase physical activity. It also calls for appropriate input into any legislation and regulations that impact on food and nutrition, physical activity and healthy weight, both nationally and internationally\(^3\).

**Policy development**

Many policies propose actions in the area of Policy Development, reflecting governments’ commitment to developing effective strategies. Nevertheless, some of the proposed actions suggest that obesity policy is still under development. The US Surgeon General’s Call to Action to Prevent and Decrease Overweight and Obesity\(^1\) wants to raise policy makers’ awareness of the need to develop social and environmental policy that would help communities and families be more physically active and consume a healthier diet. New Zealand states that key leaders should be encouraged and educated to understand the implications of environmental change on influencing obesity and health in general\(^3\). There is also a call to develop policy at all levels (national, regional and local) that will support healthy eating and physical activity by all people. New Zealand and the USA seek the development of policies that will help to increase breast feeding\(^1\)\(^3\).
Wales has had a strategy to promote breast feeding since 2001\textsuperscript{48}. The USA wants demonstration grants to address the lack of access to healthy and affordable foods in inner cities and the lack of public access to safe and supervised physical activity. Work needs to be done at policy level to ensure the inclusion of healthy options in restaurants, worksites, cafeterias and schools.

Policy developments which increase physical activity are also proposed. The USA states that public policy needs to be developed to ensure the provision of safe and accessible sidewalks, walking and bicycle paths, and stairs\textsuperscript{16}. New Zealand’s policy advocates that the impacts on nutrition and physical activity should be considered in the development and re-development of towns, suburbs and communities so that infrastructure becomes more supportive of good nutrition and physical activity\textsuperscript{33}. It also suggests that action should be taken in the planning of buildings; for example buildings could be designed to encourage stair use instead of lifts. Scotland’s physical activity strategy requests that the Scottish Executive, through the proposed strategic planning framework, takes the lead in developing policies and identifying resources to make sure that environments help people to be active in everyday life\textsuperscript{25}.

**Intersectoral working**

All countries recognise that intersectoral working is essential in tackling obesity, improving nutrition and increasing physical activity and have established approaches to encourage cross-sector collaboration. For example Australia\textsuperscript{22} identifies the lead agencies and the collaborating agencies for all of the intervention areas in its obesity policy. Wales also identifies the key stakeholders for each of the task force recommendations in its *Healthy and Active Lifestyles* policy\textsuperscript{49}. Scotland in its physical activity policy\textsuperscript{25}, identifies a wide range of potential collaborators and proposes that a national coordination group be established to ensure the provision of leadership and resources. Its new nutrition policy proposes the creation of a Food and Health Council which will provide leadership and integrate the cross-cutting elements of the food and health policy\textsuperscript{50}.
New Zealand highlights the need to work together in order to increase access to affordable exercise and recreation facilities. Australia advocates that government departments should work with local government to create local environments that can increase physical activity, particularly incidental activity. A recent initiative, “get a life, get active”, is an example of cooperation between countries. The initiative was launched jointly by the Ministers of Health from Ireland and Northern Ireland. Thus most policies make a call to improve and initiate communication and collaboration at all levels, including government, education, health care, local councils, and industry. Although Departments of Health may be identified as the lead agencies in addressing overweight and obesity, many other departments such as transport, education, planning, agriculture and food are recognised as having crucial roles.

**Transport**

Several countries including New Zealand, Australia, Scotland, Northern Ireland and Wales call for the provision of improved cycle lanes and pedestrian walkways, particularly to encourage safe active transport to schools, but also to ensure safe access to physical activity. Safe access includes features such as good lighting on roads and in parks and traffic calming interventions. Australia specifically mentions the value of working collaboratively with organisations to develop initiatives such as National Walking Network and a National Bicycle Strategy. Several countries including Northern Ireland and Wales already have cycling strategies in place. These interventions are mainly aimed at the local level. It is possible that national level strategies are given in transport policies, but their review was beyond the scope of this study. For example, the Northern Ireland Public Health Strategy reports that the regional transportation strategy will contain a range of initiatives that will promote walking and cycling and provide an increase in the walking and cycling infrastructure.

**Media**

Considerable attention is given in several policies to the role of the media. Many of the proposals are to raise awareness about the problems of overweight and obesity and to
provide education for media professionals on policy areas related to diet and physical activity. The USA emphasises the need for media professionals to publicise that the primary concern of overweight and obesity is one of health rather than appearance\textsuperscript{16}. It also suggests training nutrition and exercise scientists and specialists in media advocacy skills that will empower them to disseminate their knowledge to a broad audience. Further, the media is encouraged to employ actors of diverse sizes. Celebrities should be encouraged to act as role models in promoting healthy living activities. Governments are encouraged to develop campaigns with media groups that provide consistent health messages about good nutrition and physical activity, including messages suitable for youth television. The USA encourages community-based advertising campaigns to balance messages that may encourage consumption of excess calories and inactivity generated by fast food industries and by industries that promote sedentary behaviours\textsuperscript{16}. Australia calls for the monitoring of the effectiveness of the Children’s Television Standards and regulatory framework for food and drinks advertising to children in meeting health objectives\textsuperscript{21}. As well as the national media, actions can be taken with regional or local media groups. For example Wales proposes to secure the cooperation of local media to ensure the correct messages are relayed to the public\textsuperscript{51}.

\textbf{Food and leisure industry}

The food and leisure industry have an important role in promoting healthy eating and physical activity. While most countries make recommendations on enlisting the support of the food industry, few proposals appear in policy for actions to be taken by the fitness and leisure industry. New Zealand calls for the fitness and leisure industries to promote cycling and walking for sightseeing\textsuperscript{27}. The food and leisure industries are encouraged to provide truthful and reasonable consumer goals for weight loss programs and weight management products\textsuperscript{42}. New Zealand encourages collaboration with food manufacturers, food technologists and retailers to increase the production of low fat, low sugar foods\textsuperscript{20}. Australia notes that the food industry has already increased the number of low-fat and reduced-fat foods available
in the marketplace. Food manufacturers and retailers are asked to provide more nutrition information on foodstuffs in supermarkets as well as on meals eaten and prepared away from home. Wales is proposing to work with the industry on food advertising and promotion to put into place national schemes to assist improvements in healthy eating. It also proposes to discuss opportunities for same price healthier product lines. Scotland is particularly concerned about marketing to children and hopes to ensure that food promotion acts to promote a healthier lifestyle. It also intends to develop a stronger interface with the food industry with the aim of influencing food composition.

The USA is concerned about the increase in food portion sizes in recent years and highlights the need to encourage the food industry to provide reasonable food and beverage portion sizes. Australia also encourages the food service industry to limit serving sizes and reduce the energy content of less healthy meals and snacks. Further, it asks for the food service industry to support food manufacturers to develop less energy dense foods. New Zealand suggests the introduction of courses on low fat cooking into chef training programmes and is keen to train takeaway bar workers in best practice methods to reduce fat uptake in foods.

**Nutritional labelling**

Many countries recommend improvements to the labelling of the nutrition content of foodstuffs. Scotland plans to develop stronger links with the industry so that it can influence labelling. Wales also plans to take action on food labelling to assist individuals in choosing a healthy diet. A major concern is that the information should be presented in a form which is readily understood. For example the Australia Food Authority has initiated action to create a more satisfactory labelling system that meets consumer requirements and is achievable by the food industry. Australia proposes to take this further by developing a plan to educate both the public and health educators about food labelling. The Ministry of Food in Denmark plans to develop clear and understandable labelling in an attempt to make it easier for customers to choose a healthy
diet and to prevent misrepresentation of the nutritional content of foodstuffs. Japan has a target to increase the proportion of people who read nutritional labels when eating out and purchasing food. This was chosen as a target because in a national survey, respondents reported that reading nutrition labels was a means for achieving dietary improvement.

Educational strategies

Several countries recognise the need for coordinated strategies to ensure that educational interventions reach all sectors of society. For example, the 1994 Australian nutrition policy proposes strategies to reach school children, health care professionals, adult education authorities and the food processing industry. Scotland proposes a multifaceted approach to influence consumers to move to healthier eating habits and identifies many settings for action including community organisations, schools, employers, the media and the voluntary sector. Northern Ireland highlights the importance of accurate consistent and easily understood educational programmes. It notes that there was confusion about healthy eating guidelines and that some advice is inconsistent, and proposes a review of nutrition education in schools, and for teachers and health care professionals.

New Zealand cites scientific evidence which concludes that nutrition education works. It also reviews theories of health behaviour, including social cognition models and social marketing, which provide the basis for the design of educational interventions. Communication is seen as more than the giving of information. Communication strategies can develop personal skills and reinforce the effects of supportive environments. The United States policy also reviews scientific evidence on education. It points out that good parental knowledge encourages preschool children to make healthful food choices. Incorporating nutrition into school curricula can help develop behavioural skills for food selection and preparation. One concern about nutritional education is that it might lead to an increase in eating disorders such as anorexia nervosa. The USA and Australian policies have reviewed the research on this and conclude that
there is no evidence to support such a view. Nevertheless, Japan has set a target to reduce the proportion of underweight young women because it has witnessed an increase in the number of women with BMI less than 18.5 in the previous 20 years\textsuperscript{43}. The Danish National Board of Health, in 1998, launched a strategy to prevent and detect eating disorders. The strategy was aimed at parents, teachers, sports instructors and health care personnel\textsuperscript{18}.

**Settings**

A range of settings have been proposed for the implementation of strategies to tackle obesity. These include: population based strategies; community based strategies; the home/family based strategies; the workplace; schools; and health care settings.

**Population based strategies**

*Public awareness*

Many population-based educational strategies are proposed in policy. The US Surgeon General’s report highlights the need to raise awareness about the effects of overweight and obesity on health and the need to recognise inappropriate weight change\textsuperscript{16}. It also stresses the importance of prevention of overweight through balancing food intake with physical activity. Australia wants to raise people’s awareness and understanding of the benefits of daily or regular participation in moderate-intensity physical activity\textsuperscript{26}. Further, people should be aware of the importance of social and environmental influences on making appropriate diet and physical activity choices. New Zealand and the USA point out that consumers should be aware of reasonable food and beverage portion sizes\textsuperscript{16} \textsuperscript{33}. These strategies may be supported by multi-media campaigns. The Food Standards Agency in the UK contributes by providing access to information and advice on a range of food related issues, including the nutritional content of food\textsuperscript{54}. Policies on obesity stress the importance of implementing strategies that will not stigmatise people who are overweight or obese, or foster an environment that is likely to lead to the development of eating disorders\textsuperscript{33}.
Guidelines

The majority of countries have nutritional guidelines for different population groups. For example the publication of dietary goals for the United States in 1977 led to the issue of dietary guidelines for Americans in 1981\textsuperscript{31}. Revised guidelines are published every five years. Finland also issued national guidelines in 1981, and since then has issued catering guidelines for schools, hospitals, military personnel and worksites as well as dietary guidelines for children and athletes\textsuperscript{38}. Denmark reported in 1999, that only 10\% of the population followed nutritional guidelines\textsuperscript{18}. However, as part of its obesity strategy Denmark proposed to establish guidelines for schools, other educational establishments, health care professionals and social services. Australia highlights the need for specific guidelines for different age groups and has produced separate guidelines for infants, children and adults\textsuperscript{55}. The development and dissemination of educational packages based on these guidelines is encouraged. In the USA, to help individuals put nutritional guidelines into action a Food Guide Pyramid, a graphical educational tool, was published in 1992\textsuperscript{42}. Since then separate pyramids have been produced for children and for Spanish speakers and resources have been produced for nutrition educators. Some countries also have guidelines for physical activity. Where these are in place, policies recommend that action should be taken to disseminate them effectively. Others recommend the development and dissemination of new guidelines.

Inequalities in health

Healthy eating and access to physical activity are areas where socio-economic inequalities are apparent. Reducing inequalities in health is the overarching aim of the nutrition policy in Wales and opportunities to tackle them are identified throughout the policy\textsuperscript{51}. The recommendations include public education, skills training, supply of foodstuffs, training of professionals and working with the food industry. The New Zealand strategy \textit{Healthy Eating–Healthy Action}\textsuperscript{33} also focuses on inequalities in health. Government departments are asked to ensure that education and health promotion programmes are appropriate and readily available for the most at-risk groups. Such programmes should be appropriate for people for people in lower socioeconomic groups. Australia recognises that economically disadvantaged people spend a higher proportion
of their income on food and is committed to increasing the affordability of food. The new nutrition policy therefore proposes a range of actions to ensure that the most vulnerable people have access to adequate amounts of nutritious food. These include: reviewing existing services to identify training needs and resources; disseminating resources and models of effective initiatives for vulnerable people; and developing and disseminating guidelines for agencies that supply meals to vulnerable groups. Australia’s physical activity strategy insists that a component of the public education campaign should focus on indigenous groups and other high risk groups. Australia also recognises that people with disabilities are at high risk of leading sedentary lives. It therefore proposes to implement an information system to enhance participation in physical activity by people with disabilities. Northern Ireland acknowledges that low income groups eat less fruit and more processed meats, chips and roast potatoes. It also identifies barriers to healthier eating including cost, lack of basic cooking equipment, problems of access and a reluctance to try new foods. It calls for the elimination of food poverty by targeting efforts and resources on the needs of those who are most disadvantaged and by supporting community based programmes which improve access to healthy eating choices. Community based nutrition education initiatives and cooking skills programmes for low-income families have also been introduced in Northern Ireland.

Community based strategies
Several innovative community based interventions have been proposed in policy. Communities are encouraged to use school physical education facilities outside school hours, particularly in conjunction with physical activity clubs, in order to provide easily accessible, local facilities. The USA suggests the formation of community coalitions to support healthier living. This includes the development of increased opportunities to engage in leisure time physical activity and encouraging food outlets to increase availability of low-calorie, nutritious food items. Australia calls for the introduction of “good practice” standards and interventions, including training for child care workers, community care workers and teachers, and support for parents, grand parents and carers. Education of community leaders is encouraged so that they will support the
implementation of well-evaluated programmes that have a whole community and whole family approach to improving nutrition and physical activity. The formation of partnerships between the wider community and schools and other organisations to raise awareness and provide resources and information is also encouraged. Denmark stresses the importance of improving links between schools and community based activities so that students are encouraged to continue physically active pursuits after leaving school. Scotland proposes that the social services promote physical activity with their client groups, for example among older people and people with learning difficulties.

**Home/family**

The USA makes several suggestions on ways that families can take action to reduce the problems of overweight and obesity. It suggests that parents should be educated about the need to serve as good role models by practicing healthy eating habits and engaging in regular physical activity. This could empower families to manage weight and health through skill building in parenting, meal planning, and behavioural management. Denmark and the USA recommend that families should be encouraged to spend less time watching television and in similar sedentary activities. Australia suggests that this could be addressed by developing integrated programmes using multiple strategies with young people, parents and teachers. New Zealand suggests using interactive videos and programmes to get children and adults to become active when watching television and also suggests promoting physical activity around the home through activities such as gardening, washing cars and cleaning windows. Scotland identifies older people as a priority group and states that older people living independently should have self-help resources and support to ensure they can be physically active within their own homes. Scotland and Australia propose that people living in residential care should also be given opportunities to be physically active.

**Workplaces**

Workplaces provide opportunities for education and for implementing public health initiatives that can influence large numbers of people. Wales encourages employers to introduce policies that include healthy eating. Australia does this with the aim of
creating incentives for workers to achieve and maintain a healthy body weight. The US Surgeon General’s report recommends that employers should be educated on the direct and indirect costs of obesity. Thus they would be encouraged to take action to implement initiatives to reduce the potential problems. Other suggested actions include providing protected time for lunch, and ensuring that healthy food options are available. The USA supports the creation of work environments that promote and support breastfeeding.

Many policies identify physical activity strategies for the workplace. Sweden intends to ensure that the workplace provides a supportive environment for healthy physical activity and exercise. New Zealand’s physical activity toolkit identifies many opportunities to increase physical activity during the working day, such as changing workflow patterns, introducing flexible working hours, providing exercise and changing facilities, providing incentives to join local fitness centres and encouraging the use of stairs instead of lifts. Scotland proposes that employers should be given incentives to promote physical activity. Australia intends to incorporate recommendations on regular moderate physical activity in occupational health and safety policies.

**School based interventions**
Schools provide many opportunities to influence overweight and obesity. The majority of initiatives suggested in policy documents are not health promotion for the children, but are more concerned with educating teachers and bringing about environmental changes to foster healthier eating and increased physical activity.

**Staff education and training**
The Surgeon General’s report on preventing overweight and obesity makes many recommendations for the training of teachers and staff. It suggests that teachers, food service staff, coaches, nurses, and other school staff should be informed about the contribution of proper nutrition and physical activity to the maintenance of lifelong healthy weight. Staff are also encouraged to develop sensitivity to the problems encountered by the overweight child. Teachers, staff, students, and parents should be advised on the importance of body size acceptance and the dangers of unhealthy weight.
control practices. Teachers should be aware of their importance as role models for children in adopting healthy eating practices and in being physically active. Denmark plans to encourage schools, sports organisations and government departments to place more emphasis on participation and enjoyment and less on competition. Wales is considering making school approaches to healthy eating part of the school inspection framework. It also plans to review the extent of training on diet and health within teacher training courses, with a view to improving this if necessary.

School personnel influence children’s eating habits. Scotland’s nutrition policy highlights the role of School Boards in promoting healthy eating. Northern Ireland proposes a review of nutrition training for teachers at undergraduate and postgraduate level and suggests that School Nutrition Action Groups should be established. The new Australian nutrition strategy has as one of its priorities for action in schools, the need to identify best practice programmes and materials across a range of settings, issues and age groups, and to disseminate these programmes.

To increase physical activity, the UK countries provide training for schools sports coordinators to identify and integrate physical activity initiatives. England has a detailed strategy to increase physical education in schools. The aim is to increase the uptake of sporting opportunities by 5–16 year olds. The percentage of school children who spend a minimum of two hours each week on high quality physical education and school sport within and beyond the curriculum should increase from 25% in 2002 to 75% in 2006 and to all children by 2007. This will be delivered by through a range of programmes in addition to the role of the school sport coordinators. Sweden’s physical activity strategy highlights the role of staff and proposes that all staff at pre-schools and schools are made aware of the educational possibility of the outdoor environment, and children’s need for physical activity for health, development and learning.

Knowledge/guidelines
Schools should provide a range health education measures that help students to develop the knowledge, attitudes, skills, and behaviours so that they will adopt healthy eating
habits and a physically active lifestyle. Australia, who already has nutritional guidelines for school children, suggests the development and implementation of physical activity guidelines for children and adolescents\textsuperscript{21}. 

**Curriculum**

The majority of countries propose that more physical activity should be incorporated into the curriculum. For example, Wales and Scotland suggests that two hours of physical education and sport should be achieved by all pupils every week\textsuperscript{25,49}. The USA has set a target to ensure that children spend at least 50\% of the time designated for physical education being physically active\textsuperscript{42}. The Surgeon General’s Report advocates that all children from kindergarten upwards should have daily physical education\textsuperscript{16}. The Australian strategy for the prevention of overweight and obesity also calls for daily physical education in schools\textsuperscript{22}. Most countries propose that pre-school children should have daily sessions of supervised physical activity or active play times. Australia and Wales suggest that opportunities for physical activity in tertiary and further education campuses should be investigated\textsuperscript{26,49}. Denmark calls for an improvement in school physical education programmes for adolescent girls, a group that is typically resistant to taking part in physical activity\textsuperscript{18}. It also stresses the importance of improving links between schools and community based groups so that students continue to take part in physically active pursuits after leaving school\textsuperscript{20}. In addition to incentives to increase physical activity New Zealand suggests that cooking classes should be re-introduced in schools, while Australia wants to strengthen nutrition education in the curriculum. Northern Ireland also proposes a review of the home economics syllabus\textsuperscript{47}. Scotland intends to ensure a whole-school approach to food related education in schools and preschools, and began implementing a scheme called Hungry for Success in 2003\textsuperscript{56}.

**School environment**

Perhaps the greatest opportunities lie in changing the school environment. Australia recommends that schools focus on the development of good eating habits rather than on weight control\textsuperscript{22}. It also suggests that schools should be encouraged to introduce school policies and standards for school canteens, vending machines, fund raising, and
sponsorship. Meals offered to children should meet nutrition standards and should include options that are low in fat and sugars, such as fruits, vegetables, and whole grains\textsuperscript{22}. Northern Ireland has also proposed the introduction of compulsory nutritional standards for schools\textsuperscript{44}. Finland is unusual in providing free school lunches at comprehensive schools, upper secondary schools and vocational institutes\textsuperscript{38}.

Vending machines and tuck shops in schools are often a source of unhealthy foods and snacks. Several policies suggest that schools should be required to ensure that healthy snacks and foods are provided in vending machines, school stores, and other venues within the school’s control. The provision of free fruit in schools has been introduced in all UK countries\textsuperscript{57,58}. Wales has a system of school fruit tuck shops which run on a cost recovery basis\textsuperscript{51,59}. The USA suggests that students be prohibited access to vending machines, school stores, and other venues that compete with healthy school meals\textsuperscript{16}. It also advocates that students should be given an adequate amount of time to eat school meals. Wales is concerned that queuing for school meals is a disincentive for eating healthy meals in schools. It therefore proposes to investigate both uptake and effectiveness of a healthy take away meal as one initiative to tackle queuing\textsuperscript{51}. It is also planning to encourage the introduction of fresh water dispensers in all schools and to increase the uptake of school milk and free school milk.

Several countries want to increase physical activity by the promotion of walking and cycling to school\textsuperscript{25-27}. New Zealand also encourages the promotion and provision of extracurricular physical activity\textsuperscript{20}. Wales suggests that primary schools should paint playgrounds to encourage physical activity\textsuperscript{49}.

\textit{Nutrition Programs in the USA}

The USA has a range of federally assisted school based nutrition programmes, many of which are administered through the Department of Agriculture. These were initiated in 1946 with the launch of the National School Lunch Act\textsuperscript{60,61}. The National School Lunch Program was the first and was established to tackle food insecurity among disadvantaged children. In the fiscal year 2003, the Program covered over 28.4 million children in
100,000 institutions, at a cost $7.1 billion\textsuperscript{62}. Although the main purpose is to prevent hunger among disadvantaged children, the emphasis is on the provision of nutritionally balanced free or low cost meals to children. The meals provided therefore must meet a very detailed set of dietary guidelines\textsuperscript{63}. In addition to the School Lunch Program, the state provides: School Breakfast Programs; Afterschool Care Snacks Programs; Summer Food Service Programs; Special Milk Programs; Food Stamp Programs; and a Special Supplemental Nutrition Program for Women, Infants and Children\textsuperscript{61,64,65}. More recently the 2002 Farm Act provided $6 million from the US Department of Agriculture, to establish a Fruit and Vegetable Pilot Program to provide free fruit and vegetables to 107 elementary and secondary schools\textsuperscript{66}.

**Health care sector**

The health care setting also provides opportunities to tackle obesity. Current policy suggests action in three areas:

**Training for health professionals**

Training for health professionals includes both prevention and management of obesity. The US Surgeon General’s report recommends that health care providers and administrators be made aware of the extent of the burden of overweight and obesity on the health care system in terms of mortality, morbidity, and cost\textsuperscript{16}. It goes on to state that they should be aware of the barriers for patients including lack of access to effective nutrition and physical activity interventions and that training should be available in effective prevention and treatment techniques. New Zealand proposes to investigate the potential of including physical activity and nutrition as areas of learning for health professionals\textsuperscript{33}. It also supports increased training in obesity for GPs, nurses and other health professionals to be undertaken by nutritionists and dietitians\textsuperscript{20}. Australia and the USA want to promote the use of dietary guidelines on the prevention, treatment and management of obesity to all health care professionals\textsuperscript{16,22}. New Zealand recommends that health professionals, including GPs, practice nurses and rest home staff should be trained in prescribing physical activity, the so called green prescriptions\textsuperscript{33}. England has introduced guidance for health professionals on exercise referral. The National Quality Assurance Framework (QAF) for GP exercise referral\textsuperscript{67} provides guidelines for exercise
referral systems, with the aim of improving standards among existing exercise referral schemes, and helping the development of new ones. The Framework focuses primarily on the most common model of exercise referral system, where the GP or practice nurse refers patients to facilities such as leisure centres or gyms for supervised exercise programmes. Wales proposes to review the QAF for exercise referral to decide on its appropriateness for Wales.

**Actions in health care sector**

There is a need to increase collaboration of those working in prevention and treatment within health care settings. The USA encourages partnerships between health care providers, schools, and other community organisations in prevention efforts targeted at social and environmental causes of overweight and obesity. New Zealand suggests that appropriate health professionals should be involved in the delivery of the Health and Physical Education Curriculum in schools. It also wants to integrate physical activity advice and programmes into clinical services related to at-risk groups, particularly those with cardiovascular disease, diabetes, and for those who are overweight or obese.

Australia and the USA advocate increased promotion and dissemination of dietary guidelines by health professionals. Australia suggests that dietary and physical activity guidelines should be available to primary care staff for use in prevention and treatment of people who are overweight or obese. Good practice programmes for healthy eating (including breastfeeding) should be included in antenatal care, postnatal care and at different stages of children’s development. Finally, the USA wishes to establish a dialogue to consider classifying obesity as a disease category for reimbursement coding.

**Management of obesity**

The New Zealand Toolkit on obesity provides a list of actions that may be taken in primary care to tackle obesity. These include:

- Advice on weight control, diet and physical activity
- Advice on how to modify diet and lifestyle in order to build in physical activity
- Provision of specialised diets and diet plans
- Referral to exercise programmes (green prescription)
- Ongoing support
- Promoting healthy eating and physical activity through general information

Australia suggests that the number of health sector led community based support programmes for the management of overweight and obesity, that are culturally appropriate should be increased. It also advocates that Lifestyle Scripts for young people and parents should be developed and implemented\textsuperscript{21}.

The interventions described above are not necessarily being implemented through current policy. Many are suggestions that could be introduced. Unfortunately the mechanisms through which these can be implemented are not described in the documents, nor are plans for evaluation.
Evaluation

Evaluation of trends in obesity

All countries report an increasing prevalence in overweight and obesity in recent years. The USA has a sophisticated system for monitoring progress towards its obesity, nutrition and physical activity targets. From the late 1970s to 1999 the prevalence of obesity among adults in the USA increased from 15% to 27%\(^\text{16}\). Over the same period among adolescents it increased from 5% to 14%. However, the *Healthy People 2000 Final Review*\(^\text{69}\) reported modest reductions in the amount of saturated fat consumed and an increased consumption of fruit and vegetables. Further, increases were reported in the frequency of light to moderate physical activity and vigorous physical activity as well as stretching exercises. Only the levels of daily physical education in schools had fallen. It is surprising that the nutritional and activity indicators are moving in the desired direction at the same time that the prevalence of obesity is increasing.

Japan reports that the proportion of the population with a BMI greater than 25 (Japan’s measure of obesity), increased from 16% to 24% among men over the 20 year period to 1997\(^\text{43}\). New Zealand reports that from 1989 to 1997 the prevalence of obesity increased by 55% and that currently 15% of men and 19% of women are obese\(^\text{23}\). In Denmark the prevalence of obesity increased from 6% in 1987 to 8.5% in 1994\(^\text{18}\). England, in 1992, set a target in *Health of the Nation*\(^\text{70}\) to reduce the prevalence of obesity among men from 8% to 6% by 2005 and among women from 12% to 8%. However, a House of Commons Select Committee report found that by 2002, 22% of men and 23% of women were obese\(^\text{8}\).

Proposals for evaluation in current policy

The USA and Japan have mechanisms in place to monitor progress towards all of their targets. Both countries have many targets for monitoring changes in obesity and overweight, nutrition and physical activity. Many countries give a commitment to evaluation of the impact of their policies but do not give details. For example, Sweden
proposes to monitor progress to increase physical activity and good eating habits every fourth year\textsuperscript{29}, whereas Denmark proposes monitoring at intervals of one to three years\textsuperscript{18}. Ireland is also committed to systematic evaluation but recognises the difficulties of doing so\textsuperscript{71}. The Scottish nutrition strategy\textsuperscript{46} reports that progress on targets will be consistently monitored through the Scottish Health Survey which is conducted at three yearly intervals. Australia’s nutrition strategy\textsuperscript{52} also proposes triennial reviews culminating in a major evaluation in 2010.

Northern Ireland, in its food and nutrition strategy\textsuperscript{47}, recommends that a group representing the main interest groups, for example, the Health Promotion Agency, food producers and retailers, as well as government departments, should be established. Part of the remit of this group would be to evaluate as well as to monitor and coordinate activities. Scotland in its physical activity strategy, makes research and evaluation one of its four strategic objectives, recognising that a monitoring system should cover all of the agencies involved\textsuperscript{25}. It also proposes to provide evaluation guides and templates for use by local groups and communities.

Some countries recognise that evaluation should involve more than just progress towards the achievement of specific targets. For example Denmark points out that their strategy for evaluation is partly to assess the outcome of the programme and partly to improve the initiatives being implemented if necessary\textsuperscript{18}. It also recognises that special research studies will be required to measure the extent to which any changes can be attributed to policy interventions rather than other secular changes. The Australian physical activity strategy reports that the educational strategy to promote moderate-intensity exercise will be subject to rigorous evaluation and careful review at each phase of implementation\textsuperscript{26}. Scotland recognises that many initiatives fail because the do not adequately monitor progress towards the achievement of goals and proposes to remedy this\textsuperscript{25}. In its physical activity strategy Sweden proposes to use process measures initially to determine interventions are being successfully implemented and maintained\textsuperscript{24}. The outcomes of these interventions would be measured in the longer term.
Australia provides the most detailed description of how the evaluation of strategies to prevent and reduce obesity may be achieved in *Acting on Australia’s Weight*\(^2\). Monitoring strategies for overweight and obesity, physical activity and dietary intake will be used. The three strategies are:

- monitor changes in weight and waist measurements of the Australian population using standardised methods
- monitor physical activity patterns by using ongoing surveys and using standardised methods of measuring activity
- monitor dietary intake (with a particular focus on fat-energy intake) and diet related community weight control practices

Some of the required data will be available from routine data collection sources. However, some new measures are also required. These will be developed through research. Part of the remit for research therefore is to develop standard methods for measuring overweight and obesity and to develop standards for measuring and defining activity. Proposals are in place to collect height, weight and waist measurements and self-reported physical activity data in five-yearly population surveys. This will be supplemented by self-reported data in more frequent population surveys. Prior to the publication of the strategy, Australia did not routinely collect data to monitor food intake. It therefore planned to implement a program of standardised data collection of food intake with periodic over-sampling of priority groups, in order to obtain the necessary data on food consumption. The strategy recommends that anthropometric measurements, data on physical activity and dietary intake be collected on the same individuals, so that the associations between the three factors can be taken into account, thereby increasing the value of the data for monitoring purposes. These measures will ensure that trends in obesity can be monitored.
Summary

All countries are concerned at the rapid increase in the prevalence of obesity. They also recognise the many serious diseases associated with obesity and the costs that result to health care systems and through lost productivity. A recent estimate from England put the annual cost to the country at over £3 billion\(^8\). A 1995 estimate from the USA was $99 billion\(^{42}\). Obesity reduces life expectancy by approximately nine years. The health threat from obesity could reverse recent reductions in mortality from coronary heart disease\(^8\).

Overweight and obesity is thought to result from the combination of the over-consumption of foodstuffs and inadequate levels of physical activity. Dietary change is attributed to the increased availability of convenient and palatable energy dense foods, combined with a reduction in the time spent on cooking and a loss of cooking skills. Increased sedentary behaviour is thought to have resulted from the changing nature of employment with an increase in the number of sedentary jobs, the development of a transport system that militates against activity and an increase in the number of sedentary leisure activities.

Despite the high levels of concern few countries have obesity strategies. However all countries have policies on physical activity and most have separate nutrition policies. Although both physical inactivity and poor nutrition contribute to obesity, each is independently involved in the causation of other diseases. Thus the health benefits of increased activity and better nutrition are much wider than reducing obesity. The challenge is to coordinate these policies to ensure that all at risk groups within society benefit from interventions on both topics.

Only four countries (USA, Japan, Northern Ireland and England) have set targets for the reduction of the prevalence of obesity. However most countries specify desired reductions in fat consumption, and desired increases in the consumption of fruit and vegetables. All countries specify the amount of regular exercise which adults should perform and most indicate the amounts for children. Only Japan sets targets for physical
activity among older people, although most countries identify the elderly as a special interest group.

There is widespread recognition that changes in the physical and social environment will be required to change nutritional patterns and increase physical activity levels. Although interventions aimed at individuals will be necessary these are of secondary importance compared to environmental change. Many specific settings for interventions are identified including schools, the workplace, communities and health care settings. Most countries identify high risk groups particularly children and socially disadvantaged groups.

All countries stress the importance of intersectoral working, and a range of government departments, local authorities, private and voluntary sector groups are identified. The processes by which intersectoral working will be achieved is not well documented.

Action at government level action is widely seen as essential and all countries specify similar broad areas in which action should be taken. Policy on obesity and physical activity is acknowledged to be at an early stage of development. Policy documents are concerned with the education of policy makers and with the need to develop strategies to tackle current problems. Often a list of possible activities is identified, but there is no indication of whether these will be undertaken. Current policy is thus concerned with exploring options, rather than providing a comprehensive set of interventions to improve health.

The most common specific proposal is to increase opportunities for increased cycling and walking, by providing safe and attractive cycle routes and walkways. Interventions in schools are also prominent. These include the introduction of school policies and standards for school meals, vending machines and take-away foods. The amount of time within the school curriculum for physical activity is to be increased. This can be supported by providing protected time for teachers to become school sports coordinators.
The worksite is the other setting in which a coordinated programme of nutritional and physical activities can be implemented. One strategy is to increase employers’ awareness of the benefits of a healthy workforce. In addition to increasing opportunities for active recreation employers can ensure that workplace canteens supply low-calorie, nutritious food items.

Many interventions at a community level are proposed. One specific intervention is to make school physical activity facilities available out of hours. Other interventions include mass education campaigns, the education of community leaders and the creation of partnerships within communities. It is not clear how this will be achieved, nor is it evident how such actions will lead to the desired changes in the physical and social environment.

The role of the food industry is acknowledged to be vital. Most countries propose to ask the food manufacturers to cooperate by producing healthier foods, for example by reducing the fat content of prepared meals. Food service outlets such as restaurants and takeaways will also be asked to contribute for example by providing an increased of choice low energy foods and by keeping portion sizes moderate. Improved nutrition labelling is also proposed, particularly in a form which is easily understood. The mechanisms by which these changes will take place are not described, and there is no mention of devices such as voluntary codes of conduct.

Fiscal and legislative interventions, which are recommended by the World Health Organisation\textsuperscript{30} and in scientific articles, are almost completely absent from policy documents. The introduction of fiscal measures is strongly recommended in scientific papers\textsuperscript{12-14} and Sweden notes that the European Common Agricultural Policy subsidises unhealthy foods, such as full fat milk, while disadvantaging fruit and vegetables\textsuperscript{72}. There is also little mention of funding for the range of proposed interventions. Further research to develop effective interventions is recommended, as is the evaluation of the impact of current policies. However specific proposals for these actions are seldom given in policy documents.
**Conclusion**

Obesity is a major public health problem which is currently getting worse. The medical and financial costs of obesity are widely recognised. The policies also recognise that tackling obesity will require fundamental changes in the physical and social environment. Interventions in schools and the workplace are the most well-developed. Many countries also have active transport strategies to increase cycling and walking. Those countries with obesity polices highlight the need to tackle the problem among socially disadvantaged people. However policies are often written in general terms with few specific proposals for tackling obesity. Much of policy makes recommendations for further policy development. Frequently policy documents identify sets of action which could be pursued without making commitment to carrying them out. The problem posed by obesity completely overshadows the efforts being made to tackle it.

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