

Background material to
THE ACTION PLAN
for **HEALTHY DIETARY HABITS**
and **INCREASED PHYSICAL**
ACTIVITY

Contents

Forword

| | | |
|----------|--|-----|
| 1 | Summary | 5 |
| 2 | Assignment and methodology | 21 |
| 3 | Background and problem description | 23 |
| | Public health problems related to unhealthy dietary habits and physical inactivity | 23 |
| | Dietary habits and physical activity in different population groups | 29 |
| | Physical activity | 31 |
| | Inequalities in health | 32 |
| | Societal changes impacting dietary habits, physical activity and body weight | 33 |
| | International action plans for healthy dietary habits, increased physical activity and the prevention of overweight and obesity | 37 |
| | Lessons from the current Swedish strategy for nutrition | 39 |
| | Efforts regarding dietary habits and physical activity on the regional and local level | 40 |
| | Perspectives to be considered in the assignment | 41 |
| | Health economics and obesity | 42 |
| 4 | Objectives and targets | 51 |
| | Objectives for societal measures regarding healthy dietary habits and increased physical activity..... | 51 |
| | Targets for healthy dietary habits | 51 |
| | Targets for physical activity..... | 53 |
| | Targets for body weight | 55 |
| 5 | Strategies to achieve the objectives | 59 |
| | The WHO's Global Strategy on Diet, Physical Activity and Health | 59 |
| | A model for public health work | 59 |
| | Strategy for achieving healthy dietary habits and increased physical activity..... | 60 |
| 6 | Measures and motivations | 63 |
| | Working life policy | 64 |
| | Housing policy | 68 |
| | Public health policy | 76 |
| | Research policy | 86 |
| | Health care policy | 90 |
| | Sports policy | 107 |
| | Consumer policy | 117 |
| | Food policy | 128 |
| | Environmental policy | 143 |
| | Tax policy | 150 |
| | Transport policy | 156 |
| | Education policy..... | 164 |
| | Policy for the elderly..... | 179 |

2 Assignment and methodology

The overarching aim of Swedish public health policy is to create societal conditions that will ensure good health on equal terms for the entire population. This also includes creating conditions for healthy dietary habits and sufficient levels of physical activity as these factors are fundamental to good health. The Swedish Government intends to put forward an action plan for healthy dietary habits and increased physical activity. To help design the action plan, the Swedish Government commissioned the National Food Administration and the National Institute of Public Health in November 2003 to jointly develop the basis for such a plan. The purpose of a national action plan is to help fulfil the overarching public health aim by implementing measures that improve the conditions for healthy dietary habits and increased physical activity in the population.

The basis of the action plan should contain proposals for:

- Targets, including a target for societal measures regarding healthy dietary habits.
- Strategies for achieving these targets.
- Measures aimed at the local, regional and national level, having proved effects to encourage healthy dietary habits and increased physical activity in the population. Innovative measures that have yet to indicated any effect may also be included in the proposals, however.
- Financing and cost estimates for the proposed measures.
- Responsible actor for implementation of each measure.

The living conditions of children and young people should be taken into account as well as how health messages can be disseminated without promoting unhealthy slenderness ideals and excessive dieting. Inequalities in living conditions should constantly be taken into account: between women and men, girls and boys, between socio-economic groups and individuals with differing ethnic and cultural backgrounds. Implementation of the action plan should contribute to the Government's sustainable development efforts.

According to the assignment remit, the National Food Administration and the National Institute of Public Health should consult a number of actors including government agencies, researchers, representatives of municipalities and county councils, clubs and associations and the food industry.

The work began with the collection of as many ideas and experiences as possible from people and organisations with experience and expertise in the field. An inventory of scientific literature and of different types of reports, enquiries and action plans in other countries was also carried out. More light was then shed on certain aspects through seminars and roundtable discussion with experts as well as via various other enquiries. Reports and abstracts have been regularly posted on the websites of the two agencies throughout the course of the year. Status reports on the drafting of the basis have been presented by the project group at a number of conferences and seminars. Finally, concrete proposals for measures were circulated to various actors for comments.

Foreword

On 6 November 2003, the Swedish Government commissioned the National Food Administration and the National Institute of Public Health to develop the basis for an action plan to promote healthy dietary habits and increased physical activity in the Swedish population.

The two agencies each appointed a steering group, under the chairmanship of the directors-general, and a project group. Inger Andersson (chair) and Jerker Sörenson constituted the National Food Administration's steering group and the National Institute of Public Health's steering group comprised Gunnar Ågren (chair), Pia Milton and Bosse Pettersson. The project leaders were Annica Sohlström from the National Food Administration and Liselotte Schäfer Elinder from the National Institute of Public Health.

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Elisabet Aldenberg, Mats Bjurvald, Jonas Frykman, Anita Linell and Sara Sjölund from the National Institute of Public Health have all contributed texts. Ulf Gertham from Lund University and Matti Leijon from the County Council of Östergötland have also provided valuable input. Furthermore, several experts from within the two agencies have contributed useful advice and comments.

Background material regarding certain factual matters has been submitted by Per Haglind, Martin Jansson, Magnus Ljung, Ylva Mattsson Sydner, Maria Rosén and Inga Swanberg. Merethe Andersen has been responsible for layout and editing.

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Uppsala and Stockholm, February 2005

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1 Summary

Assignment and methodology

The Swedish Government intends to put forward an action plan for healthy dietary habits and increased physical activity. The aim of such an action plan is to introduce measures to improve the prerequisites for healthy dietary habits and physical activity in order to contribute to the overall public health aim: To create societal conditions which ensure good health, on equal terms, for the entire population.

The Swedish National Food Administration and the Swedish National Institute of Public Health were commissioned to draw up background material for an action plan containing proposals for measurable targets (including a target for societal measures regarding healthy dietary habits), strategies for achieving such targets, measures to be implemented by the relevant actors, funding and cost estimates of the proposed measures. Particular attention had to be paid to the living conditions of children and young people. Gender, socio-economic status and ethnicity were also to be considered. The background material will help the Government in its quest towards sustainable development.

During the course of the project, the ideas and experiences of representatives of municipalities, county councils, schools, the food industry, the media, central agencies, universities, NGOs and international experts were considered. This was achieved through hearings, round-table discussions and seminars. In addition, some evaluations and reviews on relevant topics were carried out. Current scientific evidence was obtained from literature, reports, investigations and action plans in other countries. Progress reports on the drafting of the background material have been presented by the project group at a number of conferences and seminars. Reports have also been regularly posted on the websites of both agencies. Concrete measures have been finalised after consultation with a number of key stakeholders. The costs of proposed government measures actions have been calculated, but it has not been possible to give detailed estimates due to a lack of time.

Background and problem description

Public health issues related to dietary habits and physical inactivity

Dietary habits and physical inactivity contribute to mortality and several common non-communicable diseases. WHO estimates that 80 per cent of cardiovascular disease, 90 per cent of type 2 diabetes and 30 per cent of all cancers could be prevented by a healthy diet, adequate amounts of physical activity and by people not smoking. Too high an energy intake and physical inactivity are also the direct causes of the increasing prevalence of overweight and obesity.

In Sweden, the proportion of obese adults has doubled since 1980, while the prevalence of overweight men and women has increased by 20 and 30 per cent respectively during the same period. Today, over half of all Swedish men and a third of women are overweight or obese. Eleven per cent of men are obese, while the corresponding figure for women is 9 per cent. In Sweden, there is currently no national representative or all-inclusive data on children's weight and height. Various studies show that 15 to 20 per cent of children are overweight, and 1 to 5 per cent of these are obese. The results of various studies indicate that the prevalence of overweight and obesity among children has increased between two- and five-fold since the mid-1980s, mirroring the international trend. Obesity in children and adults gives rise to great human suffering.

Obesity and related diseases are among the most unevenly distributed health conditions and the trend is towards an increase in social differences. There is also a social difference as regards cardiovascular diseases. Mortality is 1.5 times higher among the working class and poorly educated compared with the rest of the population.

Dietary habits and physical activity

Swedes are unlikely to suffer from vitamin, mineral or protein deficiency, but 90 per cent of the adult population eats less than the recommended amount of fibre. The increased prevalence of overweight shows that total food consumption is higher than the requirement. Eighty per cent of the population eat too much fat, 96 per cent eat too much saturated fat and half eat too much sugar. Studies on children show similar figures. Young, poorly educated men generally eat a less healthy diet than other groups. Children whose parents have only a short education have a worse diet, and are often more overweight, than those whose parents have a longer education.

Around half of all adults exercise less than the recommended amount and 14 per cent of the population lead a more or less sedentary lifestyle in their spare time. Among 15-year-olds, 36 per cent of the girls and 22 per cent of the boys do not take the recommended amount of exercise. A sedentary lifestyle is more common for the lower educated, those with an immigrant background and among low-income groups.

Societal changes impacting dietary habits and physical activity

Technological changes and an increasing global food production in combination with economic growth have had a positive effect on health, but these factors have also contributed to reduced physical activity levels and altered dietary habits.

The growth of motoring, the invasion of TV and computers and an evermore automatised workplace in recent decades have led to a decrease in human energy expenditure. Even though the effects of each single technological innovation may be small, together they contribute to a considerably lower energy requirement. Compared with earlier times, physical activity is now performed to a higher degree in leisure time than at work. The increasing interest in exercise during the past decade has not compensated for the decrease in physical activity at work and active transport (walking or cycling).

A sedentary lifestyle is a strong contributory factor in the development of overweight and obesity. In today's society, therefore, individuals must avail of every opportunity for physical activity, e.g. by using the stairs instead of the lift and walking or cycling instead of taking the bus or car. This requires an active and conscious action on the part of the individual. However, it also requires conscious action on the part of society to create an environment that promotes and facilitates everyday physical activity in all population groups.

In the EU, average energy availability from food is around 3,500 kcal per day, while the requirement is on average just over 2,000 kcal per day. According to the Food and Agriculture Organization (FAO), energy availability from food is expected to continue to increase in the next 25 years. Historically, food prices relative to income have never been as low as they are today. This has been achieved through higher productivity in agriculture and has naturally provided the basis for people to improve their diet. However, increased access to food in combination with decreasing prices and increasing consumer income has also led to an over-consumption of food. The measurable increase in energy intake in Sweden has been around 100 kcal per day over a period of 8 years. This may seem little, but an extra daily intake of this size for one year corresponds to the energy contained in 4-5 kg of adipose tissue.

For the individual consumer, these changes mean that food is now more available throughout society. Portion or package sizes of e.g. fast food, soft drinks, sweets, ice cream, crisps, cakes and biscuits have also grown. Marketing of food, especially of the products mentioned, has increased in scope and sophistication (e.g. by exploiting lifestyle, group affinity and emotions), in turn contributing to increased consumption.

Foods that have been particularly implicated as contributory factors to obesity include energy-dense and low-nutrient items, soft drinks and probably even alcohol.

Today's society requires a very active and knowledgeable consumer who can resist the constant temptation to eat and drink. Apart from better information and awareness by consumers, action is needed on the part of society to reduce the availability and demand for soft drinks, sweets, ice cream, crisps, cakes and biscuits and to increase those for healthy foods.

There is no scientific evidence to show that measures to reduce obesity lead to an increased prevalence of eating disorders in the population. However, uncontrolled dieting by children and young people may lead to eating disorders. Prevention of obesity among children and young people and qualified treatment of obesity should therefore lead to a decreased incidence of eating disorders in the long term.

A review of health promotion activities at the municipal level in Sweden showed that 26 out of a total of 290 municipalities had an action plan for physical activity and only 13 had one for healthy dietary habits. This highlights the great need for the development of community-based measures to promote healthy dietary habits and increased physical activity.

Lessons from the current Swedish strategy for nutrition

An action plan for nutrition was adopted by the Swedish Government in 1995. A strategy was then devised at the central agency level including concrete measures to achieve the targets established as part of the action plan. The document is entitled 'Swedish National Aims and Strategies for Nutrition, 1999-2004'. An evaluation of this document showed that despite being considered useful, it has not fulfilled its intended function. A number of concrete suggestions were given for how a proposed action plan could be successfully implemented:

- The action plan should originate from the government and/or parliament.
- Health promotion concerning healthy dietary habits and increased physical activity should be institutionalised at the local and regional level in order to ensure coordination and continuity.
- All those affected by the action plan should have a participatory role.
- An action plan should not be designed as a wish list. It must also be possible to put the plan into practice. It is insufficient to merely suggest what is to be achieved, e.g. healthy school meals, there must also be a description of how this can be achieved.
- Adequate resources should be guaranteed for advocacy, development and implementation. The implementation of an action plan requires continuity, structure, farsightedness and resources.
- Methods should be created for monitoring and evaluation during the implementation phase. Quantifiable targets should be continually evaluated.

Health economics and obesity

The direct costs of obesity and obesity-related diseases in Sweden are currently around 2 per cent of the total healthcare budget, i.e. approximately SEK 3 billion (EUR 332 million) per year. The indirect costs of sick leave and early retirement caused by obesity are not known, but they are probably several times that amount. If the prevalence of obesity continues to increase at the same rate as in the 1990s, it is estimated that 60 per cent of Swedes will be overweight or obese by 2030, which would mean that the costs of obesity to the Swedish health care system would increase by 120 per cent between 2003 and 2030. Such development would be unsustainable in both health and economic terms.

To identify the most cost-effective measures for society, we must invest in cost effectiveness analyses. Such analyses investigate the relationship between the possible health effects of a certain measure and the costs of implementing that measure. However, the knowledge base for carrying out such analyses is currently inadequate, which means caution must be exercised in choosing among available options. Central government, county councils and municipalities can probably save costs in both the short and long term by promoting healthy dietary habits and increased physical activity in the population and thus decreasing the incidence of overweight and obesity and other lifestyle-related diseases.

Objectives and targets

Objectives and targets for societal measures regarding healthy dietary habits and increased physical activity

1. Society should be organised in such a way as to make it easy for all groups in the population to have healthy dietary habits.
2. Society should be organised in such a way as to provide the conditions for increased physical activity for all groups in the population.

Targets for healthy dietary habits

1. Increase consumption of fruit and vegetables.
2. Increase consumption of keyhole-labelled food.
3. Reduce consumption of foods such as soft drinks, sweets, crisps, cakes, biscuits, ice cream and alcoholic drinks.

The Nordic Nutrition Recommendations are published by the Nordic Council of Ministers after consultation with Nordic researchers and representatives of national authorities. The recommendations are based on evaluation of the scientific literature available at the time of each revision. Dietary advice is drawn up based on the nutrition recommendations. In other words, the nutrition recommendations are ‘converted’ into food. A comparison of a diet fulfilling all the nutrition recommendations for the average Swedish diet shows that the most significant changes in diet from a public health perspective would be:

- Doubled consumption of fruit and vegetables (recommended consumption is at least 500 grams per day for adults and approximately 400 grams per day for children 4-10 years).
- Doubled consumption of bread, particularly wholegrain bread (recommended consumption is 150–200 grams of bread per day).
- Change to liquid cooking fats and oils.
- Choose keyhole-labelled dairy and processed meat products.
- Doubled consumption of fish (recommended consumption is 2–3 times per week).
- Halved intake of salt (recommended intake is 5–6 grams per day).
- Halved consumption of soft drinks, sweets, ice cream, crisps, cakes, biscuits and alcoholic drinks (max. 15 per cent of energy intake should come from such products, including alcohol, which should not exceed 5 per cent of energy intake).

Targets for physical activity

1. Increase the proportion of healthy adults who take at least 30 minutes of moderate physical activity every day, or a total of least 3.5 hours per week.
2. Increase the proportion of healthy children who are physically active for at least 60 minutes of moderate exercise every day, or a total of least 7 hours per week.
3. Decrease the proportion of children and adults with a sedentary lifestyle.

The current recommendation for at least 30 minutes of moderately intensive physical activity daily (for example brisk walks) is primarily based on its impact on cardio vascular health. This recommendation has a strong, scientific connection with functional effects such as a reduction in blood pressure and blood sugar levels and improved heart function. The recommended level of activity facilitates weight control, especially in people with a relatively sedentary lifestyle. However, with increasing energy intake in the population, as is the case today, 45-60 minutes per day of at least moderate exercise are required to maintain a stable body weight. People who have been overweight or obese, but who have lost weight, require 60-90 minutes of at least moderate physical activity per day to maintain their current weight. The public health effects are particularly significant if the elderly and people with a sedentary lifestyle can be stimulated to become physically active.

Physical activity in children contributes to physical development, maintenance of energy balance, well-being, bone strength and mobility. At the same time, physical activity is important for play and recreation, in learning motor and social skills and in the development of creativity. It is recommended that children are physically active 60 minutes per day at a moderately intensive level, of which two sessions per week should contain activities that develop skeletal strength, endurance and mobility.

Targets for body weight

1. Prevent weight gain from normal to overweight in adults.
2. Promote normal weight gain in children.

Health promotion and disease prevention aims to ensure that fewer people become overweight, especially children. For children who are still growing, and gain weight for that reason, the main aim is to ensure that their weight does not deviate from established weight curves. Overweight children do not need to achieve weight loss. Their BMI can be normalised if they maintain a fixed weight while still growing in height.

There are already objectives and aims formulated within each policy area some of which lend excellent support to the promotion of healthy dietary habits and physical activity

Strategy for achieving the targets

Changes in society have had a considerable effect on dietary habits and physical activity. To improve people's dietary habits and increase their physical activity, changes must first be directed at the societal level, where the prerequisites for healthy dietary habits and physical activity are created, so that it becomes easy to lead healthy lifestyles. It is particularly important to influence the supply, availability and/or demand for food and physical activity in combination with consistent messages about healthy dietary habits and physical activity. Experience shows that people more often make healthy choices if the surrounding environment is supportive. On the basis of the Swedish public health policy, the WHO global strategy and current research in public

health, the strategy for achieving the targets set for healthy dietary habits, physical activity and body weight is as follows:

- Measures must be directed at both the societal and individual level.
- Measures must be long-term.
- Resources must be made available for implementation.
- Measures must be implemented and coordinated at the national, regional and local level.
- Measures must build on partnerships between the public, private and nonprofit sectors.
- Measures at the national level are incorporated into those government policy areas which have the greatest influence on people's dietary habits and physical activity.
- Interventions must take local conditions into consideration and be based on public participation.
- Evaluation and monitoring must be continuously integrated into the process.

Proposals for measures to improve the prerequisites for healthy dietary habits and increased physical activity

A systematic review carried out by the Swedish Council on Technology Assessment in Health Care (SBU) in 2004 revealed that it is possible to prevent obesity in children and young people through limited school-based programmes stimulating children to improve their dietary habits often in combination with more physical activity. However, the effects are rather weak and difficult to measure without simultaneous interventions being carried out in the home environment, leisure time and society as a whole. There is a lack of published studies on broad multisectoral interventions of the type recommended here.

The evidence for prevention of obesity in healthy adults is somewhat weaker than for children, although intervention studies concerning patients with several risk factors for cardiovascular disease have successfully identified weight loss. The conclusion is that it is difficult to achieve lifestyle changes in healthy adults without considerable societal changes. Large sections of the population cannot be reached using health education alone.

The background material for the action plan contains a total of 79 different proposals for measures. An actor is allocated specific responsibility for each measure. Frequently it is specified that an action be introduced in collaboration or consultation with other specified actors. The costs to central government actors are specified when the proposed measure requires state funding in excess of the ordinary budget of the agency in question. The costs to municipalities and county councils are not specified. However, implementation of a number of the proposed measures will require additional funding.

The measures are listed by policy area in accordance with the Swedish governmental administrative system. The policy areas described are felt to be highly important

in influencing social conditions for healthy dietary habits and physical activity. Measures to be performed by actors other than national agencies have been listed under the most appropriate policy area.

Of the 79 proposed measures, 50 are to be carried out by the government or central agency, 14 by municipalities, 7 by county councils, 4 by NGOs, 2 by universities/university colleges and 2 by county administrative boards. Eleven different central agencies are given as lead actors.

The proposed measures are mainly based on evidence in the scientific literature and/or experience described in various types of reports. Many are in line with what is proposed in other countries' action plans for healthy dietary habits and increased physical activity. A particular characteristic of the Swedish background material is that measures are proposed within such a large number of policy areas, marking a new and broader approach. This is in line with the Swedish public health policy and underlines the need for health impact assessments within policy areas not previously considered as having an impact on public health. In addition, there are proposals for government enquiries into the possible taxation of unhealthy foods and subsidies to healthy foods. It is also proposed that diet and health issues be included in national food inspection and enforcement activities.

Measures that promote the creation of supportive environments for healthy dietary habits and increased physical activity for children and young people should be given priority in the first phase, along with research into these issues. To implement the action plan, measures regarding its coordination and monitoring must also be prioritised. The measures affect many sectors in society and there are synergy effects to be gained from measures being implemented within the different policy areas.

How the local environment is designed is crucial to people's ability and desire to engage in physical activity. The supply of food available locally can affect food habits. Within this area, there are measures relating to active transport, housing environments, outdoor recreation, sports, activities for the elderly and food supplied in publicly-funded premises.

Schools and pre-schools reach all children. Health education concerns food, physical activity and health. The school environment is also very important for a health-promoting lifestyle. Proposed actions involve amendments to school legislation, reinforcement of health education concerning food and physical activity, school meals, the physical and social school environment, leisure activities at school and school healthcare.

The health and medical service reaches a very large proportion of the population via its maternal healthcare, child healthcare and dental care activities, often in a life situation where the individual is strongly motivated to live a healthier life. This provides the potential for methods such as motivational interviewing and preventive programmes, which can be very significant for socio-economically disadvantaged groups. Within this sector, there are also measures regarding the supply of foods available within the health and medical service.

Professional training and communication: A prerequisite for schools and the health and medical service to be able to exploit their health-promoting potential as regards food and physical activity is that the staff is well trained and that training is given priority by decision-makers. It is therefore proposed that courses on food and physical activity be included in secondary school and university/college programmes leading to a profession in healthcare and teaching, in addition to comprehensive training of these professional groups. A strategy for health communication concerning healthy dietary habits and increased physical activity to the public must be developed.

The workplace reaches the greatest proportion of the adult population and has good potential to promote healthy dietary habits and physical activity during the working day. Proposed actions include certification of health-promoting workplaces and guidelines for food available in the workplace.

The food industry through its supply management, pricing, and marketing strategies represents both part of the problem and part of the solution for better dietary habits. The proposed measures concern agricultural policy, marketing, food labelling, food inspection and enforcement and public inquiries on taxes and meal subsidies.

All the proposed measures are summarised in the table on the following pages.

Proposed measures of the action plan for healthy dietary habits and increased physical activity

| Measure no. | Description of measure | Lead actor | Cost to government | Policy area | Domain |
|-------------|--|--|--------------------|---------------|-------------------------------|
| 1 | Criteria should be developed for the certification of health-promoting workplaces including policies for food and physical activity. | National Institute for Working Life and Swedish Work Environment Authority | | Working life | Workplace |
| 2 | Proposals should be developed for how knowledge and skills on food and physical activity can be included as a recurring feature in the reemployment policy programme. | Swedish National Labour Market Administration | | Working life | Workplace |
| 3 | The multisectoral group of agencies working on 'Landscape Appreciation Values' should receive continued support. Aspects of security and safety should be particularly considered to improve the prerequisites for physical activity for all. | National Board of Housing, Building and Planning | | Housing | Local environment |
| 4 | A intersectoral development project on the importance of the housing environment for physical activity among children and adults should be initiated. | National Board of Housing, Building and Planning | | Housing | Local environment |
| 5 | The Government's Council for Architecture, Form and Design should develop ideas relating to how architecture can contribute to physical activity, e.g. developing methods to encourage people to regularly use the stairs. | Government | | Housing | Local environment |
| 6 | Government should introduce a specific programme and devote resources to make an inventory of, refurbish and renovate school and pre-school playgrounds so that they inspire play, movement, sport and outdoor education. | Government | EUR 5.3 m/yr | Housing | Local environment |
| 7 | A national committee should be created to coordinate, implement and monitor the forthcoming action plan for healthy dietary habits and increased physical activity focusing on obesity issues. In addition to the relevant agencies, scientists and NGOs should be included. The group should report annually to the National Public Health Executive Committee. | National Institute of Public Health | EUR 53.000/yr | Public health | Implementation and evaluation |
| 8 | Each municipality will be encouraged to establish a public health board or equivalent. This board should include experts in the area of diet and physical activity who should integrate these issues into community-based health promotion. | Municipalities | | Public health | Implementation and evaluation |
| 9 | Health impact assessment methods should be developed further with particular emphasis on dietary habits and physical activity. The health impacts of changes in marketing, price, availability and consumption of energy-dense and low-nutrient foods should be assessed. | National Institute of Public Health | | Public health | Implementation and evaluation |
| 10 | An index should be developed for surveying food availability (supply and price of keyhole-labelled food, fruit, vegetables, and energy-dense foods). The index should be used for local planning. | National Institute of Public Health | | Public health | Implementation and evaluation |
| 11 | A national database should be set up for reporting and monitoring children's height and weight. This work should be carried out in collaboration with child healthcare and the school healthcare service. Data on breastfeeding from child healthcare records should be included in the database. | National Board of Health and Welfare | EUR 53.000/yr | Public health | Implementation and evaluation |
| 12 | Methods should be developed for monitoring children's dietary habits and physical activity, body weight and aspects of mental health in combination with socio-economic factors. | National Institute of Public Health | EUR 680.000 | Public health | Implementation and evaluation |

| Measure no. | Description of measure | Lead actor | Cost to government | Policy area | Domain |
|--------------------|---|---|---------------------------|-------------------------|---------------------------------------|
| 13 | A health communication strategy for healthy dietary habits, increased physical activity and prevention of overweight directed at the public should be developed. This strategy should describe implementation at the national, regional and local level. Health communication should be target group-specific and utilise the tools and potential provided by modern technology. The strategy should also include evaluation methodology. | National Institute of Public Health | | Public health | Vocational training and communication |
| 14 | Every municipality should adopt a policy regarding the food provided in municipal establishments. | Municipalities | | Public health | Local environment |
| 15 | A consortium should be set up with representatives from various research councils with the aim of initiating a number of long-term research projects, mainly intervention research concerning diet and physical activity. | Government | EUR 8,5 m/yr over 7 yrs | Research | Implementation and evaluation |
| 16 | Contracts or commissions should contain requirements for health-related parameters and health effects to be included in reports from the various healthcare units. In addition, these healthcare units, including dental care services, should to a greater extent be called on to develop and implement health promotion and disease prevention programmes, particularly relating to healthy dietary habits and physical activity. | County councils | | Health and Medical care | Health and medical care |
| 17 | When procuring food for patients, staff and visitors to restaurants, cafes, vending machines, kiosks, etc. in health care premises, purchasers should require that healthy snacks and keyhole-labelled meals dominate the total supply. | County councils | | Health and medical care | Health and medical care |
| 18 | Health communication should be improved within the maternity and child healthcare services as part of health promotion efforts with all pregnant women and parents aimed at promoting healthy lifestyles, especially dietary habits and physical activity. Specific health communication can e.g. form part of a parent support programme. | County councils | | Health and medical care | Health and medical care |
| 19 | The school healthcare service should promote healthy lifestyles among children and parents. Health education should be further developed as part of health promotion activities to promote healthy dietary habits and increased physical activity. Pupil height and weight should be routinely recorded. | Municipalities | | Health and medical care | Schools |
| 20 | Preventive programmes for lifestyle-related diseases should be further developed and implemented, e.g. for overweight individuals and others with risk factors for diseases associated with dietary habits and physical inactivity. | County councils | | Health and medical care | Health and medical care |
| 21 | Training in motivational interviewing techniques for changing lifestyle in general, and diet and physical activity in particular, should be provided for healthcare professionals in the maternity, child, dental, primary, secondary and school healthcare services. A training package should be developed and disseminated in cooperation with universities/ university colleges, relevant professional organisations, etc. | County councils | | Health and medical care | Vocational training and communication |
| 22 | Relevant national agencies should actively participate in the development and dissemination of evidence-based methodology concerning health promotion and disease prevention programmes, including motivational interviewing techniques for healthier lifestyles. | National Board of Health and Welfare and/or National Institute of Public Health | | Health and medical care | Health and medical care |
| 23 | Systems should be developed for applying, monitoring and evaluating 'physical activity on prescription' initiatives as part of health promotion and disease prevention in the health service. | National Consultation Group for Physical Activity on Prescription | EUR 105.000 | Health and medical care | Health and medical care |

| Measure no. | Description of measure | Lead actor | Cost to government | Policy area | Domain |
|-------------|--|------------------------------|--------------------|-------------------------|-------------------------|
| 24 | Cultural competence should be improved in health promotion and disease prevention concerning healthy lifestyles, particularly with regard to diet and physical activity. | County councils | | Health and medical care | Health and medical care |
| 25 | Health discussions on dietary habits of children and the family should routinely be carried out as a part of dental health checks/visits to the dentist's. | County councils | | Health and medical care | Health and medical care |
| 26 | A health economics evaluation should be carried out on the 'Handslagat med idrotten' (Handshake with Sport) initiative. | Government | | Sport | Local environment |
| 27 | The Swedish Sports Confederation should develop its policy document ' <i>Sports will, aims and guidelines for the sports movement in the twentieth century</i> ' to include more public health issues in general and relationships between food and health in particular, and draw up recommendations for sponsorship in sport. Participation by women and girls in sport should be reinforced at all levels. | Swedish Sports Confederation | | Sport | Local environment |
| 28 | Municipalities should carry out an inventory of their current facilities for exercise and spontaneous sport from the point of view of gender equality and equal opportunities and expand them where necessary. Municipalities should ensure that all those living in urban areas have access to local sports facilities within 2.5 km of home and more basic facilities within 1 km of home. It should also be possible and safe to get there by active or public transport. | Municipalities | | Sport | Local environment |
| 29 | Sports and leisure clubs in collaboration with county councils should train leaders in 'physical activity on prescription' according to methods developed by SISU Sports Education and organise local activities. | Swedish Sports Confederation | | Sport | Local environment |
| 30 | The sports movement should develop its activities so as to attract people with a sedentary lifestyle, people with an immigrant background and those with disabilities who wish to participate in amateur sports. The Sports for All Council should be given more resources to open doors for more people. | Swedish Sports Confederation | | Sport | Local environment |
| 31 | Education programmes for sports leaders/coaches should contain courses about the importance of dietary habits for health and about eating disorders and sports anorexia. | Swedish Sports Confederation | | Sport | Local environment |
| 32 | Sweden should work at the EU level to ensure that TV food advertising targeted at children is banned throughout the EU. | Government | | Consumer | Food sector |
| 33 | The prerequisites for restricting food marketing activities targeted at children should be examined, e.g. in respect of existing legislation. Trends in marketing should be continually monitored. A collaborative group for responsible marketing should be created. | Swedish Consumer Agency | | Consumer | Food sector |
| 34 | Consumer organisations should be able to apply for funding from the Swedish Consumer Agency for monitoring and publicising developments in the marketing of soft drinks, sweets, crisps, cakes and biscuits and ice cream directed at children, and to initiate a debate on such marketing. | Swedish Consumer Agency | EUR 530.000 /y | Consumer | Food sector |
| 35 | Material directed at young people about food marketing in relation to health should be produced. | Swedish Consumer Agency | EUR 53.000 | Consumer | Schools |
| 36 | Municipalities and schools should adopt a food sponsorship policy. The guide developed by the Swedish Consumer Agency, the Swedish National Agency for Education and the Swedish Association of Local Authorities should be used as a starting point. | Municipalities | | Consumer | Schools |
| 37 | The Government should develop a form of dialogue with the food sector's various trade organisations in the areas of food production, distribution, retail and catering, in order to discuss how the food sector can contribute to healthy dietary habits. The result may be a voluntary agreement, such as an ethical code. | Government | | Consumer | Food sector |

| Measure no. | Description of measure | Lead actor | Cost to government | Policy area | Domain |
|--------------------|---|--|--|--------------------|---------------------------------------|
| 38 | Public health impacts should be assessed and considered in relevant international negotiations and in particular regarding reforms to the EU Common Agricultural Policy. The effects of product support should be given particular consideration. | Government | | Food | Food sector |
| 39 | In the EU Commission's impending review of the directive on nutrition labelling, Sweden should work to ensure that nutrition labelling be made compulsory for all pre-packaged foods and that all such labelling also contain details about fat quality, sugar and salt (for relevant products). | Government | | Food | Food sector |
| 40 | An enquiry should be carried out on how diet and health issues can be included in the national food safety work and on how food inspection and enforcement activities can be expanded to include nutritional aspects. Such measures could be linked to companies' self-inspection programmes. | Government | | Food | Food sector |
| 41 | The prerequisites should be investigated for requiring the relevant employers in the food sector to ensure their employees have the necessary training in basic diet and health issues. | National Food Administration | | Food | Food sector |
| 42 | Data on food supply, food prices and marketing of certain food groups (fruit, vegetables, keyhole-labelled foods, sweets, crisps, soft drinks, cakes, biscuits and ice cream) should be compiled annually and published in the Statistical Yearbook of Sweden. | Swedish Board of Agriculture | | Food | Food sector |
| 43 | The work of applying keyhole-labelling should be intensified, particularly regarding labelling of meals and inspection/enforcement of this within the restaurant and large-scale catering sector. | National Food Administration | | Food | Food sector |
| 44 | Nationally representative dietary surveys should be carried out so that different age groups are monitored every 10 years. These surveys should also contain validated questions on physical activity and body weight. The surveys should be supplemented with targeted studies on different population groups (in terms of ethnicity, socio-economics, gender), and specific studies on certain food groups. | National Food Administration | EUR 320.000 /yr | Food | Implementation and evaluation |
| 45 | Information on healthy dietary habits and physical activity should be developed, expanded and made more accessible to different vocational groups (information disseminators). | National Food Administration and National Institute of Public Health | EUR 2.1 m over 3 yrs, then EUR 165.000/yr | Food | Vocational training and communication |
| 46 | A national programme should be developed for training of relevant staff within different professional areas such as healthcare, education, elderly care and the food sector. This programme should include both a common knowledge base as regards diet – physical activity – health and a number of target group-specific applications directed at particular vocational groups. | National Food Administration | SEK 210.000 /yr for 3 yrs, then EUR 53.000 /yr for 5 yrs | Food | Vocational training and communication |
| 47 | Guidelines for food in the workplace should be developed, disseminated and evaluated. | National Food Administration | EUR 53.000/yr for 3 yrs | Food | Workplace |
| 48 | Guidelines for all meals provided in pre-school, pre-school class, compulsory school and upper secondary school should be developed, disseminated and evaluated. | National Food Administration | EUR 53.000/yr for 2 yrs | Food | Education |
| 49 | The National Council for Outdoor Recreation should be given further scope to assist the Environmental Protection Agency in developing access to outdoor recreation, to advise agencies and others on such issues and to strengthen its own research expertise. | Government | | Environment | Local environment |

| Measure no. | Description of measure | Lead actor | Cost to government | Policy area | Domain |
|-------------|--|------------------------------|--------------------|-------------|-------------------|
| 50 | Non-governmental outdoor recreation organisations should, similarly to the sports movements, be given increased economic funding to encourage more people to become physically active. Particular efforts should be made to encourage children and young people, people with immigrant backgrounds, the elderly, the unemployed and the chronically ill to be more physically active outdoors. The National Council for Outdoor Recreation should be responsible for distributing and evaluating such funding. | Government | | Environment | Local environment |
| 51 | Outdoor recreation should be actively encouraged to attract new groups and hence reduce inactivity. County administrative boards should be actively involved and be given extra resources for this. | County administrative boards | EUR 2.2 m/yr | Environment | Local environment |
| 52 | A health impact assessment should be included as a criterion when allocating funding to the Government's local nature conservation programmes. The projects should be evaluated from a public health perspective. | Government | | Environment | Local environment |
| 53 | As a foundation for their overall plans, municipalities should develop nature conservation programmes, e.g. with the aim of preserving and developing outdoor recreation and the scope for physical activity. Health impact assessments should be carried out in parallel with, or as part of, the environmental impact assessments of planned projects. | Municipalities | | Environment | Local environment |
| 54 | An enquiry should investigate the potential for reducing consumption of chocolate, confectionery and soft drinks using taxation or other economic instruments, and the scope for reducing fat and sugar intake in general through taxation. | Government | | Tax | Food sector |
| 55 | A European conference should be convened on the scope for tax policy measures within the area of diet and health. | Government | EUR 105.000 | Tax | Food sector |
| 56 | The scope for tax-subsidised keyhole-labelled meals should be investigated. Such an investigation should also determine the prerequisites for a satisfactory level of supervision of the keyhole-label, perhaps via an autonomous certification system. | Government | | Tax | Food sector |
| 57 | The National Cycle Strategy should be expanded and implemented. Cycling should be included in the National Road Database to allow resource inputs to be evaluated. Planning of public roads should include a good infrastructure for safe cycleways and footpaths. The background material for decisions should include social impact assessments. A manual/handbook should be produced to reinforce assessment of the economic benefits for society of investments in the local cycling infrastructure. | Swedish Road Administration | EUR 220.000 | Transport | Local environment |
| 58 | Measures for pedestrians and cycle traffic should be included in county transport plans and contain social impact assessments. | County administrative boards | | Transport | Local environment |
| 59 | A state programme for co-funding local footpaths and cycleways should be established. | Government | EUR 11 m/yr | Transport | Local environment |
| 60 | To increase the scope for active transport, speed restriction measures should be adopted in residential areas. Different categories of road-users should be separated as far as possible. Local infrastructure should be adapted to the needs of pedestrians, cyclists and persons with disabilities. | Municipalities | | Transport | Local environment |
| 61 | The work of the Swedish Road Administration with children and young people in traffic should be given a high priority. | Swedish Road Administration | | Transport | Local environment |
| 62 | The new Education Act should include the concept of 'health' in its opening paragraph. Under the Act, meals served in pre-school, compulsory school and upper secondary school should be in line with national nutrition recommendations. | Government | | Education | Schools |
| 63 | Domestic and Consumer Science should be introduced as a core subject in upper secondary schools. | Government | | Education | Schools |

| Measure no. | Description of measure | Lead actor | Cost to government | Policy area | Domain |
|--------------------|---|---------------------------------------|---------------------------|--------------------|--------------------|
| 64 | Funding should be distributed by the Swedish National Agency for School Improvement to schools wishing to develop pilot projects on healthy dietary habits and physical activity. | Government | EUR 2.2 m/yr | Educa-tion | Schools |
| 65 | Issues of diet and physical activity should be integrated with, and occupy a central role in sustainable development education in schools and higher education. | Government | | Educa-tion | Schools |
| 66 | Continued funding and an extended mandate should be given to the National Centre for the Promotion of Physical Activity in schools so that it can work towards the integration of healthy dietary habits and physical activity and also include pre-schools. | Government | EUR 630.000 /yr | Educa-tion | Schools |
| 67 | The school subject Sport and Health (physical education) should be further developed and quality-assured. The needs of low-activity children should be given particular consideration, as should the gender perspective in education. | Swedish National Agency for Education | | Educa-tion | Schools |
| 68 | Quality indicators for education as regards healthy dietary habits, physical activity and health and for health-promoting environments with respect to diet and physical activity in pre-schools and schools should be developed and included in inspection, assessment and evaluation activities. | Swedish National Agency for Education | | Educa-tion | School |
| 69 | The quality audits of the work of pre-schools and schools performed by municipalities should include a report on how the environment promotes diet and physical activity. Teaching diet habits and health should also form one of the indicator domains. | Municipalities | | Educa-tion | Schools |
| 70 | The subject Domestic and Consumer Science should be reinforced. Particular emphasis should be placed on the importance of diet and health and knowledge of food marketing. The gender perspective in teaching should be considered. | Municipalities | | Educa-tion | Schools |
| 71 | After-school care that includes physical activity should be developed and quality-assured within the education system. | Municipalities | | Educa-tion | School |
| 72 | Work on healthy dietary habits and increased physical activity in schools should be integrated with the efforts to strengthen social relationships and mental health. | Municipalities | | Educa-tion | Schools |
| 73 | Vocational upper secondary school programmes leading to jobs in healthcare, preschool, the food sector and social services, such as nursing assistants, catering staff and child carers, should contain the core subjects of diet, physical activity and health. | Government | | Educa-tion | Schools |
| 74 | University/university college programmes on healthy dietary habits, physical activity and health education should be developed. These could be included as optional or compulsory components of vocational programmes aimed at jobs within education, social services, healthcare and food inspection. | University/ university college | | Educa-tion | Schools |
| 75 | The number of places on teacher-training programmes in Domestic and Consumer Science should be increased, as should the scope for students on teacher training programmes at other universities/ university colleges to supplement their studies with such courses. | University/ university college | | Educa-tion | School |
| 76 | An enquiry should be set up to analyse how meals/mealtimes are organised within the elderly care service. | National Board of Health and Welfare | EUR 53.000 | Elderly care | Local environ-ment |
| 77 | Guidelines and quality indicators for food and physical activity should be developed within elderly care. | Municipalities | | Elderly care | Local environ-ment |
| 78 | Elderly people should have the option of daily physical activity that is appropriate with respect to their age and health status and daily out-door activity to improve strength, mobility, fitness, coordination and balance. Exercise programmes adapted to the needs of the elderly should be developed. Elderly people living at home should receive preventive home visits including advice on appropriate diet and physical activity. | Municipalities | | Elderly care | Local environ-ment |
| 79 | Municipalities should create meeting places in the local environment that promote physical activity and healthy dietary habits among the elderly and that reduce isolation and inactivity. | Municipalities | | Elderly care | Local environ-ment |

2 Assignment and methodology

The overarching aim of Swedish public health policy is to create societal conditions that will ensure good health on equal terms for the entire population. This also includes creating conditions for healthy dietary habits and sufficient levels of physical activity as these factors are fundamental to good health. The Swedish Government intends to put forward an action plan for healthy dietary habits and increased physical activity. To help design the action plan, the Swedish Government commissioned the National Food Administration and the National Institute of Public Health in November 2003 to jointly develop the basis for such a plan. The purpose of a national action plan is to help fulfil the overarching public health aim by implementing measures that improve the conditions for healthy dietary habits and increased physical activity in the population.

The basis of the action plan should contain proposals for:

- Targets, including a target for societal measures regarding healthy dietary habits.
- Strategies for achieving these targets.
- Measures aimed at the local, regional and national level, having proved effects to encourage healthy dietary habits and increased physical activity in the population. Innovative measures that have yet to indicated any effect may also be included in the proposals, however.
- Financing and cost estimates for the proposed measures.
- Responsible actor for implementation of each measure.

The living conditions of children and young people should be taken into account as well as how health messages can be disseminated without promoting unhealthy slenderness ideals and excessive dieting. Inequalities in living conditions should constantly be taken into account: between women and men, girls and boys, between socio-economic groups and individuals with differing ethnic and cultural backgrounds. Implementation of the action plan should contribute to the Government's sustainable development efforts.

According to the assignment remit, the National Food Administration and the National Institute of Public Health should consult a number of actors including government agencies, researchers, representatives of municipalities and county councils, clubs and associations and the food industry.

The work began with the collection of as many ideas and experiences as possible from people and organisations with experience and expertise in the field. An inventory of scientific literature and of different types of reports, enquiries and action plans in other countries was also carried out. More light was then shed on certain aspects through seminars and roundtable discussion with experts as well as via various other enquiries. Reports and abstracts have been regularly posted on the websites of the two agencies throughout the course of the year. Status reports on the drafting of the basis have been presented by the project group at a number of conferences and seminars. Finally, concrete proposals for measures were circulated to various actors for comments.

Knowledge gathering and consultation have been carried out during the year in a number of different ways:

- Four hearings were held at the beginning of the enquiry with a total of 400 participants representing many different levels and sectors. Proposals for measures were generated.
- Discussions on measures have been held on several occasions during the year with expert groups from the National Food Administration on diet and health and paediatric nutrition. The same has been done with the Administration's Reference Group for the Prevention of Overweight and with the Consumer Panel. The National Institute of Public Health has held discussions about possible measures with its expert group for the health of children and youth and with the expert group for health-promoting health services.
- Meetings have been held with researchers in obesity and social epidemiology on research priorities.
- Discussions have been held with people responsible for other strategies and action plans in Sweden, from other countries, the International Obesity Task Force and the World Health Organization (WHO).
- Seminars have been held on tax policy concerning food pricing and on how the consumption of energy-dense and low-nutrient food can be reduced. In addition, the ongoing work was presented at the National Public Health Conference 2004.
- A number of enquiries, investigations, evaluations and literature reviews have also been carried out. For example, the current Swedish strategy on nutrition has been evaluated and the criteria for key-hole labelling of food have been revised.
- Scientific literature and reports have been reviewed and compiled. The Swedish Council on Technology Assessment in Health Care (SBU) has updated its systematic review entitled "Preventive measures against obesity".
- The National Food Administration and the National Institute of Public Health have had 15 joint meetings.
- Finally, the Swedish Federation of County Councils and the Swedish Association of Local Authorities as well as representatives of various professional groups and organisations have been consulted concerning the proposed measures.

3 Background and problem description

Public health problems related to unhealthy dietary habits and physical inactivity

Life expectancy in Sweden has increased but not people's healthy life expectancy (the number of healthy life-years a person has). About three-quarters of the population feel they enjoy good health; men to a greater extent than women. The number who felt they enjoyed good health gradually increased during the 1980s, but the rate of increase has since slowed especially among younger people (1).

Despite this basically favourable health trend, there are some disease groups on the increase. The most worrying of these is the increase in obesity and associated medical complications, not least the metabolic syndrome and type-2 diabetes (non insulin-dependent diabetes), which in turn are contributory causes of cardio-vascular diseases. According to the World Health Organization (WHO), 80 per cent of cardio-vascular diseases, 90 per cent of type-2 diabetes and 30 per cent of all cancers can be prevented by better dietary habits, smoking cessation and sufficient levels of physical activity (2). The ten single most significant risk factors for morbidity and mortality in industrial countries are tobacco, high blood pressure, alcohol, high serum cholesterol, overweight, low intake of fruit and vegetables, physical inactivity, drugs, unsafe sex and iron deficiency (2). Five of these are directly related to unhealthy dietary habits.

Several epidemiological studies have indicated a positive relationship between the amount of fruit and vegetable consumed and a reduced risk of contracting various diseases. Low consumption of fruit and vegetables is estimated to cause 3-4 per cent of the total disease burden (loss of healthy life-years due to disease or death) or 18 per cent of all gastrointestinal cancer, 28 per cent of heart disease, 17 per cent of oesophagus cancer and 18 per cent of strokes in Europe (2). Regarding how much fruit and vegetable one should eat, there seems not to be a threshold value for when a desired health effect is achieved but it is rather a question of: the more, the better. Even a slight increase in fruit and vegetable intake by low consumers leads to positive effects.

A high intake of dietary fibre and a reduced intake of fat, saturated fat, refined sugar and salt are the most important dietary factors when it comes to reducing the risk of diseases such as obesity, diabetes, cardio-vascular disease, dental caries and certain types of cancer (3). For example, it is estimated that the risk of cardio-vascular diseases can be reduced by up to 30 per cent if the intake of saturated fat is reduced by a third, i.e. from its current level of 15 per cent to the recommended level of 10 per cent of energy intake (4).

There are currently several scientifically well-founded consensus reports indicating a clear relationship between the amount of physical activity a person obtains and her/his state of health. These reports ascertain that regularly physical activity has beneficial effects on both physical and mental health and quality of life (5-6). Regular physical activity prevents ill-health by:

- Reducing the risk of cardio-vascular diseases. Sedentary individuals run approximately double the risk of cardio-vascular disease compared to people who have a physically active lifestyle.
- Preventing or combating the development of high blood pressure and lowering the blood pressure of hypertensive individuals.
- Making it easier to control weight and increasing energy expenditure by increasing muscle mass and reducing the proportion of body fat in a dose-response relationship.
- Preventing and making it easier to control type-2 diabetes.
- Specific forms of physical activity can reduce the risk of fall accidents by improving bone health and maintaining strength, coordination, cognitive skills and balance.
- Reducing the risk of colon cancer. Evidence of a preventive effect on breast cancer is growing.
- Strengthening the immune system.
- Reducing the risk of depression and anxiety as well as improving mood and self-esteem.
- Playing an important role in the prevention and treatment of chronic unspecified low back pain.
- Improving fitness and muscle strength, making it easier for older people in particular to cope with everyday life.

Sedentary lifestyle is a serious and growing public health problem. In 2002, WHO estimated the disease burden (lost healthy life-years due to disease or death) related to physical inactivity (a sedentary lifestyle) in western industrialised countries (2). Physical inactivity was estimated to cause 6-7 per cent of all premature deaths or 3-4 per cent of the total disease burden. The report also pointed out that physical inactivity caused 23 per cent of all ischemic heart disease, 13 per cent of ischemic stroke, 11 per cent of breast cancer cases, 17 per cent of colon/rectum cancer cases and 15 per cent of diabetes cases.

The diseases to which unhealthy dietary habits and physical inactivity contribute can therefore be said to be major public health problems that explain a considerable amount of the morbidity and premature death both in Sweden and the rest of the world. It is true that deaths from cardio-vascular disease have decreased in Sweden over the last decades but it still constitutes by far the single biggest cause of morbidity and mortality (see Figure 1), (1). It is feared that the decrease seen in cardio-vascular disease may well diminish due to the increasing prevalence of obesity (2).

Overweight and obesity among adults

Over half the men and 36 per cent of women in Sweden between the ages of 16 and 74 are overweight or obese (Public Health Report 2005). Eleven per cent of men and 9 per cent of women are obese. In other words, about 2.1 million people are overweight and about 630,000 are obese.

The number of obese adults has doubled since 1980 and the number of overweight people has increased by 30 per cent among men and 20 per cent among women (Public Health Report 2005).

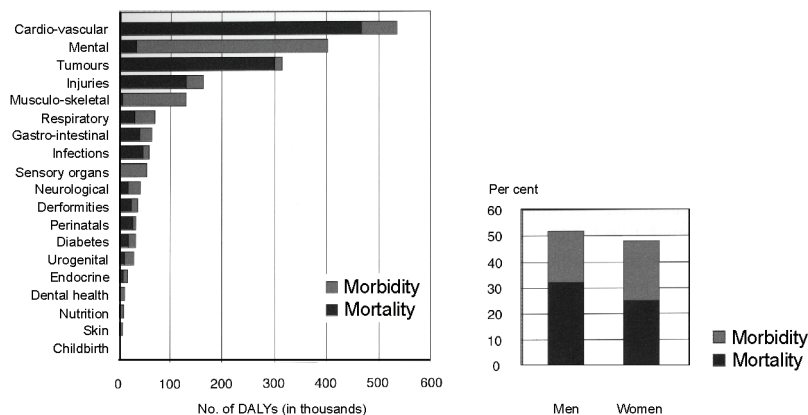


Figure 1. Distribution of the disease burden (DALYs) on mortality and morbidity respectively and by sex.

Source: Public Health Report 2001, National Board of Health and Welfare

BMI increases up to the age of 64 years only to then level out and eventually decrease slightly in very old age. This applies to both men and women. A man's BMI is approximately 1.5 units higher than a woman's before the age of 55. This difference between the sexes decreases in old age. On the other hand, the number of obese people is increasing in all age groups but most of all among young women between 16 and 34 years old, where it has risen six fold since 1980/81. In absolute terms, the increase is similar among men of the same age - approximately 5 per cent. It is interesting to note that the number of obese women aged between 35 and 54 stopped rising after 1998/99 and has held relatively stable at 9 per cent since then (Public Health Report 2005). It is also important to mention that self-reported BMI (Figure 2) underestimates the true value by 2-4 per cent on the population level (Public Health Report 2005).

Over one billion adults and children worldwide are now either overweight or obese (7). In 2002, WHO estimated that overweight and obesity was causing 7 and 8 per cent of the total disease burden (i.e. the loss of healthy life-years) among men and women respectively in Europe (2). This disease burden consists of the diseases listed in Table 1. In addition to this, overweight and obesity reduce fertility and are risk factors regarding pregnancy and childbirth (10-11).

American studies indicate that the number of lost life-years due to obesity varies with age, sex and ethnicity. The higher the BMI, the greater the negative effects, especially when BMI exceeds 35. The younger the person is, the greater the number of lost life-years. The life of a white man or women with a BMI of 35 is 3 years shorter than a person with a BMI of less than 25. Young men with a BMI of over 45, i.e. extreme obesity, lose on average 13 life-years (12).

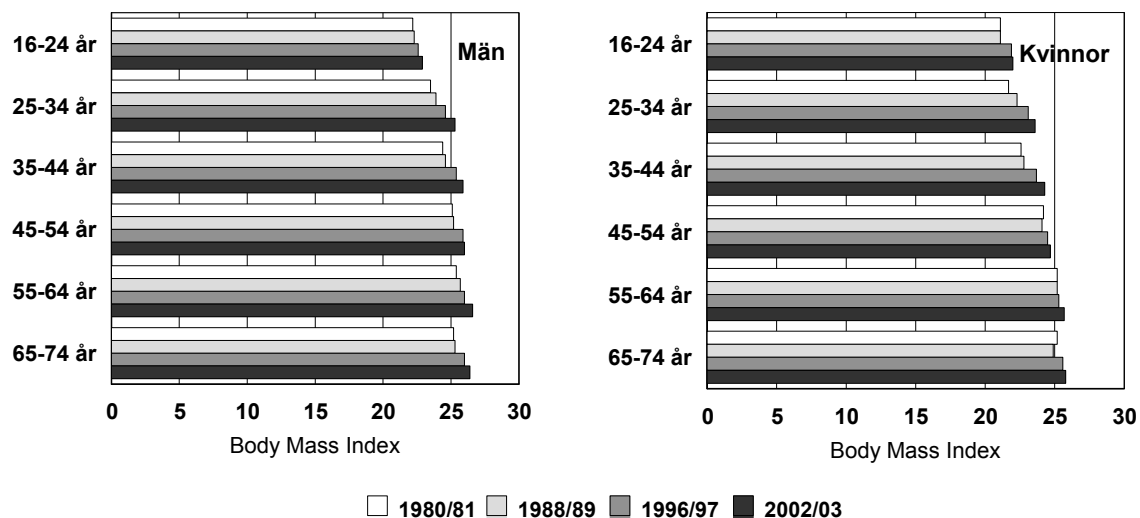


Figure 2. Mean BMI (kg/m²) in different age groups among men and women, 16–74 year, 1980/81–2002/3.

Source: Survey of Living Conditions, Statistics Sweden (SCB).

Studies have indicated that the self-reported, health-related quality of life of extremely obese people is similar to that of patients with spinal injuries and severe chronic pain and those in the advanced stages of cancer (8). A national Finnish study indicates that obesity is associated with a 30-per cent lower salary among high-educated women, though not among their low-educated counterparts (13). There is much to indicate that obese women find it more difficult to find employment than slim women with the same level of education, a fact that also points to the discrimination of obese women in working life. The effect was not the same for men. Among the elderly, obesity is linked with increased mortality only if it is accompanied by diabetes and cardio-vascular disease, with or without hypertension (8). Treating obesity is expensive and not particularly effective (8). But bearing in mind the major health risks obesity involves, the health service is forced to act. Despite its obligation by law to prevent and treat disease, the health service's resources are limited and everyone seems to agree that preventing obesity is the only sustainable way to tackle the problem (8, 14–15). A new calculation from the Swedish Federation of County Councils shows that the direct costs for treating obesity and diseases caused by such as type-2 diabetes, hypertension, angina and acute myocardial infarction amount to SEK 3 billion (about EUR 327 million) (16). The total cost to society (i.e. the sum of costs for healthcare and productivity loss) is however unknown.

Table 1. Relative risks of diseases related to obesity(BMI>35) compared to normal body weight (BMI<25) (8–9)

| Diagnosis | Men | Women |
|--------------------------------|------------|--------------|
| Diabetes | 40 | 40 |
| Myocardial infarction | 5 | 3 |
| Stroke | 2-3 | 2-3 |
| Hypertension | 3 | 3 |
| Gallstone diseases | 3-4 | 3-4 |
| Breast cancer, post-menopausal | - | 1-2 |
| Colorectal cancer | 1-3 | 1-2 |
| Uterine cancer | - | 2-6 |
| Musculo-skeletal diseases | 2-3 | 2-3 |
| Respiratory diseases | >3 | >3 |

Overweight and obesity among children

BMI varies among children and young people depending on their age and gender. The limits for overweight and obesity are therefore both age- and gender-specific. These limits have been set by Cole et al (17) who analysed the issue on behalf of WHO and the International Obesity Task Force (IOTF).

There is currently no national data on body weight among children in Sweden. There are only a number of studies from different time periods over the last twenty or thirty years. The prevalence of overweight and obesity among children (4–18 years) varies in different studies between 14 and 23 per cent, of which 1–4 per cent are obese (18–22).

The prevalence of overweight has doubled among schoolchildren in Umeå since the mid-1980s (20). In the same study, obesity has increased fivefold. Another nationwide study shows that the prevalence of obesity among children in the 10-16 age group increased 2.5 times between 1987 and 2001 (21). The proportion of 18-year-old obese men has increased fourfold since the 1970s (22).

The trend in overweight and obesity among children in Sweden is comparable to the international trend. Over the last 25 years, the proportion of overweight and obese people has increased 2-3 times in most European countries, Australia and the United States. In Europe, the prevalence of overweight and obesity among younger children is clearly highest in the countries around the Mediterranean, with 31-36 per cent of 7-11-year-olds and 20-23 per cent among 14-17-year-olds (15). Regarding the countries in northern and central Europe, children and young people in the UK are the most obese, with a prevalence of overweight and obesity of 23 per cent among 10-year-olds and 31 per cent among 15-year-olds (23). The prevalence of obesity among 6-year-olds in the UK is 10 per cent and as much as 17 per cent among 15-year-olds, defined as being above the 85th percentile in growth charts.

Obesity in childhood represents a serious health problem (24). Obese children have a low self-esteem and are more often prone to mental problems compared to children of normal weight. Most of them have one or more risk factors for cardio-vascular diseases and therefore a heightened risk of contracting these diseases as adults. Other studies

have shown a significantly increased risk of asthma among obese children and double the risk of type-1 diabetes (insulin-dependent). In addition, there are indications, although there is a lack of hard evidence, of a greater risk of contracting type-2 diabetes as well as orthopaedic and other problems. The risk of a child who is obese remaining so as an adult is greater the older and the heavier the child is and if at least one of the parents is also obese. Being obese as a teenage is estimated to involve a risk of continued obesity at 35 year old as 78 per cent for men and 63 per cent for women (25). The risk of an obese teenager continuing to be obese in adulthood is therefore considerable. Child obesity contributes heavily to the disease burden among children and in a longer perspective to a substantial disease burden among young adults who will require care for the rest of their lives.

The metabolic syndrome

Type-2 diabetes, hypertension, blood lipid disorders, insulin resistance, abdominal obesity, myocardial infarction and stroke often occur together in different combinations. This accumulation of diseases and symptoms is thought to have a common background and therefore constitutes a syndrome - known as a 'metabolic syndrome'. Various stress factors, initiated by e.g. psychosocial circumstances, can contribute to the syndrome's occurrence (26). Metabolic syndrome can to a large extent be both prevented and treated by physical activity, healthy dietary habits and weight loss. Medical drugs are however the most common form of treatment today, stretching over a number of years and involving a sizeable proportion of the population. The costs of such treatment are naturally very high; drugs used to treat hypertension, elevated blood lipids and hypoglycemia constitute 15 per cent of the total costs for pharmaceutical products (27).

Eating disorders

The current state of knowledge as regards eating disorders has been summarised in a literature review (28). Dietary problems of different kinds are seen as early as in infants and schoolchildren, and especially in girls. For some, the problem persists through and beyond adolescence. Specific forms of eating disorders can be found in at least 3 per cent of young Swedish women. Anorexia nervosa is an uncommon disease with a prevalence of about 0.2–0.4 per cent of Swedish women in the 12–25-year age group. Anorexia is 10 times more common among girls and young women than among boys. The incidence of anorexia among young women is between 8 and 40 per 100,000 women per year and this has most likely not risen over a 25-year period. The prevalence for bulimia nervosa is about 1 per cent and for compulsive eating disorders about 2–3 per cent. Unspecific eating disorders are probably three to four times more common than the specified syndromes. There are many groups in top-level sport with a high prevalence of eating disorders. Practitioners of aesthetic sports, endurance sports and ball games in particular run a much higher risk of eating disorders. Women participating in these sports are more likely to develop disorders than men compared with the population as a whole.

The most important known determinants for the development of eating disorders are female gender, an age of 14–20 years and intensive dieting. Young obese people whose weight fluctuates run a greater risk of developing eating disorders (28). Many

people develop anorexia for the first time after dieting but there is no evidence to suggest that the professional treatment of obesity leads to eating disorders. For dieting to lead to eating disorders, the child has to be vulnerable in some other way. Hereditary factors, problems in early personality development and western cultural values may provide a breeding ground for eating disorders. Several of the risk factors for anorexia and bulimia are the same as for mental ill-health. Swedish studies show that a high BMI, dissatisfaction with one's own body and being teased about one's weight may be risk factors for eating disorders among girls. Improving children's self-esteem and self-confidence and reducing the stigma of being overweight should therefore be part of the prevention of overweight.

There is no convincing evidence to suggest that preventive measures for eating disorders are in fact effective. Efforts to prevent overweight and eating disorders need to concentrate on developing more health-promoting measures for good physical and mental health and early warning systems to detect and support risk individuals at an early stage. There is a great need for further research on the prevention of eating disorders.

Dietary habits and physical activity in different population groups

Dietary habits

People in Sweden basically have healthy dietary habits (29). Vitamin, mineral or protein deficiencies are rare. The exception being women, whose intake of folic acid and iron is on average too low. But our diet is not without its problems. The increased prevalence of overweight indicates that the energy intake is too high in relation to energy expenditure. Ninety per cent of the adult population eat less fibre than is recommended, 80 per cent eat too much fat, 96 per cent too much saturated fat and half of them consume too much refined sugar.

A recently completed nutritional study of 4-year-olds in Sweden shows that they generally receive enough nutrients (18). The amount of fat and sugar they eat is however too high and their consumption of fruit and vegetables is too low. Only one in ten 15-year-olds in the Stockholm area eat fruit and vegetables every day (19).

Age and gender

Findings from the latest national nutritional survey on adults, called 'Riksmaten' (National food survey), (29) indicate in some respects significant differences concerning dietary habits in different age groups. The dietary habits of the elderly are seen to be positive in comparison with those of younger people. Older people eat more 'traditional' food such as potatoes and root vegetables, fish, offal, food made from animal blood, porridge and buns and cakes. Younger people eat and drink more 'modern' foodstuffs instead including pasta, rice, pizza, sweets, crisps, soft drinks and juice. They therefore have a higher intake of sugar, whilst older people eat more fibre. Older people also eat more fruit and vegetables than younger people and seem to have understood the dietary

message better in this respect. Women have better dietary habits than men in some respects; their consumption of fruit and vegetables being higher, for example (29). In a recently performed study (30), 4 per cent of men and 12 per cent of women ate at least 5 fruit and/or vegetable portions a day. Among men the greatest proportion of those eating at least 5 fruits and/or vegetable portions per day could be found among men in the 18–29 age group and for women in the 45–64 age group.

Education, income and ethnicity

High-educated men have in general healthier dietary habits than their low-educated counterparts (29). Men with a university degree or equivalent used less fat on their sandwiches, drank less soft drinks and also ate more vegetables and rice and drank more juice than those with only a compulsory school education. The differences among women are less. Alcohol intake was however higher among high-educated women than their low-educated counterparts. Low-educated individuals also ate less fruit and vegetables according to the recently performed public health survey (30). A review of studies in 15 European countries showed that a long education and healthier dietary habits were interrelated (31). It has also been established that smoking is associated with less healthy dietary habits among both men and women (29).

Children's dietary habits seem to be linked to the education level of their parents, especially their mother's. Various studies from Norway, Denmark and Sweden show that children with high-educated parents ate less sugar, more fruit and vegetables and less fat. They also had a lower BMI and more regular dietary habits and ate healthier food (32, 34–35). Overweight among children aged 4–11 in Sweden tends to be more common in low-education than in high-education households (18).

Clear differences in dietary habits depending on parents' education and ethnicity were evident among 15-year-olds in the Stockholm area (19). Both boys and girls with low-educated mothers more often had irregular dietary habits and twice as many often ate unhealthy food compared to adolescents whose mothers were high-educated. There were also differences regarding where their parents came from. Young people with an immigrant background ate unhealthy food much more often than those of Swedish descent. On the other hand, those with an immigrant background ate fruit and vegetables more often compared to their Swedish counterparts.

The dietary habits of third graders (9-10 year-olds) were compared in eight of Stockholm's city districts, which were divided into areas depending on the ratio between low- and high-income earners (33). Children in the most prosperous areas seldom skipped dinner but on the other hand ate sweets more often. The poorer the area, the more often children skipped dinner and when they did, they were more likely to eat fast food. Children in poor areas ate vegetables less often and they were more likely to drink full-fat milk.

Furthermore, they more often ate without adult company and ate less healthy breakfasts and snacks. No disparity could be seen between children in the different city districts as regards the number of meals per day, the number of sweet and fat snacks or the amount of fruit they ate. On the other hand, children in poor areas drank soft drinks more often (33). The recently completed nutritional survey on children, 4–11 years old, showed that foreign-born children, or children with foreign-born parents, more often chose full-fat milk and ate more fast food than children with Swedish-born parents (18).

Regional differences in dietary habits

Despite the obvious regional differences in dietary habits in Sweden, it is difficult to see any clear pattern (29). The consumption of fruit and vegetables is, however, lower and the fat intake higher in the north of the country. On the other hand, northerners eat more porridge and potatoes. Alcohol consumption is highest in the metropolitan areas.

Physical activity

The latest Swedish survey of physical activity in the 18–84 year age group was performed by the National Institute of Public Health in the spring of 2004. This took the form of a questionnaire survey to a random selection of the population (30). A total of 20,000 people were approached and 61 per cent responded. Some important observations in the survey regarding physical activity were:

- 14 per cent of both men and women reported that their leisure time was mostly sedentary. This is the equivalent of 900,000 people.
- Having a sedentary leisure time was 2 to 3 times more common among people of non-Nordic descent. The further away from Sweden a person had been born, the more likely s/he had a sedentary leisure time.
- A sedentary leisure time was twice as common among low-educated people as those with a high education.
- Fifty-eight per cent of men said they were physical active for more than 30 minutes a day, whereas the corresponding figure among women was 54 per cent. Thirty-four per cent of men and 27 per cent of women were physically active for more than 60 minutes a day. There were no clear differences in physical activity in relation to level of education. Slightly more high-educated people took regular exercise.
- Among those on social benefit or the economically disadvantaged, there were twice as many who led a sedentary lifestyle compared to other economic groups.

The survey of 15-year-olds in Stockholm (19) indicated that:

- Sixty-four per cent of girls and 78 per cent of boys achieved the recommended level of 60 minutes a day physical activity.
- Among boys, those with a Swedish background and more highly educated parents were less physically active than boys of foreign descent with low-educated parents. There were no social differences in physical activity among girls.
- Hours of watching TV and video were linked to obesity, low level of education and a foreign background.

There have been no Swedish studies into changes in total daily energy consumption over time among children and young people. There are, however, some surveys in which children and young people were asked how often and how much they exercised as opposed to sat still. The number of those leading a sedentary lifestyle has increased, but so has the proportion of those active in some kind of club (36). The most common sedentary pursuits amongst children and young people are watching TV or video or playing computer games. The percentage of children watching TV at least two hours a day increased from 54 to 67 per cent and the proportion of avid watchers (at least four hours a day) increased from 18 to 22 per cent between 1990 and 1998 (37). Both TV-watching and computer use increase with age (38). TV- and video-watching is most

common among the low-educated and has been linked to overweight and obesity (19, 39-40). At the same time, there has been a dramatic drop in sports activity outside clubs, implying that an increasing amount of the physical activity children and young people do get is within a club. The sports they do are becoming more specialised necessitating more training and higher performance. This may explain the fact that fewer young people in total take part in regular sports activities. Very few children, who are not members of sports clubs, are capable of doing physical activity on their own several times a week (36).

Inequalities in health

Obesity and obesity-related diseases are among the socially most unevenly distributed health conditions and the trend indicates that such social inequalities are on the rise (Public Health Report 2005). Social inequalities are evident as early as pre-school age and obesity is more prevalent in rural than in urban areas. All measures that can improve dietary habits and physical activity among socio-economically disadvantaged groups therefore have considerable potential when it comes to reducing inequalities in health.

Overweight and obesity are much more common among children and young people from low-educated families (19). The prevalence of obesity among 15-year-old girls in Stockholm was 3.5 times higher among those with low-educated mothers compared to those whose mothers were high-educated.

The corresponding figure for boys was 1.7 times higher. The same study showed that a higher proportion of the young people with an immigrant background (4.4 per cent) suffered from obesity compared to young people with a Swedish background (2.8 per cent). The differences were still apparent after subdivision by gender and when the mother's level of education was taken into consideration.

A social gradient was also evident when it came to cardio-vascular diseases, which to a great extent are caused by smoking, unhealthy dietary habits, physical inactivity and over consumption of alcohol. Death from different cardio-vascular diseases is 1.5 times more likely among blue-collar workers and the low-educated compared to the rest of the population, both in Sweden and in other Nordic countries (41). The authors note that the development of effective methods to modify lifestyle in low-educated and low-income groups is very important in the prevention of cardio-vascular diseases.

Societal changes impacting dietary habits, physical activity and body weight

Obesity is to a certain extent dependent on hereditary factors. This congenital tendency for obesity is widespread in the population. But the increase in the prevalence of obesity over the last twenty or thirty years cannot exclusively be explained by genetic factors but is mainly due to changes in dietary habits and physical activity depending on social and societal factors (8). Swinburn and Egger (42) have coined the concept of ‘obesogenic environment’. They mean by this an environment defined as ‘the sum of influences that the surroundings, opportunities or conditions of life have on promoting obesity in individuals or populations’.

WHO has categorised the most important determinants for obesity as shown in the following table:

Table 2. Factors that promote or curb weight gain and obesity (3).

| Evidence | Reduced risk | Increased risk |
|---------------------|--|--|
| Convincing | Regular physical activity High dietary intake of NSP (dietary fibre) | Sedentary lifestyles High intake of energy-dense micronutrient-poor foods* |
| Probable | Home and school environments that support healthy food choices for children Breastfeeding | Heavy marketing of energy-dense foods and fast food outlets Adverse socio-economic conditions High intake of sugars-sweetened soft drinks and fruit juices |
| Possible | Low glycaemic index foods | Large portion sizes High proportion of food prepared outside the home “Rigid restraint/periodic disinhibition” eating patterns |
| Insufficient | Increased eating frequency | Alcohol |

*Energy-dense food contains a lot of sugar and/or fat and not much water and dietary fibre.

An additional factor that has been identified as contributing to obesity is lack of sleep (43).

Societal changes impacting physical activity

Technical development and increased food production globally in combination with economic growth has been crucial for improvements in public health and increased average life expectancy throughout the world. At the same time, these factors have also contributed to less physical activity and changes in dietary habits.

Factors that influence people's physical activity level include proximity to green areas and facilities for physical activities, access to public transport, existence and standard of footpaths and bicycle paths, a sense of security and aesthetically attractive design of the environments (44–49). Increased urbanisation, fewer green areas in towns and cities and a growth in road traffic increasingly restrict the scope for everyday physical activity, especially among children and young people. It is difficult to motivate people to make healthy choices when the conditions and opportunities for this are increasingly limited or totally non-existent.

Energy expenditure has fallen considerably because of less physically demanding working tasks and the growth in vehicle transport. Physical activity is in contrast to earlier mostly a leisure pursuit. The importance of the local environment for physical activity has therefore increased. The growing interest in structured exercising activities shown over the decades has from a population perspective not compensated for reduced physical activity levels at work and as active transport (walking or cycling)(50). It has been calculated that the average westerner uses only about 15 per cent of her/his daily energy expenditure through work. Total energy expenditure through physical activity only amounts to just over half that of what primitive and tribal people in South America expend (51). To achieve the same level of energy expenditure would require a daily walk of about 19 km. The growth in motoring, the advent of the TV and the increasing automation of working life have all contributed to the diminishing use of human muscle power and hence energy expenditure. The trend is towards a more sedentary lifestyle which must be compensated for through daily and leisure-time activities to satisfy the body's need for movement. Although every single technical advancement has little effect on energy expenditure, the total impact is contributing to the ongoing trend in obesity (52).

Today, it is a question of taking every opportunity to be physically active, e.g. by taking the stairs instead of the lift, walking or cycling instead of travelling by bus or car.

Conscious action is a necessity by the individual to be physically active as well as on the part of society to preserve green and natural areas in and around urban areas for recreation, promote broad sports and create a local environment where priority is also given to the well-being and accessibility of disabled groups.

Societal changes impacting dietary habits

The 'nutrition transition' refers to the process countries go through when there is a transition from traditional food with relatively low energy density to a western diet characterised by a high intake of animal products, salt, saturated fat and sugar (53). Development throughout the world is basically following the same pattern. Firstly, the energy intake goes up, mostly in the form of vegetable products and oils (expansion effect). Then, vegetable carbohydrate foods are replaced by protein-rich animal products and sugar, which involves a higher fat intake, especially saturated fat (substitution effect) (54). This trend can mostly be explained by the 'green revolution' with increased food production, increased market orientation in the agricultural sector and resulted in falling food prices. The consumer's purchasing power has simultaneously increased.

In developed countries, average dietary energy supply has increased from about 3,000 kcal per capita to 3,400 kcal per capita since the 1960s (54). In the EU, the

current average supply is about 3,500 kcal per capita, whilst in the United States it is 3,900 kcal per capita (Figure 3). The energy requirement is on average just over 2,000 kcal per person and day. According to FAO forecasts, further increases in dietary energy supply in all regions of the world are to be expected until 2030 (54). More than 770 million people currently suffer from a shortage of food. The difficulty in achieving the goal of halving starvation in the world by 2015 does not depend on a global lack of food (55).

Food prices have never been as low as they are today, thanks to an enormous increase in productivity in the agricultural sector. This has enabled many people to eat better food and thereby improve their health. Food prices have fallen since the 1960s by

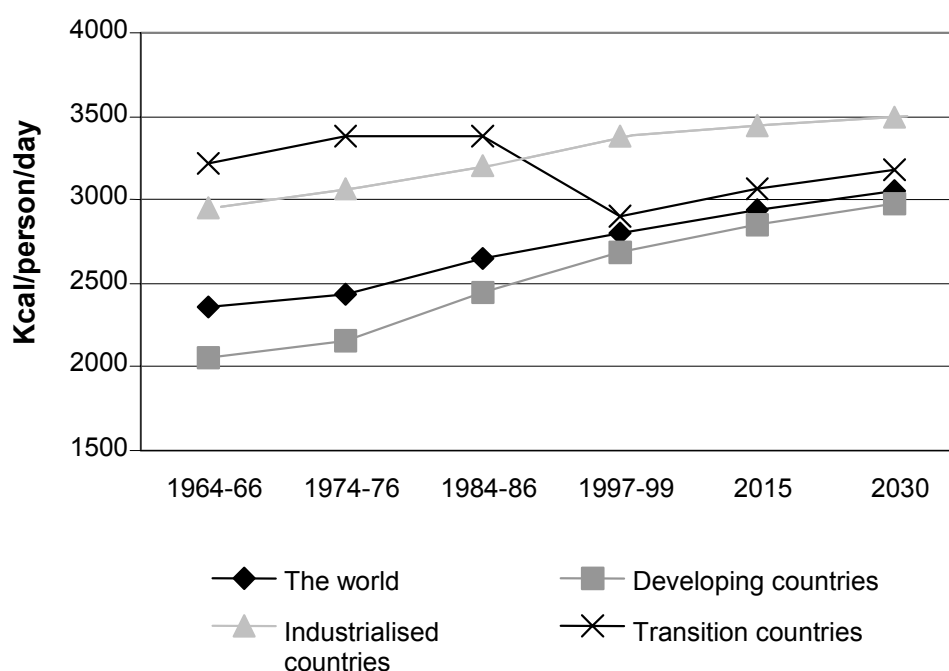


Figure 3. Trends in dietary energy supply in different parts of the world (53).

60 per cent relative to a price index and the transition from energy deficiency to energy surplus has happened very rapidly in many countries with positive and negative effects on public health.

Due to better infrastructure, urbanisation enables increased trade between countries with radical changes in the distribution and marketing of food. This in turn has led to dietary habits becoming more similar throughout the world.

Taken together, whilst the trend towards increasingly greater food supply has led to greater food security for starving populations and secured the continued existence of mankind, the overproduction of food represents a serious threat to public health and the environment. The best solution from a social perspective would be if food production were adjusted to a level that is compatible with sustainable development.

For the individual consumer, the changes described above imply in practice that food is now much more available than ever before. In addition to greater availability,

the portion size and packaging particularly of fast food, soft drinks, cakes and biscuits, ice-cream, sweets and crisps have also increased (56). The increased supply has also led to increasingly tougher competition among food companies. This has in turn led to increasing and more sophisticated marketing of food, and especially energy-dense and low-nutrient products.

This not only leads to the consumer choosing one brand instead of another but also contributes to a rise in overall consumption (57).

Energy supply and energy intake are also on the increase in Sweden

Food balance sheets from the Swedish Board of Agriculture, indicate that energy supply increased by 144 kcal or about 5 per cent between 1990 and 2002 (58). Fat intake was unchanged whereas protein and carbohydrate went up. Total intake of sugar also remained unchanged.

The increase in dietary energy supply mostly consisted of the following foodstuffs:

| Food type | Kcal per person and day |
|-----------------------------------|--------------------------------|
| bread and cereal products | + 104 |
| meat and meat products | + 83 |
| chocolate, sweets, ice-cream etc. | + 89 |
| soft drinks | + 32 |
| alcohol | + 22 |

A reduction in energy intake occurred from:

| Food | Kcal per person and day |
|-----------------------|--------------------------------|
| white sugar (sucrose) | - 58 |
| milk | - 13 |
| cooking fat | - 108 |

This amount of energy is equivalent to an additional 30-minute walk per day. There is no evidence however pointing to an increase in average daily energy expenditure.

Registered food consumption also increased slightly between 1989-1997 (on average by 107 kcal per day for women and 80 kcal per day for men) (29), which is in line with the Board of Agriculture's estimated increase in dietary energy supply.

An energy intake that exceeds energy output by 107 kcal per day over one year is equivalent to the energy in 4-5 kg of adipose tissue.

The rise in alcohol consumption in Sweden from 8 liters in 1995 to today's level of about 11 liters per person and year is equivalent in energy to about 2 kg of adipose tissue. Although it has not been possible to reach consensus in the issue of alcohol being a contributory factor to weight gain in the population, Swedish and Finnish studies suggest that the rising alcohol consumption may be a contributory factor to the rapid weight gain seen especially among men (8, 59).

One way of influencing consumers is through marketing. There is currently an imbalance between commercial pressures and producer-independent health information. For every dollar that WHO spends on improving the nutritional status of the world's population, the food industry spends 500 dollars on the marketing of processed food (60).

There is now international consensus on the inability of the market to solve the major public health problems on its own and on the need for governments to intervene to promote healthy dietary habits and increased physical activity (61). The Swedish Government underlines its commitment to act in its sustainable development strategy: 'The growing threat to public health, not least of young people in the form of tobacco, alcohol, obesity and environmental problems requires concerted preventive efforts' (62).

Eating disorders and societal factors

The fashion business and the media are persuasive trendsetters in today's society and exert powerful influence on the perfect body ideal and other values that affect young people in particular.

Whilst the problems of overweight are on the rise among children and young people, there is a growing amount of attention being paid to eating disorders that can lead to both underweight and overweight. Researchers and practitioners currently feel that the causes of eating disorders are multifactorial and vary depending on the individual (28).

In light of the complicated relationship between overweight, dieting and eating disorders researchers in the field are advocating an integrated strategy to tackle these complex problems among young people so as, for example, to avoid giving mixed messages (63). A very important component of such programmes is working to improve the self-esteem, self-confidence and social relations of children and young people.

International action plans for healthy dietary habits, increased physical activity and the prevention of overweight and obesity

Action plans for healthy dietary habits, increased physical activity and/or prevention of overweight and obesity are being devised all over the world. This work is conducted at national level through ministries and authorities (64-70) although measures have also been proposed by national committees of experts, NGOs and parliamentary committees (71-73).

WHO presented its Global Strategy for Diet, Physical Activity and Health in May 2004 (61). In the Nordic region, a joint project has recently been initiated by the Nordic Council of Ministers to devise an action plan for healthy dietary habits and physical activity (74). The EU's health directorate (DG SANCO) is currently engaged in working out a plan of action under the working name 'Diet, physical activity and health – a European platform for action'.

The main concern in all the strategies is the increase in lifestyle-related diseases. The solution recommended is action within several settings at the same time, on many levels and with many actors and for the long-term. The objective to be achieved is the reduction of overweight through increased physical activity and consumption of fruit and vegetables, for example, with reduced consumption of sweets, soft drinks, cakes and cookies, ice cream and crisps. The key words are food availability, food supply and increased physical activity. Most national action plans have a list of between 60 and 90 different measures.

Many action plans are based on arena settings perspective. The most common setting is the school. School meals are primarily the subject of forceful action to be taken through regulation using guidelines to ensure more healthy food and a reduction in the availability at schools of soft drinks and sweets. Several countries recommend more education about food and physical activity at school as well as the teaching of domestic science subjects where these exist. Increased availability of fruit at school is also a common point in all the action plans.

Other prominent settings include the health service, further education and the local environment. Local action plans to increase availability of healthy food as well as physical activity is proposed. The results should be reported in annual reports. The work of municipalities should increase availability of healthy food for the economically disadvantaged. In Denmark the physical planning of the municipality is emphasised where visible stairs, bicycle paths, safe roads and playgrounds should contribute to increased physical activity (69).

The workplace can be a good setting for healthy dietary habits, since physical activity can be encouraged by allowing employees to do it during working hours. Many proposals are directed towards catering and restaurants to increase the level of knowledge among those working in the food industry as well as devising guidelines for healthy food. In New Zealand there is a proposal that food served by caterers should follow the Department of Health's nutrition policy (65).

Proposals for interventions in primary production, the food industry and in food retailing are limited. They focus is on cooperation with industry for nutrition information material, labelling or joint discussions regarding the reduction of salt, sugar and fat in food. The influence of TV commercials on consumption, especially on the dietary habits of children, is considered an important area for study (66). In New Zealand the media is highlighted as a channel for heightening awareness and knowledge about healthy food and physical activity (65). Communication through social marketing (the use of marketing principles for resolving social and health-related issues) and uniform messages are important. The action plans are followed up by measuring body weight and food consumption. Most frequently the Ministry of Health or another associated ministry is responsible for coordination of the overall strategy. In France the coordinating committee comprises 7 ministers, authorities, the food industry, local authorities and researchers (64).

The UK proposal for a healthier lifestyle was presented by the Department of Health in the autumn of 2004 (68). 'Choosing health – making healthy choices easier' includes healthy dietary habits. A comprehensive basis for these decisions has been prepared: definition of the problem of overweight in the UK (75), a report on obesity (71), estimates of future medical costs with an increasingly overweight population (76)

along with analyses of the effect of advertising on the dietary habits of children (77). The work has also incorporated the initiation of negotiations with the industry to voluntarily lower salt, sugar and fat content in food (78). The British proposal calls for forceful action on food and physical activity at schools, the restriction of TV commercials targeting children and the introduction of a signalling system in shops to guide consumers towards healthier choices. Health communication to consumers should be improved through a series of measures.

Lessons from the current Swedish strategy for nutrition

In 1995 the Swedish Government approved a national action plan for nutrition (79), a policy document with the aim of providing a point of departure especially for work at national level but also guiding regional and local actors. The main objective in the action plan was: ‘To promote health and prevent ill health and premature death from diet-related disease and to reduce the social inequalities in the prevalence of such diseases through improved dietary and exercise habits.’

To render the action plan more operative, the National Food Administration and the Institute of Public Health formulated ‘National aims and strategies for nutrition, 1999-2004’ (SD-99), (80). The aim of SD-99 was to provide a tool for professionals at all levels to promote healthier dietary habits. It outlined the direction and responsibilities for different agencies as well as guiding other actors. The document includes objectives, measures and responsibility for four areas: education, support to the local and regional level, consumer support and participation and catering services.

In 2004, the National Food Administration commissioned an evaluation of SD-99 (81). The overall aim of the evaluation was to gain insight into how this document has been designed and implemented. The objective was to identify and evaluate factors which were decisive in how the existing strategy was utilised or otherwise, and to integrate these lessons and recommendations from other policy document areas. The knowledge gained from this evaluation should be used in the devising of a new national action plan for healthy dietary habits and increased physical activity.

‘A good document that deserved a better fate’

The evaluation suggests that, when published, the document was a support to those already working with public health nutrition as it provided them with structure in their work. However, municipalities and county councils that did not work actively with the issues did not initiate such work despite SD-99. The document was in competition with the national public health objectives being devised at the same time. These were felt by many actors to have a higher status. When SD-99 was published, there was a lack of evidence-based methods and models in public health nutrition as well as few evaluation methods. This meant that proposals had to be based on experience only. The evaluation indicates that there was no established structure for public health nutrition work on a

national, regional and local level, which made it considerably more difficult to implement such a strategy. Furthermore, there was a shortage of resources in the form of financing and time for implementation which is absolutely essential for success.

Lessons

A national action plan should be adopted by the government and/or parliament. At the same time promotion of healthy dietary habits and increased physical activity should be institutionalised at the local and regional level. This creates continuity and clarity for all actors. Everyone involved in the action plan should feel that they have participated in its development. This can be achieved by dealing with both supportive and counter forces in an open and flexible way when developing and implementing an action plan. Cooperation is needed between ministries and agencies. An action plan should not be designed as a 'wish list'. The measures should be applicable in practice. The 'know-how' is just as important of the 'know-what'. This means that stating *what* should be attained, such as that 'all school lunches being healthy', is not enough and that an action plan must indicate *how* this will be achieved. This demands broad expertise from those designing the action plan. Adequate resources must be assured for development, capacity building and implementation. At national level this is chiefly a question of resources for developing methods and competence, for supporting projects, process management and spreading information. The implementation phase demands continuity, structure and, most importantly, resources.

Methods have to be created and routines established for follow-up and evaluation during implementation. Measurable objectives have to be formulated and evaluated on a continuous basis. Feedback from the results has to be provided to the parties concerned.

Efforts regarding dietary habits and physical activity on the regional and local level

During the summer of 2003, a survey was conducted of public health work in the municipalities with the aid of a questionnaire (82). The study indicated that structures for public health were being built in the municipalities. With the new national public health policy objectives the concept has been broadened and an increasing number of sectors are becoming involved. This is a development that previously took place within other policy areas, such as environmental policy, where integration with other sectors has been the key. A success factor for the future of public health policy will constitute greater integration of public health issues in all policy areas.

In general, it can be concluded that more municipalities have a more comprehensive organisation for public health today than in 1995 when the previous survey was conducted. Primarily, the proportion of municipalities with overall action plans and public health councils has increased. It is often the case, however, that there is no overarching plan for public health in municipalities and county councils. An increasing number of public health councils come under the auspices of municipalities rather than county councils. Nevertheless, political representatives from the county

councils in the public health councils are increasing and county councils are more often involved in funding public health coordination services.

Of the 144 municipalities (out of a total of 290) that have public health action plans, 62 per cent also have specific programmes associated with the plan. Most programmes (54) are found within objective domain 11 (alcohol, illicit drugs, tobacco and gambling). The second most common programme was in objective domain 5 (environment) and objective domain 3 (children) with 44 programmes. None of the municipalities reported that they had any programmes in objective domain 6 (health and medical care). Twenty six municipalities reported having programmes for physical activity while only 13 had programmes for healthy dietary habits. Of the larger cities only Malmö had a programme linked to the overall action plan/policy.

Perspectives to be considered in the assignment

A national action plan for healthy dietary habits and increased physical activity is an important step in the implementation of Swedish public health policy and the fulfilment of the general public health objective ‘to create societal conditions for good health, on equal terms, for the entire population’ (85). The objective demonstrates the link between societal conditions which can be influenced by political decisions, and health trends in the population. According to the public health policy, national agencies conducting activities influencing public health should also assess the impacts on public health.

One key area is the child’s perspective, i.e. taking into account the special needs of children. An important policy document in this context is the UN Convention on the Rights of the Child (83). The gender perspective should be examined to highlight how different measures affect men and women, boys and girls, and how measures can lead to greater gender equality in health. A socio-economic perspective implies that social inequalities should be observed and acted upon with the objective of achieving equality in health between groups with varying income levels and education. An ethnic and cultural perspective means striving to eliminate health inequalities between different cultural and ethnic groups in the population.

The task also involves the proposed measures contributing to the government’s work towards sustainable development. Sustainable development is defined as development that meets current needs without adversely affecting the opportunities of future generations. An action plan for healthy dietary habits and increased physical activity should therefore be designed to contribute to positive progress with regard to all three sustainability perspectives. Ecological sustainability has been made more concrete by the Swedish Parliament’s adoption of fifteen national environmental quality objectives (84). Social/cultural sustainability has been spelled out in the Public Health Objectives Bill (85), see Figure 4.

Increased physical activity and healthy dietary habits contribute to economic sustainability through reduced levels on non-communicable diseases which implies lower medical and pharmaceutical costs as well as reduced loss of productivity. Increased active transport (walking and cycling) can also contribute to reducing

environmental pollution and the costs this entails. In the recently published report ‘Sustainable vices. Consumption for a brighter future’ (Official Government Report 2004:119) dietary habits are included from a sustainability perspective. The report presents ‘First step food’ (86) as a model for work to promote sustainable food consumption. Calculations indicate that sustainable food consumption need not be associated with higher food costs. The consumer can reduce consumption of foods such as soft drinks, sweets, crisps, cakes and biscuits, ice cream and alcoholic drinks and thereby save a lot of money. It is estimated that 42 per cent of food costs (around EUR 2,100 per person per year) are spent on these types of food (87). If this sort of food were eliminated from food purchases, a saving would be made of an average of EUR 900 per person per year.

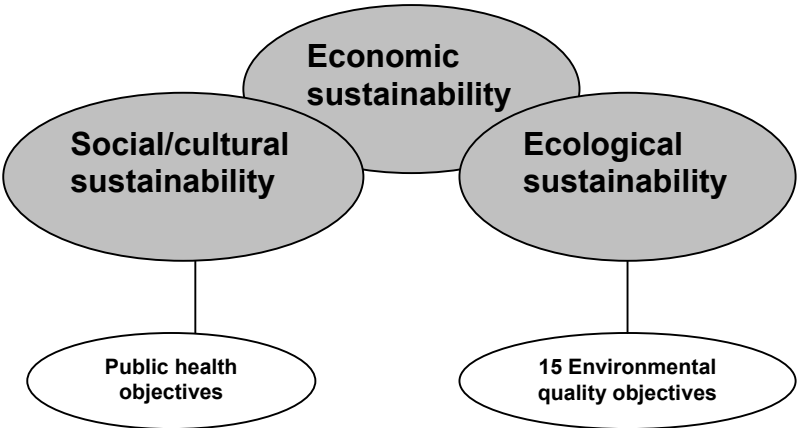


Figure 4. The link between different dimensions of sustainable development, objectives for public health and environmental quality objectives. The objective domain ‘Sound and safe environments and products’ among the public health objectives overlaps with environmental quality objectives but focuses exclusively on health.

Health economics and obesity

Two related but completely different health economic issues are of considerable importance, not least in the field of obesity. These are, firstly, how to achieve the best health or greatest reduction of disease for the money invested and, secondly, how great the costs are for a disease or risk factor such as, for instance, obesity, alcohol or smoking. Cost of illness studies of obesity are interesting since they measure the extent of the problem and can be used as an argument for preventive measures and more research into the area. Such studies should not, however, be interpreted as measuring what can potentially be gained by distributing more money to a certain area since the economic gains depend partly on whether there are efficient methods for prevention or

treatment, and partly whether it is feasible to eliminate the disease completely. Cost of illness studies therefore provide no answer to the question of how resources should be distributed in society. This question is dealt with by health economists in cost-effectiveness analyses. Below is a brief description of the methods of analysis and the research within the field of obesity.

Cost of illness studies include all the relevant costs, in this case direct costs arising from obesity (such as medical costs) and indirect costs in terms of loss of production. To calculate the direct and indirect costs, we have to know how many people suffer from obesity, what the health impacts of obesity are, how much healthcare is consumed, and what the extent of sick leave, disability pension or reduced lifespan is. We also have to be able to calculate the value of lost production due to sick leave, premature retirement or premature death. There are three different methods used to evaluate life: human capital, 'willingness-to-pay' and the friction cost method (88).

Obesity can be viewed as a disease in itself or as a risk factor for other illnesses. In the following, obesity is seen as a risk factor. Attributable fraction is an important concept in cost analyses. It refers to the share of a disease that can be attributed to a specific factor such as obesity. To be able to measure the cost of illness of obesity, we need to be able to separate the fraction caused by obesity from the other causative factors of a particular disease. An attributable fraction of 1 means that obesity has exclusively caused the disease, a fraction of 0, on the other hand, means there is no connection between the disease and obesity. If knowledge about attributable fractions is lacking, the cost calculation will be inaccurate.

In 2002 the Swedish Council on Technology Advancement in Healthcare (SBU) conducted a systematic literature review including the costs of obesity and obesity-related diseases (8). Only 22 articles were identified as being relevant. Among these were several from the United States, Europe, Canada and New Zealand, but none from Sweden. SBU assessed that the direct costs of obesity-related diseases is around 2 per cent of the total cost of health care, i.e. about EUR 320 million at that time. SBU pointed out that the scientific basis for assessment of indirect costs is limited and that methods should be developed. A Swedish study has estimated the indirect costs for loss of production due to sick leave and premature retirement for people with obesity ($BMI \geq 28$) (89). The results indicated that production losses for sick leave and premature retirement as a result of overweight and obesity for women in 1988 were around EUR 380 million per year which represents the equivalent of about 10 per cent of the total indirect costs for sick leave and premature retirement for women during that year. In another study, it was found that the cost of medication was 77 per cent higher for people with obesity (90). In a newly published report from the Institute for Health Economics in Lund, it is estimated that the direct medical costs attributable to overweight and obesity are around EUR 320 million (91). Costs attributable to obesity other than those for medical care, are not included in the calculations, nor are the total costs to society such as for sick leave, premature retirement and production loss.

The report also describes in different scenarios likely trends in overweight and obesity and how this might influence future medical costs. It is estimated that around 60 per cent of people living in Sweden could be overweight or obese in 2030 if the prevalence of obesity and overweight increases at the same rate as during the 1990s.

As a result of the increase in the number of people with overweight or obesity, direct medical costs for obesity are estimated to rise by 120 per cent between 2003 and 2030.

In order to decide which preventive measures should be used, cost-effectiveness analyses are needed which examine the link between the effect that can be expected of a certain measure and the costs of achieving this effect. Such analyses require the existence of scientific evidence for the effects of treatment or a preventive measure aimed at reducing the prevalence of obesity.

There are different ways of evaluating the health economics of different measures. All methods take costs into consideration but they differ in terms of how health effects are measured. The simplest form of economic evaluation can be conducted if two measures have identical health effects. In this case the alternative should be chosen which has lowest cost and the analysis is generally referred to as a cost-minimisation analysis.

Most commonly, however, both costs and health effects differ between measures. If one alternative has both a lower cost and the health effects are greater, the choice is obvious. When both costs and health effects are greater for alternative measures, the increased cost should be considered in relation to the greater health effect. This can be done in a cost-effectiveness analysis calculating the cost per unit of the health effect. One example of an effect indicator is life years gained, which is the increase in the expected remaining lifespan. One weakness of this indicator is that no consideration is taken to quality of life. To obtain an all-encompassing indicator, consideration has to be taken to effects on both lifespan and on health status. Such a indicator is known as a quality-adjusted life-years (QALYs). QALYs are constructed by weighting different degrees of health status on a continuous scale between 0 (dead) and 1 (full health) (88). A QALY can be interpreted as a year of full health. Cost-effectiveness analyses using QALYs is the method of choice by the majority of researchers in the field (88, 92). A current report from the OECD summarises what is known about the cost effectiveness of, firstly, a series of different interventions aimed at preventing or treating obesity and type 2 diabetes and, secondly, studies examining the extent to which subsidies and taxes on different kinds of foods can change the consumption behaviour of individuals (93). In the report, an account is presented of studies examining lifestyle interventions such as nutritional advice and physical activity, and medical treatments. The results indicate that there is as yet very little scientific evidence concerning the effects of subsidies and tax policies which is quite simply because economic instruments have not been tested to any great extent. There is more evidence both regarding efficiency and cost effectiveness of lifestyle interventions and that these are, not surprisingly, more cost effective than medication for primary prevention of type 2 diabetes. On the other hand, there is some support to suggest that treatment with medication is more cost effective than lifestyle interventions for secondary prevention and strategies for the individual who has already been diagnosed with diabetes.

To be able to decide which measures should be implemented of those proposed in this report, the value of the various measures should be assessed theoretically in relation to what they cost. In practice, measures can be introduced where the benefit is judged, with a high degree of accuracy, to be greater than the cost of the measure. Otherwise, caution is advised. Another issue is to what extent the different measures are independent of one another, in other words, if cost effectiveness is affected by another

measure already having been introduced. In this report, different possible measures have been identified and their cost has been calculated. In the next stage, the effects of the various measures should be identified, quantified and evaluated with the aim of gaining some idea of whether the benefits can be seen to clearly exceed the costs of the measure. Should implementation of measures become relevant, it is also important at an early stage to plan for following up the efficiency and cost effectiveness of the different measures.

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4 Objectives and targets

Objectives for societal measures regarding healthy dietary habits and increased physical activity

1. Society should be organised in such way as to make it easy for all groups in the population to have healthy dietary habits.
2. Society should be organised in such a way as to provide the conditions for increased physical activity for all groups in the population.

Targets for healthy dietary habits

1. Increase consumption of fruit and vegetables.
2. Increase consumption of keyhole-labelled foods.
3. Reduce consumption of food such as soft drinks, sweets, crisps, cakes and biscuits, ice cream and alcoholic drinks.

Motivations behind the targets for healthy dietary habits

The body's requirement of various nutrients and energy is the basis for nutritional recommendations. These provide advice on how to compose a diet from a nutritional point of view and how to structure mealtimes to provide the right conditions for good health. The recommendations are based on an assessment of the scientific literature available each time they are updated. The Nordic countries have had joint nutritional recommendations since 1980 known as the Nordic Nutrition Recommendations (NNR).

The latest version of these is from 2004 (1). Every time the recommendations are reviewed, a working group, comprising Nordic nutrition researchers and representatives from government authorities, scrutinises the current scientific literature in the field. A proposal is worked out which is then assessed by a broader group of researchers. The NNR are to a great extent in line with recommendations in other countries. The recommendations have been changed relatively little over the years while the scientific foundations on which they are based have been significantly strengthened. In other words, there is considerable consensus concerning what represents a desirable intake of energy and nutrients for different population groups. The recommendations are firmly grounded on solid scientific knowledge.

Swedish Nutrition Recommendations, SNR, are formulated on the basis of NNR. Since 1971, Sweden has had recommendations for diet and physical activity issued by the authorities concerned, primarily the National Board of Health and Welfare, the National Food Administration and the National Institute of Public Health. These recommendations include advice on the level of nutrients and on food as well as advice concerning the distribution of meals during the day. The National Food Administration

has recently ‘translated’ SNR to food consumption (2). This work included consideration of current Swedish dietary habits according to the latest national nutritional survey (3). A man and a woman with low physical activity represented typical subjects. A diet was compiled to fulfil all the Swedish nutrition recommendations with as little departure as possible from current average dietary habits. Meals are distributed during the day into breakfast, lunch and supper with some snacks between.

This work has been able to identify and quantify the most important changes in dietary habits, from a public health perspective, which would lead to a reduced risk of overweight, cardio-vascular disease, diabetes, certain types of cancer and dental caries.

These are:

- Double consumption of fruit and vegetables,
- Double consumption of bread, mainly wholemeal
- Change to liquid fats and oils when cooking
- Choose keyhole-labelled dairy and meat products
- Double consumption of fish
- Halve the intake of salt
- Halve consumption of soft drinks, sweets, crisps, cakes and biscuits, ice cream and alcoholic drinks.

These changes in food consumption would lead to:

- Reduced intake of energy
- Reduced intake of saturated fat
- Reduced intake of fat
- Reduced intake of salt
- Reduced intake of refined sugar
- Increased intake of unsaturated fat
- Increased intake of dietary fibre

Almost identical nutritional recommendations have been issued in other countries (4-6) on the basis of international nutritional studies (7) and by WHO (8).

The objectives for healthy dietary habits will be followed up in dietary surveys described in Measure 44 in the Food Policy section.

What do the targets entail?

Fruit and vegetables: According to the Swedish recommendations for fruit and vegetables, everyone over 10 years of age should eat at least 0.5 kilos a day (equivalent to about 2-3 pieces of fruit and 2 portions of vegetables) and children between 4 and 10 years should eat around 400 grams a day. Increased consumption of *keyhole-labelled food* necessitates both the replacement of certain foodstuffs by keyhole alternatives (such as cheese and meat products) and an increase in the consumption of other foodstuffs (such as fish, fruit and vegetables). All in all, this would contribute to a higher intake of dietary fibre and a reduced intake of fat, saturated fat, refined sugar and salt. The revision of the keyhole system (9) means that even low-fat and fibre-rich foods which do not contain too much salt and sugar, and entire food groups considered healthy, will be labelled. Increased consumption of keyhole-labelled food would

therefore contribute to increased consumption of wholemeal bread and fish. The keyhole is a well-known symbol making it easier for consumers to choose food in shops and restaurants. Children under 2 should eat more fat than adults. For this reason skimmed milk and low-fat margarine are not recommended for children under 2. On the other hand, small children should also limit their intake of saturated fat and therefore keyhole-labelled cheese and meat products are recommended. Nor are skimmed milk and low-fat margarine recommended for elderly people who find it difficult to maintain body weight.

Foodstuffs not included in the food circle contain a lot of energy, fat and/or sugar while at the same time provide little nutritional value. These include products such as *soft drinks, sweets, cakes and biscuits, ice cream and alcoholic drinks*. High consumption of these foods is associated with a high energy, sugar and fat intake and/or a nutritionally deficient diet (1, 7, 10-11). Many consumers find these products attractive and difficult to resist. Whilst the National Food Administration was translating the nutritional recommendations into food (2), it was seen that if a person's diet is of good quality in general then food of this type could comprise at most 15 per cent of the energy intake including alcohol which, in turn, should comprise at most 5 per cent of energy intake. This means that for most adults, no more than 200 to 300 kcal per day should come from this type of food. This is equivalent to around 50 grams of sweets, a bun or a glass of a soft drink and a handful of crisps. Today such food represent on average 25 per cent of the energy intake among adults and children (3).

Targets for physical activity

1. Increase the proportion of healthy adults who are physically active for at least 30 minutes at a moderate level or more every day, or in total at least 3.5 hours per week.
2. Increase the proportion of healthy children who are physically active for at least 60 minutes at a moderate level or more every day, or in total at least 7 hours per week.
3. Reduce the proportion of children and adults with a sedentary lifestyle.

Motivation behind the targets for physical activity – adults

Physical activity is defined as all types of movement that increases energy expenditure. Health-promoting physical activity includes all physical activity that improves health and physical capacity without causing injury or some other health risk. Total energy expenditure represents the sum of three parts: 1) The basal metabolic rate required to maintain and sustain various physiological functions and tissue generation is responsible for 60 per cent of energy consumption, 2) the thermal effects of digestion which represent around 10 per cent, 3) physical activity which, for a person with an average level of activity, represents around 30 per cent and is the most variable component of energy expenditure.

The current recommendation of at least 30 minutes of moderately (or more) intensive physical activity (such as brisk walks) preferably every day (1, 12) is based primarily on cardio-vascular health effects. The recommendations are also strongly linked to functional effects such as the reduction of blood pressure, blood sugar levels and improved heart function. The recommended level of activity facilitates weight control, especially in people with a relatively sedentary lifestyle. With an increasing

energy intake, 45 to 60 minutes per day at moderate level or more is required if weight is to remain stable (13-14). Research indicates that people who have been overweight or obese but who have lost weight may need 60 to 90 minutes of physical activity per day to sustain energy balance (14).

Even though higher volumes of physical activity than 30 minutes per day can provide greater health benefits, the objectives reflect high general health effects and better achievability among the population while keeping the risk of injury low. The objectives are in line with the new Nordic Nutrition Recommendations (1) and international recommendations published by expert groups (15-17).

The recommendation of at least 30 minutes of health-promoting physical activity each day also applies to elderly people. The elderly should focus especially on everyday physical activities that can improve functional capacity in the form of muscle strength, coordination and balance. A sedentary lifestyle is characterised by little or no daily physical activity or exercise and low volumes of physical activity in general (16). This lifestyle would include, for instance, activities such as office work without physical exertion during the daytime, motorised transport between work and home, TV watching and physically passive recreational activities.

A sedentary lifestyle is an increasing problem that contributes to the development of cardio-vascular disease, type 2 diabetes, high blood pressure, colon and breast cancer, osteoporosis, overweight and obesity, high serum cholesterol, stroke and several mental problems such as anxiety and non-clinical depression (16-17). Both obesity and a sedentary lifestyle increase the risk of type 2 diabetes and cardio-vascular diseases. WHO (18) has identified physical inactivity as one of the 10 leading global causes of death with almost 2 million deaths annually in the west and it is therefore very important from a public health perspective to reduce the number of people leading such a lifestyle.

The targets for physical activity among adults will be followed up with nationally representative questionnaires conducted by the National Institute of Public Health.

Motivation behind the targets for physical activity – children

There are very strong arguments in favour of encouraging children to be as active as possible including maintaining energy balance, well-being, bone health and agility. At the same time, physical activity is an important tool for play and recreation, acquisition of motor and social skills and the development of creativity (19). Recommendations advise children to be physically active for about 60 minutes every day at moderately intensive levels or more, of which two sessions a week should comprise activities to strengthen the bones and enhance muscular strength and agility (1, 20-21).

The recommended volume of physical activity can be achieved either by performing all the required activities during a single session or by accumulated bouts during the course of the day (such as 3x10 minutes for adults or 6 x 10 minutes for children) (22).

In order to follow up physical activity among children, indicators are needed for physical activity as described in Measure 12 in the Public Health Policy section.

Targets for body weight

1. Prevent weight gain from normal to overweight in adults.
2. Promote normal weight gain among children.

Motivation behind the targets

Preventive action aims to ensure that fewer people suffer from overweight, especially children. A high BMI is a strong risk factor for a number of diseases but even weight gain in itself heightens the risk of diabetes, high blood pressure and cardio-vascular disease (23). The combination of elevated BMI along with weight gain heightens a large number of risk factors. Weight increase among adults consists largely of adipose tissue which often accumulates around the abdomen. This is the most health damaging type of adipose tissue. To encourage weight stabilisation rather than weight loss could also help avoid too much focus on unhealthy dieting and reduce the stigmatisation of overweight people.

For children who are still growing and who put on weight for this reason, it is important not to deviate from established weight curves. Children with moderate overweight should not attempt to lose weight. Their BMI can be normalised if their weight remains stable while they grow taller.

The target for body weight should, for adults, be followed up by Statistics Sweden (ULF surveys). Children's height and weight should be registered to facilitate follow-up of the target for body weight as described in Measures 11 and 12 in the Public Health Policy section of this report.

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5 Strategies to achieve the objectives

Changes in society have significantly affected dietary habits and the degree of physical activity among the population. To improve dietary habits and increase physical activity, measures should primarily be directed at the level in society where conditions for healthy dietary habits and physical activity are created thus making it easier to adopt a healthy lifestyle. It is especially important for all actors to influence the supply, availability and/or demand for food and physical activity. Experience has shown that people make healthy choices significantly more often if the surrounding environment is supportive (1).

The WHO Global Strategy on Diet, Physical Activity and Health

In its Global Strategy for Diet, Physical Activity and Health adopted by the World Health Assembly in May 2004, WHO emphasises that governments have a decisive impact on enduring changes in public health (2). A strategy based on creating a supportive environment and then promoting healthy choices has the greatest potential for sustainable behavioural changes. WHO stresses that this strategy should be based on the best scientific research and evidence, be multisectoral and comprehensive, have a long-term perspective and be multidisciplinary and participatory. The strategy should take into account the complex interaction between personal choice, social norms, economic and environmental factors. WHO also underlines the importance of integrated measures over several societal levels and cooperation between actors from the public, commercial and voluntary sectors to improve public health. Socially-oriented measures are needed to reach the most vulnerable groups in society. WHO recommends the use of government policy instruments such as:

- Information, education, communication
- Taxes and subsidies
- Regulation and legislation
- Direct financial support to selected measures
- Development of the knowledge base, through e.g. research and enquiries.

A model for public health work

Swedish public health policy and the WHO Global Strategy are based on international public health research which has shown that health promotion directed exclusively towards the individual without affecting the societal conditions for health, does not achieve the desired effects.

A model for health promotion that has evolved during the past decades is founded on behavioural and social sciences which emphasise the significance of individual

factors in combination with the social and physical environment the socio-ecological model (3-6). In this model, measures conducted by public actors at national, regional and local levels are integrated with the measures taken at local level known as multi-level interventions.

The evaluation of this approach is, however, complex and research in the field is limited. Due to the rapid increase in obesity, behavioural scientists from all over the world recommend multi-level interventions in tandem with the development of evaluation methods to avoid having to wait for the findings from randomised controlled studies (6-14). For such comprehensive social change, however, it is not feasible to have a control group. The effects have to be monitored in the form of systematically collected data on dietary habits, physical activity and body weight in different population groups. It is also difficult to evaluate which isolated measures have had the greatest impact when a battery of measures are employed (15).

Experience from other fields such as tobacco and HIV/AIDS provide both a basis and support for the above recommendations for multi-level interventions. From the tobacco field, the combination of a series of measures simultaneously at different levels in society is seen as having contributed substantially to the success of work to reduce smoking (16). In this instance, a combination of education measures, regulatory and financial measures were used. Thailand is one of the few countries in the world which has succeeded in preventing the spread of HIV/AIDS. In this case, political leadership and decisive action from the national down to the local level were crucial (17). The significance of having reliable, publicly available data on the occurrence of HIV/AIDS has also been indicated as significant along with the ability to track changes. When data is developed and made available it is difficult for decision-makers, and also for commercial interests, organisations and individuals, not to take action. Once again, the weight of the collective effect of a number of different measures is underlined as is the difficulty of pointing to isolated measures as success factors.

Strategy for achieving healthy dietary habits and increased physical activity

Based on public health policy, the use of WHO's Global Strategy and public health research, a strategy for how to achieve the objectives for healthy dietary habits, increased physical activity and body weight is proposed:

- Measures should be directed towards both society and the individual.
- Measures should be long-term.
- Resources should be made available for implementation.
- Measures should be coordinated at national, regional and local level.
- Measures must build on partnerships between the public, private and nonprofit sectors.
- Measures at local level are within policy areas impacting most on societal conditions for dietary habits and physical activity.

Implementation of measures should consider local conditions and be based on the participation of the population.

- Evaluation and follow-up should be continually integrated in the work.

Priorities

Measures promoting the creation of supportive environments for healthy dietary habits and increased physical activity for children and young people should be given priority during the initial stage. Efforts to coordinate and follow-up measures and objectives should also be prioritised in order to implement a plan of action.

Changes in society have significantly affected dietary habits and the degree of physical activity among the population. To improve dietary habits and increase physical activity, measures should primarily be directed at the level in society where conditions for healthy dietary habits and physical activity are created thus making it easier to adopt a healthy lifestyle. It is especially important for all actors to influence the supply, availability and/or demand for food and physical activity. Experience has shown that people make healthy choices significantly more often if the surrounding environment is supportive (1).

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6 Measures and motivations

This chapter presents measures arranged in accordance with the 13 policy areas that are judged to have the greatest impact on the conditions for healthy dietary habits and physical activity in society. The relevant authorities can be found under the policy area to which they belong. Measures aimed at county councils, municipalities or organisations, are arranged under the policy area to which they most naturally belong. Within each policy area, there are already well-defined objectives and targets some of which support the promotion of healthy dietary habits and physical activity. We propose that only two minor adjustments be made to existing objectives under consumer and food policy respectively.

A lead actor has been appointed for each measure. The measure is often to be carried out in cooperation or in consultation with other stipulated actors. After each measure has been described, the motivation behind it is explained.

The costs to central government are stipulated when the measure necessitates government funding over and above the relevant authority's ordinary budget. Neither costs estimated to be less than SEK 500,000 nor the costs to municipalities and county councils are indicated. Several of the measures, where the municipalities or county councils are appointed the lead actors, need additional resources to be carried out. Whether these resources are provided in the form of government grants to the municipalities and county councils or whether they can be provided within the existing budgetary frameworks must be the subject of discussion between the Government and the stakeholders concerned. Several measures on the local and regional level also need further analysis so that their cost can be estimated. Too little time was available to be able to make any detailed cost estimates.

Working life policy

The aim of working life policy is to ensure good employment conditions that provide opportunities for development at work for both men and women. Legislation helps to create healthy, secure and safe environments for employment that also offer scope for development. A positive working environment is one that prevents ill-health and accidents, is adapted to the different physical and psychological conditions of the people in it while also promoting individual development.

The workplace is a key setting in which improvements in health can be promoted and health inequalities diminished (1). Since the majority of adults work, the workplace is a setting in which many people can be reached regardless of sex, age, social group and ethnicity. Work-related ill health and long-term sick leave have accelerated in recent years. It is important to highlight preventive efforts in working life and their significance for public health. The workplace can provide social support and reinforcement for changes in attitudes. It is one of the few settings that have succeeded in attracting men to preventive healthcare (2-4). For adults, the workplace could have the same potential as schools have for children in exerting an equalising effect on different socio-economic groups regarding dietary habits and physical activity (1).

MEASURE 1

Criteria should be developed for the certification of health-promoting workplaces including policies for food and physical activity.

Actors: National Institute for Working Life and the Swedish Work Environment Authority in cooperation with the National Food Administration and the National Institute of Public Health.

MOTIVATION

The Luxembourg Declaration on Workplace Health Promotion in the European Union (5) states that health promotion at the workplace should be a joint undertaking by employers, employees and society to improve health and well-being for people in working life. This can be achieved through a combination of improvements in work organisation and work environment, promotion of active participation and encouragement of individual development. The Institute for Working Life South is a national Swedish focal point of a Swedish network and forum for health-promoting workplaces.

The concept of health-promoting workplaces can be developed further by creating criteria for certification. The concept incorporates the creation of personnel policy actively integrating issues associated with health promotion measures. The development of criteria for healthy dietary habits and increased physical activity at work should, against the background of rapidly growing prevalence of obesity among the population, be a relevant priority in the present circumstances. 'Guidelines for food at workplaces' could perform a guiding function in this work (see Measure 47 under *Food policy*).

The literature indicates that health promotion programmes with a range of different activities can lead to benefits for employees and employers, such as better corporate

image, better relations and contact with the local community, increased work satisfaction, better quality and quantity of production, fewer sick days, reduced sick leave and other forms of absence, increased ability to cope with stress, fewer conflicts at work and lower costs for sickness (6-12).

A systematic review of studies on the effectiveness of programmes promoting health in the workplace, concluded that health-promoting programmes using a general strategy can be both effective and also cost-effective (13). Individual health risk assessments and needs analyses should be included in the interventions. Physical activity at the workplace is generally considered to have proven effects in improving fitness among employees and preventing back and neck pain. There is limited evidence that workplace interventions using diet counselling has a significant on blood lipids, blood pressure and fatigue. Individual counselling to people with a high risk of developing cardio-vascular disease can be effective, however, in reducing the risk. Intervention in the workplace to reduce body weight is effective in the short term but there is, as yet, no evidence of long-term effects. Finally, there is no strong evidence that high-intensive programmes are more effective than low-intensive ones. Three factors appear to be decisive: individual risk reduction for high-risk individuals, health risk assessments (health profiles) conducted prior to the start of intervention, and consideration of the interests of the employee.

The National Institute for Working Life concludes in a report that one in four men and women have a physical capacity that is less than their work demands (14). According to the Institute, the introduction of compulsory exercise during working hours should become a general strategy for employers since regular physical activity can often improve the fitness of most employees considerably. There are a number of experiences of health promotion efforts in the workplace.

These measures included the opportunity to take part in different forms of physical activity during paid working hours, encouragement to use active transport (walking or cycling) to and from work, and instruction in physical activity and health for different categories of personnel such as, for instance, personnel managers and health and safety representatives.

Korpen, (www.korpen.se) a voluntary organisation promoting exercise for all, pioneered the concept of awarding health diplomas in 2001. So far, 800 companies with a total of 2,000 employees have been involved in health diploma projects. Surveys conducted by Korpen indicate that up to 90 per cent of the workplaces awarded a health diploma feel that the diploma has helped them structure their health work. Around 85 per cent have experienced increased interest in health promotion within their organisations. Over 80 per cent said they now have more physical activities in their workplace as a result of the health diploma project (15).

The Swedish Trade Union Confederation (LO) and Korpen are working on a joint project through health and safety representatives to start up health promotion projects at workplaces. The union-elected health and safety representatives are key persons. The most important function of the union is to provide support to members, to negotiate agreements, combat discrimination and work for a safe and secure working environment. LO and Korpen's joint idea supports this work through opportunities to develop health promotion in the workplace (16).

MEASURE 2

Proposals should be developed for how knowledge and skills on food and physical activity can be included as a recurring feature in the reemployment policy programme.

Actor: Swedish National Labour Market Administration.

MOTIVATION

The mission of the National Labour Market Administration (AMS) can be found in the ordinance (SFS 2000:628). The activities include e.g. employment service, careers guidance, working life rehabilitation, certain employment promotion measures and labour market programmes.

AMS states that labour market policy programmes in many cases can combat social exclusion, provide structure in daily life and increase social contacts which are positive for the individual (17). The authority also estimates that there is scope for the introduction of physical activity within the labour market policy programmes aimed at job seekers. Some health-related activities have been incorporated in the framework for 'activity guarantees'.

The latest national public health survey demonstrated that it was more common for the economically disadvantaged to have a more unhealthy lifestyle than those who were not economically disadvantaged (18). An important target group for health promotion could be reached by offering courses focusing on healthy dietary habits and increased physical activity within the framework for labour market policy programmes. In this way, those who are unemployed would also have access to health promotion activities that many workplaces offer today. It is especially important that the effects are evaluated and assessed for cost-effectiveness.

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Housing policy

Housing policy is of significance to public health in general and to physical activity in particular since, with the appropriate planning, environments can be created that support a physically active lifestyle. Housing policy objectives relevant to physical activity include physical planning contributing to sustainable development and a good living environment, and a favourable environment for children and young people to grow up in. The national strategy for sustainable development maintains that physical planning can promote socially and economically sustainable development providing conditions for supportive social environments with equal and worthy living conditions for everyone, and that an integrated policy for sustainable spatial planning is needed to meet the ongoing process of urbanisation in Sweden (1). Sustainable spatial planning includes people's needs for recreation in an attractive environment, which is a high priority issue on the international and European agendas for sustainable development.

Measure 3

The intersectoral group of agencies working on 'Landscape Appreciation Values' should receive continued support. Aspects of security and safety should be particularly considered to improve the prerequisites for physical activity for all.

Actors: The National Board of Housing, Building and Planning in cooperation with the National Institute of Public Health, the Swedish University of Agricultural Sciences, the National Heritage Board, the National Board of Forestry, the National Board of Health and Welfare, the Swedish Environmental Protection Agency, The Swedish Association of Municipalities and the Swedish Federation of County Councils.

Motivation

'Landscape Appreciation Values' is a cooperative project initiated and financed by the National Board of Housing, Building and Planning, The Swedish Environmental Protection Agency, the National Heritage Board, the Forestry Board, the National Board of Health and Welfare and the National Institute of Public Health. The project aims to develop indicators for use in following up and evaluating public health and environmental objectives. The indicators will provide an idea of the quality and access to outdoor environments for various kinds of physical activities, recreation and outdoor pursuits as expressed by adults. In the longer term, indicators should also be complemented with preferences expressed by children.

The main objectives of the project include:

- Development of relevant descriptive models for landscape appreciation values, survey the need for material to facilitate use of the models and to indicate how access to information can be assured. The model should provide an integrated part of the general system for follow-up, planning and decision-making concerning environmental objectives and public health.
- Presentation of a number of indicators fulfilling given quality criteria. Indicators will be used to follow-up and to evaluate how the work towards achievement of public

health and environmental objectives is progressing. They should also be usable as tools for making assessments of the value of an area from a recreational point of view during the planning process. Indicators should primarily be used at the national level but may also provide support in regional and local planning.

The work of the group is relevant for identifying determinants of physical activity such as perceived aesthetically pleasing environments (2-4). Both actual and perceived access to places conducive to physical activity and the fact that these facilities are experienced as positive, are associated with regular physical activity (5), while dissatisfaction with facilities increase the risk of a sedentary lifestyle (6). A high sense of security and safety in housing areas has a positive effect on physical activity (2-3,7), while residents in areas with low sense of security and safety are less mobile regardless of their level of income (8). The identification and review of these environmental factors and the definition of indicators is of considerable importance for the inclusion of health aspects in physical planning. Support should also be provided for the development of information and statistics concerning national indicators on access to appreciation values.

Measure 4

An intersectoral development project on the importance of the housing environment for physical activity among children and adults should be initiated.

Actors: The National Board of Housing, Building and Planning in cooperation with the National Institute of Public Health

Motivation

It is now scientifically documented that the design and quality of the local environment affects people's physical activity and different dimensions of health (9-10). More detailed and specific knowledge is needed however to identify the determinants and on the basis of this knowledge, plan more effective interventions in the residential environment. One example is the need to examine which factors promote increased physical activity in residential areas for children, adults and the elderly. Another example, of the need for considerable intersectoral development is to examine how access to safe, secure and aesthetically pleasing staircases and steps in public premises could be increased and their use encouraged. There are several suitable funders for this research such as the Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas).

Today urban developments are increasingly dense which often has negative consequences for green areas and people's opportunities to enjoy physical activities and outdoor pursuits. Grahn (11) expresses concern about this trend and proposes that qualities such as light, air and greenery are at risk of being overlooked in favour of increasingly dense building. Opportunities for children to move freely and safely in the vicinity of their homes has considerable significance for physical activity and is largely dictated by the design of play and outdoor environments in residential areas and around nurseries and schools. Positive opportunities to move in the local area for children and

young people include parks, playgrounds, larger green areas and residential spaces with low traffic volumes. Children are generally more physically active outdoors than indoors (12) and increased time spent outdoors for children is therefore a high priority. Studies have discovered a link between children's activity levels and access to green areas and the number of playgrounds in the vicinity (13).

Time spent outdoors for children in residential areas has largely been replaced by the pre-school playground. During the first years at school, the school and after-school care represent an important environment. Specially designed and demarcated play areas like those at pre-school and school seem to have become more important for outdoor play in general (14). Today the collective children's culture, with children playing together, has been weakened and children have become more dependent on adults even with regard to more personal relationships such as friendship and leisure activities. Mårtensson summarises the limitations of children's scope for freedom of movement and outdoor play in a number of factors including demography, the pressurised schedules of families with children, the traffic environment and shifts in values (14).

Adults are also affected by the distance to green areas as a deciding factor relevant to physical activity. Green areas in residential areas should be situated in the immediate vicinity of residential courtyards and gardens and within a five-minute walk from home, which for the elderly and for children represents a 200-metre radius from the home. Research indicates that more or less all residents regularly used an attractive park if it was within 200 metres of where they live (15-16).

There is considerable interest internationally for the formation of new ideas regarding the development of urban and residential environments. In Sweden, the National Committee for Agenda 21 and Habitat has proposed greater investment in sustainable urban development (1). Agenda 21 is the action plan for sustainable development adopted at the UN Conference on the Environment and Development in Rio de Janeiro in 1992. Habitat is the name of two UN conferences attempting to apply Agenda 21 to cities and urban areas. The task of the National Committee has been to establish, coordinate and develop the work of Agenda 21 and Habitat in Sweden (17). At the fourth WHO Ministerial Conference on Environment and Health in Budapest in June 2004 (18), Sweden undertook to prevent and significantly reduce health consequences of accidents and injuries by promoting safe and supportive environments for all children. This includes the prevention of overweight and obesity by implementing the WHO global strategy for diet, physical activity and health (19).

Measure 5

The Government's Council for Architecture, Form and Design should develop ideas relating to how architecture can contribute to physical activity, e.g. developing methods to encourage people to regularly use the stairs.

Actor: Government

Motivation

Architecture, form and design can play an important role in increasing physical activity since people's everyday habits are affected by the environment and surroundings. Stairs are one example of such a resource to increase everyday physical activity and have the potential to reach a large part of Sweden's population, but stairs are often inaccessible and are often viewed simply as 'emergency exits'. Regularly taking the stairs can lead to significant health benefits. Research indicates that people who use the stairs regularly have better health than those who choose the lift, including better fitness, strength and weight loss, lower cholesterol and lower risk of osteoporosis (20-21). Furthermore, fewer deaths are reported among individuals who regularly use the stairs compared to regular users of escalators and lifts, and more deaths are reported for individuals who claim they have difficulty using the stairs (22). The potential of promoting physical activity by taking the stairs is considerable since most people automatically use the escalator or lift.

There is a need for highlighting the stairs in buildings in various ways as a tool for increased physical activity. A large number of studies demonstrate for instance that environmental prompts by the stairs (such as 'keep healthy, save time, take the stairs') can significantly increase use of the stairs (23). Environmental prompts in connection with stairs were found in a systematic review article to be one of the most effective interventions tested to increase physical activity with an increase of stair use by 50-300 per cent (23-24). Other methods tested included creating more pleasant stair cases with better lighting, lighter colours, art on the walls, music and improved accessibility and degree of security experienced (23-25). The systematic review on methods to promote physical activity by Kahn et al (24) recommended the practical application of such methods.

Building regulations issued by the National Board of Housing, Building and Planning (26) provide a list of recommendations and technical and security regulations for stairs such as the gradient of the stair, length and that the area is designed to limit the risk of children having accidents. On the other hand, there are no recommendations or regulations concerning the location or design of staircases which could be valuable in encouraging everyday physical activity, especially in buildings equipped with escalators or lifts. The Government is pursuing an active policy for architecture, form and design.

The Government's action plan 'Future forms' (27) led to a number of objectives for the promotion of good architecture, form and design along with the introduction of what are known as the aesthetic paragraphs in the planning and building legislation, the legislation governing roads and the construction of railways. In 2004 the Government appointed a council for architecture, form and design under the auspices of the Ministry of Culture, with the primary task of working to assure achievement of the objectives

outlined in the Future forms action plan. The council is also representing the Ministry of Culture as an expert group for the Year of Design 2005 and therefore the council is in a good position to develop ideas for how accessibility to and the design and use of stairs could be encouraged. The Council for Architecture, Form and Design could, for example, initiate a competition to create the ‘best staircase’.

Measure 6

Government should introduce a specific programme and devote resources to make an inventory of, refurbish and renovate school and pre-school playgrounds so that they inspire play, movement, sport and outdoor education.

Actor: Government

Cost: EUR 5,3 million per year

Motivation

The outdoor environment represents an important part of a child’s conditions for growth and development and has a significant role as a supportive environment for physical activity, acquisition of learning, social interaction and health. Research demonstrates that the design of school playgrounds is very important for the level of physical activity among children (28-29). The Work Environment Act provides guidelines for school playgrounds and stipulates that the playground is an important break-time area for everyone in the school, but especially for the younger children (the Swedish Work Environment Authority, www.av.se). The guidelines are open to interpretation however, which in many cases leads to municipalities failing to maintain school playgrounds due to lack of financial resources. School and pre-school playgrounds have so far fallen between two actors both at national and local levels and the outdoor play of school children is still seen as a supervision problem rather than a pedagogical issue worth taking seriously (30).

The Planning and Building Act (31), Chapter 2, Section 4, states that ‘Within or in the close vicinity of built-up areas there should be suitable spaces for play, exercise and other outdoor activities’. The Act also states (Chapter 3, Section 15) that: ‘If areas are used for building which include one or more residential buildings or premises for childcare, schools or other comparative activities, there should be sufficiently large free spaces available for play and outdoor activities within the area or in the close vicinity’. The demands that can be placed on spaces intended for play, exercise and outdoor activities, or on the free spaces in close proximity to housing, pre-schools and schools are not described in the act. On the other hand, there is considerable knowledge about play and what encourages play in the physical environment (14, 23).

A national programme is needed for municipalities to address the challenge of renovating school playgrounds around the country so that they live up to the intentions of the Work Environment Act. Since the Education Act does not currently place any demands on an appropriately adapted outdoor environment, schools can be set up in environments which are inadequate or directly unsuitable from the point of view of children’s and young people’s opportunities for play and physical activity. It is therefore

important that the issue is taken seriously and that all pre-schools and schools, including private schools, are affected. Both research and best practice examples are available of how school playgrounds can be made more conducive to activity and play.

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Public health policy

The overarching aim of public health policy is to create societal conditions for good health on equal terms for the entire population. Within the framework for this objective, the National Institute of Public Health has been commissioned to develop a system for the follow-up and evaluation of indicators for public health, public health measures and their effects on health determinants. Furthermore, knowledge should be increased concerning the application of effective evidence-based methods for health promotion and the ways in which it can be made more efficient and better coordinated in municipalities, county councils and other relevant actors.

Public health policy can create the necessary conditions that other actors need to allow them to conduct their tasks. There is a considerable need for structures and resources for the coordination of health promotion concerning healthy dietary habits and increased physical activity. An important task is the continuous collection of data which will make possible the follow-up of various measures and, not least, the changes within different target groups regarding dietary habits, physical activity and body weight (see also Measures 42 and 44 in the section *Food policy*). Methods for health impact assessment have to be developed and specially adapted to ensure that developments within all social sectors are beneficial to public health in general and dietary habits and physical activity in particular.

Measure 7

A national committee should be created to coordinate, implement and monitor the forthcoming action plan for healthy dietary habits and increased physical activity focusing on obesity. In addition to the relevant agencies, scientists and NGOs should be included. The group should report annually to the National Public Health Executive Committee.

Actors: The National Institute of Public Health in cooperation with the National Food Administration, the Work Environment Authority, the Swedish Agency for School Improvement, the Swedish National Agency for Education, the National Board of Health and Welfare, Swedish county council and municipality association etc.

Cost: EUR 53,000 per year (one full-time post)

Motivation

One of the most important conclusions drawn by the 'National objectives and strategies for nutrition 1999-2004' (1) was that responsibility and authority should be clarified and thereby establish a clear mandate for actors at national level. This is of decisive significance for the broad implementation of the objectives set. Furthermore, sufficient resources should be assured from national level for the development of methods and competence, process management and the dissemination of information. Other important tasks include the creation of methods and establishment of routines for follow-up and evaluation, as well as to ensure that the results of the work reach the relevant actors. Finally, the significance of a continuous dialogue with the stakeholders concerned is

mentioned, for example, through the establishment of national fora in which healthy dietary habits and increased physical activity are part of ongoing discussion.

WHO states that the role of the Government is decisive in achieving enduring changes in public health (2). The Government has a primary steering and management role to play with regard to initiating and developing action plans, supervising their implementation and monitoring their long-term impact. A broad public debate and interest in policy development can make it easier to achieve a receptive response for the plan and render it more effective. Mechanisms will have to be introduced to encourage the participation of NGOs, civil society, local communities, the private sector and the media in activities related to food, physical activity and health. The Ministry for Health and Social Affairs in conjunction with other relevant ministries should reinforce cooperation between the various sectors at national, regional and local levels.

A review of several countries' national action plans suggest that the creation of efficient forms of cooperation at national level is considered of great importance. At hearings and during discussions held in the process of this assignment, the view has been expressed that a committee should coordinate/lead an interdepartmental group for the forthcoming action plan.

Dietary habits and physical activity will always be affected by many sectors and authorities. The same applies to the issue of breastfeeding. With regard to breastfeeding, the Government has decided to resolve the cooperation issue by forming a national breastfeeding committee comprising representatives for the National Board of Health and Welfare, the Swedish Consumer Agency, The National Institute of Public Health and the National Food Administration. The National Food Administration has a coordinating role. The task of the committee is to lead national efforts within the field of breastfeeding. It meets a few times each year, invites experts and representatives from various associations when necessary, arranges larger meetings and reports regularly to the Government. An equivalent committee for dietary habits and physical activity could also be formed.

Measure 8

Each municipality is encouraged to establish a public health council or equivalent. This council should include experts in the area of diet and physical activity who should integrate these issues into community-based health promotion.

Actor: Municipalities

Motivation

An important conclusion from the 'National objectives and strategies for nutrition 1999-2004' (1) and experiences from local public health work in general are that health promotion should be institutionalised at the local and regional level so that the achievement of objectives is not dependent on the efforts of a few individuals. It is also important to ensure that sufficient resources are distributed for development, establishment and implementation.

The municipalities are responsible for public health in their areas of activities. A considerable amount of legislation regulating the activities of municipalities, and many of the areas of municipal activity have consequences for public health in general and for dietary habits and physical activity in particular. Many municipalities therefore have objectives, policy and strategies for health promotion but there is considerable variation between municipalities as to how this work is organised and prioritised.

Systematic reviews have concluded that interventions at community level can be very effective in increasing people's physical activity both in the short and the long term (3-4). Interventions based on theories for behaviour change and that offer individual skills training by qualified personnel show the best results. If the activities are also independent of facilities, the participation rate increases. The evidence of changes in dietary habits in the local community through communicative methods is not as strong. However if combined with changes in food availability at food outlets and catering supported by appropriate information material, it is possible to achieve some improvements in dietary habits (5). The effect ceases as a rule when the intervention ends which underlines the need for long-term efforts.

A survey of health promotion policies at municipal level was conducted by the National Institute of Public Health during the summer of 2003 with the help of a questionnaire to all the municipalities in the country (6). The study demonstrated that the organisational structure of health promotion was developing in the municipalities. It was generally concluded that several municipalities have more extensive organisations for health promotion today compared with 1995. Primarily, the number of municipalities with public health policies and public health councils has increased although many places were still without such policy. Of a total of 290 municipalities, there were policies at 144 and of these 62 per cent also had programmes within specific objective domains. Twenty six municipalities stated that they had programmes for physical activity, while only thirteen had such programmes for nutrition. Much remains to be developed at the municipal level regarding health promotion policy.

One way of ensuring a long-term approach is to see to it that efforts for healthy dietary habits and increased physical activity are not isolated from regular operation and policies. In order for this work to be integrated in the various activities and thereby be guaranteed long-term, planning of the work has to be conducted with an intersectoral approach. At the same time, it should be emphasised that because food and physical activity are influenced by so many areas of municipal responsibility, it is essential that people with nutrition competence are linked to the public health councils. The stakeholders have to be clear regarding aspects such as objectives, target groups, working methods, roles and responsibilities.

Measure 9

Health impact assessment methods should be developed further with particular emphasis on dietary habits and physical activity. The health impacts of changes in marketing, price, availability and consumption of energy-dense and low-nutrient foods should be assessed.

Actors: National Institute of Public Health in cooperation with the Swedish Board of Agriculture, the National Food Administration and the Swedish Consumer Agency

Motivation

One way of generating awareness of the significance of political decisions for public health is to conduct health impact assessments (HIA) of political proposals or decisions (7). HIA is a tool for analysing effects on public health in a systematic way and weighing these against other priorities. More established concepts outside the health sector include environmental impact assessment and social impact analyses.

In principle, a social impact analysis would be included in a health impact assessment conducted on the basis of the 11 objective domains for public health that also incorporate targets and indicators regarding social conditions. Health impact assessments are currently conducted on a very limited scale as part of environmental impact assessments on larger projects which potentially affect the environment, although there is a considerable lack of appropriate indicators for health in this type of assessment (8).

By complementing an environmental impact assessment with a health impact assessment, a broader health perspective would be obtained than is normally available from an environmental impact assessment. A health impact assessment can highlight, for example, effects concerning opportunities for recreation, physical activity, participation and safety that are not included in environmental impact assessments. Another significant contribution is that health impact assessments focus on social inequalities in health by analysing how different groups of the population will be affected by the decision.

As interest increases among municipalities and county councils in working with public health issues in general, and dietary habits, physical activity and body weight in particular, a need will arise to develop tools able to assist in evaluating the impact of decision-making for public health. Examples of political decisions at the municipal level that would have to undergo health impact assessment include the building of housing on green areas, priorities made between different activities in the annual municipal budget, procurement of cafeteria operations at sports halls, etc.

A health impact assessment requires measurable targets and indicators. The targets in this basis for an action plan can be relatively easily translated to provide indicators, such as the quantity of fruit and vegetables per person per day, or the number of children who satisfy the recommendations for physical activity. The association between proposed measures, such as improvement of the infrastructure for cycling and the indicator 'the number of children who satisfy recommendations for physical activity' are somewhat uncertain and in such cases estimates have to be based on assumptions. The link between the indicator of physical activity itself and the health outcome is,

however, well established and proposals can in this way provide estimates of an expected health outcome.

The Trans Atlantic Consumer Dialogue (TACD) called for greater focus on health impacts of food advertising aimed at children. In its resolution in 2004 concerning food advertising targeting children, the TACD recommended that governments in the EU and the United States conducted reviews of regulations and management to ensure that advertising supports rather than undermines objectives for nutrition and public health (9).

High consumption of foods rich in energy, sugar and fat is an important contributory cause of obesity, especially among children and young people who have the highest rates of consumption of these foods in relation to their body weight (2). It is important from a public health policy perspective to track changes in the indicator variables supply, price, marketing and consumption of these food products and assess the health impact for specific groups of the population.

Health impact assessments can be performed on the basis of total consumption data from the Swedish Board of Agriculture, which would have to develop specific statistics for selected product groups (see also Measure 42 in *Food policy*). Consumption data at individual and group level can be obtained from the National Food Administration's dietary surveys (see Measure 44 in *Food policy*).

Measure 10

An index should be developed for surveying food availability (supply and price of keyhole-labelled food, fruit, vegetables, and energy-dense foods). The index should be used planning at municipal level.

Actor: National Institute of Public Health

Motivation

Good availability of food products is a fundamental condition for healthy dietary habits. This means that the population, even those who are economically less privileged, should have access to a varied range of high-quality food products at reasonable prices. This also means that a large supply of energy-dense foods in the local area can lead to overconsumption. Health information to the population may not achieve the desirable effects if the food products recommended are not available within a reasonable distance of the consumer or are significantly more expensive than products with low nutritional value.

The significance of availability of food products for dietary habits and food product choices is relatively unknown in Sweden and methods should be developed to describe the availability of foods in a simple way. There is currently a lack of information concerning the development of range and supply of food product groups in various kinds of outlets and in different regions of the country. For this reason, there is no baseline data from which public health measures can be evaluated. By surveying the network of outlets and supply of certain key food products, such as fruit and vegetables, fish and wholemeal bread, 'weak outlets' could be identified along with the extent to which consumers are dependent on them. Furthermore, the availability of energy-dense,

nutritionally poor products in different outlets could be measured. A collective index could be introduced in the Municipal Facts database (*Kommunala basfakta*) at the National Institute of Public Health, which is already used as a tool and for background material in health promotion at municipal level (*Kommunala basfakta*, www.fhi.se).

In Finland, sales statistics from food outlets have been developed to provide a tool for tracking nutrition interventions (10). A system for surveying food availability and pricing of food products has been developed in Britain (11). The system showed significant differences in costs for certain selected food products depending on the type of outlet. It could also be seen that soft drinks, sweets and chocolate are more available than more healthy foods. Less than one third of the food that should have been in a basket with basic food products for a healthy diet were included in the range of food products supplied in the outlets surveyed.

The preconditions exist today for the development of a food availability index. The Swedish Consumer Agency has data and methods available through the Service database and the National Board of Housing, Building and Planning is conducting a pilot study regarding a so called planning Geographical Information System (GIS).

There are studies indicating that a high availability of energy-dense food in an area is linked to a high rate of obesity (12). Overviews of the geographical localisation of fast food restaurants with a wide range of energy-dense foods (13) would enable public health aspects to be better observed, for instance, regarding applications for permission to establish new ventures in the municipalities and this would help to preserve free zones around schools.

In a survey of four Stockholm suburbs in the autumn of 2004, it was discovered that there is considerable variation in both the availability and accessibility of fast food in environments where children spend time daily. The most notable difference, however, was that there was no alternative to fast food outlets in the socio-economically poor areas and that consumption was high, compared with the socio-economically best-off areas where consumption was low (14).

Measure 11

A national database should be set up for reporting and monitoring children's height and weight. This work should be carried out in collaboration with child healthcare and the school healthcare service. Data on breastfeeding from child healthcare records should be included in such a database.

Actors: The National Board of Health and Welfare/Centre for Epidemiology

Cost: EUR 53,000 per year (one full-time post)

Motivation

There is currently no national, all inclusive or representative data available recording children's height and weight. This means that statistics concerning both the prevalence and trends in overweight and obesity are unclear. It also makes it difficult to study the effects of preventive measures against overweight and obesity and the changes in

general in the population and in different groups of the population. To be able to track weight developments for children and young people a national system should be set up for the collection of such data. The height and weight of children is already measured regularly at child healthcare centres and school healthcare but this information is not passed on to any national register (see Measures 18 and 19 in the section *Health care policy*). Standardisation of measurements is needed as well as the computerisation of medical records for central collation. This need for this measure has been highlighted by a number of researchers.

Statistics for breastfeeding are currently collected by the Centre for Epidemiology at the National Board of Health and Welfare. It is essential that these activities should be further developed. Statistics on breastfeeding should be used as background material for initiating promotional campaigns when necessary and for the provision of statistics comprising general health information. Breastfeeding is an important health indicator both nationally and internationally. It is used by WHO in reports on the health situation in different countries and is one of the primary indicators within objective domain 10 in the public health policy. The National Board of Health and Welfare has been promoting breastfeeding for many years through health education pointing out the importance of maintaining a high frequency of breastfeeding. To be able to do this, current breastfeeding statistics are necessary from which breastfeeding trends can be tracked both nationally and locally. Good statistics regarding breastfeeding in combination with children's height and weight data can contribute to better knowledge about the potential protection provided by breastfeeding against overweight and obesity later in life (2).

Measure 12

Methods should be developed for monitoring children's dietary habits and physical activity, body weight and aspects of mental health in combination with socio-economic factors.

Actors: The National Institute of Public Health in cooperation with the National Food Administration and researchers

Cost: EUR 53,000 for development + EUR 630,000 for implementation

Motivation

Several authorities and stakeholders require up-to-date and reliable information about the occurrence and development of overweight and obesity among children and young people in Sweden, in combination with information about children's dietary habits and physical activity. It is of great importance that such data can be related to sex, age, social group, geographical area and so forth. A national collection of data combining health behaviours and body weight with other relevant factors, similar to the public health survey of adults conducted by the National Institute of Public Health, should be developed as a complement to the detailed dietary surveys planned for implementation by the National Food Administration (see Measure 44 in the section *Food policy*). It will take about 5 to 10 years to establish a national database of children's height and weight by the National Board of Health and Welfare and based on data from child

healthcare centres and school healthcare,. Considering that the measures in the forthcoming action plan should be implemented earlier, it is important to start collecting data from a national sample of children up to 18 years old as soon as possible. Continuous follow-up and longitudinal data of children at specific ages would provide an important tool for the follow-up of the forthcoming action plan and for an understanding of the determinants and how these interact in the development of overweight and obesity among children.

Measure 13

A health communication strategy for healthy dietary habits, increased physical activity and prevention of overweight directed at the public should be developed. The strategy should describe implementation at the national, regional and local level. Health communication should be target group-specific and utilise the tools and potential provided by modern technology. The strategy should also include evaluation methodology.

Actors: The National Institute of Public Health in cooperation with the National Food Administration, health communication researchers and representatives of municipalities and county councils.

Motivation

Society has a responsibility to provide health information to the population independent of vested interests. Regardless of how effective health information is in improving lifestyle, there is a democratic duty, an aspect of rights, for society to provide and guarantee all citizens access to correct, factual and universally comprehensible health information. This underlines the need for information to be target-group specific.

The concept of ‘health information’ includes planned health messages aimed at individuals, groups and the population with the aim of increasing awareness and knowledge about health and the determinants relevant to health. By ‘health communication’ we mean communication processes that include health messages and that are based on interaction between participants, for example motivational interviews (15).

In the autumn of 2003 and spring of 2004, the National Institute of Public Health conducted a survey of current health information provided by national authorities, county boards and county councils along with a sample of municipalities and voluntary organisations. The majority of those asked conducted health information to the public and sections of the public in various forms and with the help of a number of methods and techniques. At the same time, a number of health issues were overlooked and that information is insufficient. Areas highlighted of special importance regarding health information included nutrition, physical activity and overweight/obesity along with the prevention of mental ill health. According to many stakeholders, there is a lack of health information directed to a number of important target groups, primarily children but also parents and the elderly, the disabled and ethnic minorities.

A survey conducted specifically in the field of food also indicated that access to information from the public sector about diet and health was currently at a low level (15). Instead, information from various private actors was predominant. The food

industry chooses to focus on concepts such as 'enjoyment of food' and increased physical activity. Readers of the press are confused by new dieting trends. The preparation of nutritious food is not among the objectives of TV cooking programmes. All in all, the message is confusing and the need for information from the authorities independent of vested interests is apparent and is wanted both by the public and health professionals (16). It was also concluded that there is currently no health information specially targeted at disadvantaged groups.

A further conclusion from the study related to health educators at the regional and local level is that there is considerable competence within the field of health communication available at these levels in the form of specialist counsellors at public health units, social medicine units or similar. This competence, however, according to those concerned, is not always felt to be sufficient.

Research has indicated that information and the dissemination of knowledge itself has a limited effect in influencing lifestyle (17). It is difficult to say generally how effective health information is, which means that research into health information and health communication has to be promoted, and evaluation instruments should also be developed and improved. Health information measures should be combined with other health promotion measures if enduring behavioural changes are to be achieved.

Patients' organisations working with eating disorders often express concern that health information is one-sided with simplified and moralistic messages, which they claim may increase the risk of eating disorders among sensitive individuals. The organisations underline the need to make information target group-specific along with the need for information to focus on quality of life and health rather than on body weight and ill health (Network for eating disorders, personal communication). There is no scientific evidence, however, that interventions aimed at children to prevent obesity has resulted in an increase of anorexia (18).

Actors in the public sector should develop a comprehensive and forward thinking communication strategy to counteract the rising commercial focus of health information which further reduces the individual's chance of sorting and evaluating among the supply of information. Experience and evaluations from the Institute of Public Health's promotion of physical activity year in 2001 *Sweden on the move* demonstrates that through comprehensive communication strategies, it is possible to achieve advocacy in support of a public health issue and that enduring changes are possible at least in terms of knowledge and attitudes both among the public and decision-makers (19). Health information strategies should be based on the latest research and development in the field. An initial task for the group developing the health communication strategy will be to establish which messages and target groups are to be prioritised. The role of the State pharmacy and its potential as a health educator should be observed in such a strategy. Conditions for the development and follow-up of a health communication strategy include the ability to track trends in physical activity and dietary habits. Important target groups are the physically and mentally disabled and immigrant groups, who are seldom reached by regular communication channels but among whom problems with overweight are in some cases considerable.

Measure 14

Every municipality should adopt a policy regarding the food provided in municipal establishments.

Actor: Municipalities

Motivation

Activities financed with public funds, tax revenue, should promote health or at least avoid contributing to poor health. Public premises such as sports facilities, swimming pools and concert halls where a large proportion of activities are paid for by public funds, should therefore provide a supportive environment for healthy dietary habits. The range of food available at cafeterias, snack bars and product display racks in such places should make it easy and attractive to eat healthy foods. This means that the range on offer should, in the main, consist of reasonably priced and healthy meals, snacks and food products. Procurement of private enterprises for public environments should therefore include specification requirements ensuring this is achieved.

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Research policy

The objective of research policy is for Sweden to be at the forefront of international scientific research. The way research is funded on the central government level should contribute to sustainable development.

Many of the measures proposed in this document for an action plan are based on research findings or systematic reviews. It can be concluded, however, that a large part of the underlying material for this document was written some time ago and was conducted in a context that differ from Swedish conditions. In addition, it focuses on issues that are not always relevant to Sweden. It must also be remembered, among other things, that development is dynamic, perspectives widen, new aspects replace existing ones and the relevance of new research data has to be constantly confirmed. More research in this field is essential to be able to conduct effective and evidence-based health promotion.

Primarily, current research in Sweden regarding diet and physical activity has been restricted to the traditional research areas and interdisciplinary projects are rare.

Measure 15

A consortium should be set up with representatives from various research councils with the aim of initiating a number of long-term research projects, mainly intervention research concerning diet and physical activity.

Actors: Government, various research councils and other presumptive financiers

Cost: EUR 8,5 million allocated over a seven-year period
(0,2+1,6+1,6+1,6+1,6+0,3)

Motivation

The need for investments in research has been a recurring issue during discussions at hearings and, not least, during meeting scientific expert groups. The needs described coincide with the areas of research indicated by WHO and in the action plans of other countries. Within the relevant areas, certain needs have been especially underlined:

- Long-term interdisciplinary intervention research in different sectors of society relating to healthy dietary habits, increased physical activity and prevention of overweight and obesity.
- Intervention research at workplaces concerning dietary habits and physical activity.
- Research into the significance of outdoor recreation, household income, food costs, town and transport planning along with marketing for healthy dietary habits and physical activity.
- The development of methods for population surveys of physical activity, dietary habits, body weight, body fat and different biological markers. Methods should be applicable to the study of men, women and children, adults, the elderly, different ethnic groups and different socio-economic groups.
- The development and testing of methods for the evaluation of the cost effectiveness of interventions to promote healthy dietary habits and increased physical activity.

- Research into societal costs for unhealthy dietary habits, physical inactivity and the consequences of these, such as overweight and obesity.

There is a considerable shortage of theory-based intervention research at the society level within the field of dietary habits, physical activity and overweight both in Sweden and internationally. Several systematic reviews in the area mention the need to improve both the study design, implementation and evaluation methods. Most of the reviews within this field are based on American primary studies. Intervention studies including environmental measures are often linked to a specific geographical or socio-cultural context that cannot be simply and accurately transferred to Swedish conditions. A survey of Swedish public health research concluded that, over a three-year period, only five intervention studies conducted to improve dietary habits and physical activity were published (1). Collated intervention research within the public health field as a whole comprised a total of three per cent of all published public health scientific papers during the period. It is therefore no exaggeration to claim that there is a severe shortage of intervention research in Sweden.

The survey also concluded that there is a complete absence of any evaluation of organisational measures and processes for health promotion in the municipalities and county councils (1). The result of these measures will remain unknown to public health research and cannot therefore be recommended on scientific grounds. Municipalities and county councils should therefore obtain support to devise scientific methods for the development, planning, implementation and evaluation of measures which impact on public health. The results should be published internationally since there is considerable demand for structural measures impacting on public health. In particular, research into policy and the impact on health of environmental factors should be intensified.

While the societal costs of alcohol and tobacco are fairly well studied, there is currently no collective analysis of the total costs of unhealthy dietary habits, physical inactivity and obesity. In 2002, the Swedish Council on Technology Assessment in Health Care (SBU) (2) conducted a systematic literature review which included the costs of obesity and obesity-related diseases. No primary study had been conducted for Sweden. SBU pointed out that data for assessment of the indirect costs for obesity are limited. Better knowledge about the direct and indirect costs for unhealthy dietary habits, physical inactivity and obesity are also a precondition for assessing the cost effectiveness of different measures.

A prerequisite for the effective study of intervention measures for healthy dietary habits, increased physical activity and the prevention of obesity, along with better knowledge concerning the aetiology of obesity is that valid methods exist for measuring dietary habits, nutrient intake, physical activity, body weight and body fat. Methods have to be developed which function for different population groups such as children, the elderly and immigrants. Access to new technology in recent years provides good opportunities for the development of such methods.

There is continuous competition between research groups for the relatively limited state funds available for research. In this context, projects focusing on applied nutrition and physical activity have experienced difficulty in competing for priority, often because the prioritising committees at the research councils give low points for relevance aspects compared to other projects. It has therefore been virtually impossible

to obtain grants for longer periods. Intervention studies take time, more than the three to four years generally financed for traditional PhD projects.

The need for interdisciplinary projects has been pointed out from many quarters. Planning and financing are especially problematic when different disciplines (research councils) are involved. Quality may be good but relevance is not always assessed to be as important which is why interdisciplinary projects often take second place (according to the evaluation committees at research councils) to more significant projects. Approaches similar to those employed for selecting projects within the EU framework programme may be a solution.

Funding for the first year of activities should be used in a broad planning phase including the relevant or presumptive financers, researchers from different natural science, social science and behavioural science disciplines along with interested municipalities and county councils, the relevant authorities, the National Board of Health and Welfare, the National Food Administration and the National Institute of Public Health. Funding could be used, for instance, for planning of projects. A thorough planning round is needed to identify the needs, the competence and the opportunities. Such planning should also include how Sweden can contribute to enhance this sort of research within EU-financed projects.

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Health care policy

The general objective of health and medical care policy is to improve the quality and accessibility of care. Both health and dental care have a legislated preventive responsibility (Health and Medical Services Act 1982:763 and the Dental Services Act 1985: 125). School healthcare also has a largely preventive agenda (Education Act 1985: 1100). Health care also plays an important role in national public health policy in the form of objective domain 6 – Health and medical care that more actively promotes good health (1).

The Government asserts that the health service is of considerable significance for long-term health development through its specific competence, authority, broad expertise and extensive contact with the population. Through this objective domain it was established that health promotion and disease prevention should permeate the health service and be a natural part of all care and treatment. To enable the health service to be more health-promoting, cooperation is necessary with other actors in society and all activities should have health perspective. WHO's global strategy for diet, physical activity and health takes up the significance of health and medical care, especially primary care, as having a crucial role in promoting healthy dietary habits and increased physical activity (2).

Not just primary care but also specialized care has an important role to play in relation to diet and physical activity, for example, by supporting individuals wishing to change their lifestyle regarding food or exercise, as well as contributing to solve problems of a psycho-social nature. Preventive programmes, in the context of the measures below, aim to prevent the occurrence of disease and injury among the population.

It is important that health promotion and disease prevention are conducted in a systematic and strategic way with several coordinated measures in collaboration with other actors and that the measures are evidence-based, and that follow-up and evaluation are a natural part.

Measure 16

Contracts or commissions should contain requirements for health-related parameters and health effects to be included in reports from the various healthcare units. In addition, these healthcare units, including dental care services, should to a greater extent be called on to develop and implement health promotion and disease prevention programmes, particularly relating to healthy dietary habits and physical activity.

Actor: County councils

Motivation

A holistic approach and a health perspective are the basic conditions for a more health-promoting health service and can contribute to more efficient medical care provision (3). The general objective of a more health-oriented health service is to improve the health of the population. Such a view of the health service's task incorporates the importance of adequately treating disease and of patients experiencing an improvement in their health. The development of various steering and fiscal compensation systems enabling the different care providers to work in a more health-promoting and disease-preventing way is a basic prerequisite. It is important for healthcare purchasers or their equivalent to ensure the different activities within the health service focus on health benefits and not exclusively on medical care provision.

Methods need to be developed for health-related measurements and for assessing an individual's health and quality of life, known as health benefit measurements. With the help of various questionnaires and standardised instruments, for example, the self-estimated health of an individual can be measured. Work is currently ongoing in this area, for instance, within the framework of the Swedish Network for Health-Promoting Hospitals.

Another approach to clarifying the health orientation of the county councils and working from a holistic perspective is in the follow-up of activities reporting health outcomes and designing health audits at the population level. The aim of a health audit is to clarify management, steering and follow-up of how resources and measures in health and medical care contribute to positive health developments. Development work is currently underway with health audits at six county councils in conjunction with the Swedish Federation of County Councils.

In order to successfully re-orientate the health service towards health promotion and disease prevention activities, it is important that healthcare purchasing, agreements and so forth, are based on a health perspective. This provides conditions for working preventively and especially with measures related to diet and physical activity. Furthermore, purchasers or equivalent level representatives should also instruct providers to develop and implement systematically health-promoting and disease-preventing programmes to a greater extent than today, including the use of different types of interview methods, such as the motivational interviewing. This means in turn that the county councils should invest more resources in further training in disease prevention methods. The county councils should also review the number of posts for dieticians focusing on disease prevention and how these posts should be distributed throughout the

health service so that the dieticians' skills are linked primarily to maternity care, child healthcare and primary care.

Measure 17

When procuring food for patients, staff and visitors to restaurants, cafeterias, vending machines, kiosks etc. in healthcare premises, purchasers should require that healthy snacks and keyhole-labelled meals dominate the total supply.

Actor: County councils

Motivation

The introduction of a purchaser-provider model, the corporatisation of hospitals and out-sourcing of healthcare services has led to comprehensive changes in county council catering activities. The procurement of care means that the patients' food is no longer specified. Subsequently the purchasing organisation does not identify the goals, requirement specifications or follow-up system for catering activities. Diet and nutrition competence should exist at all levels among employees in catering-related activities as a decisive factor for ensuring the satisfactory quality of catering.

Dietary expertise should be involved when catering services are being procured. It should be their task to assist in formulating the requirement specifications and the evaluation of tenders as well as having responsibility for following up quality. Requirement specifications for food served to patients are available at many of the larger regional hospitals (4). Specifications concerning nutritional content in meals for patients are based on the guidelines developed by the expert group for coordination of hospital diet- (5). All levels within the health service (including all types of care) must be aware of these guidelines.

The hospital environment offers regular cafeterias, kiosks, snack trolleys and vending machines providing simple meals, snacks and drinks. The range of meals and food products should represent an opportunity to demonstrate to patients, visitors and relatives what is meant by healthy dietary habits. In this case fresh fruit, low-fat milk products, wholemeal bread and various meals using keyhole-labelled products could be reasonably priced and accessible while ice cream, sweets, sweet drinks and cakes and biscuits should only be available on a very small scale. Many of the cafeterias at county council hospitals have contracts with the hospital management. Cafeteria activities are generally not procured which means that no requirements are placed on their activities although a certain range of food is required in the contract. Where cafeterias are procured there are specifications for catering activities which, however, do not include the formulation of nutritional aspects (4). Food availability in health and medical care should in the best case reflect its position in general regarding diet and health issues. It should therefore be quite clear that demands should be made on these food providers. To achieve this, all cafeteria activities at hospitals should be exposed to formal procurement.

Measure 18

Health communication should be improved within the maternity and child healthcare services as part of health promotion efforts with all pregnant women and parents aimed at promoting healthy lifestyles, especially dietary habits and physical activity. Specific health communication can e.g. form part of a parent support programme.

Actors: County councils, maternity care and child healthcare centres in cooperation with school healthcare service, etc.

Motivation

There is a long Swedish tradition of health promotion especially in maternity care, child healthcare, school healthcare and dental care. In these activities the assessment has also been made that health promotion and disease prevention measures should receive priority and access a broader range of population groups to encourage good dietary habits and physical activity, not least among children and young people. Health promotion at maternity health centres and child health centres in Sweden is an important reason for the low mortality among mothers and children in Sweden during the latter half of the 1900s (6). Intervention studies for better dietary habits among pre-school children aged 1 to 5 have shown that advice provided to mothers, for instance, improves the family's dietary habits (7). This work should be further developed and conditions should be created, not least in terms of resources, to be able to continue to develop current health-promoting and disease-preventing approaches.

It is also important that cooperation occurs between other actors in the local community who meet children, such as pre-schools, school healthcare, health centres, youth clinics and so forth. Where high-risk individuals and children are identified regarding over or underweight, there should be routines for how these children should be transferred into suitable activities within the health service. Those without medical complications should receive dietary advice to prevent overweight/obesity.

Parents have a natural responsibility for their children's lifestyle and are therefore able to influence their dietary habits and physical activity to ensure that children adopt behaviours beneficial to their health, both regarding overweight and underweight. Accessibility to food at home and social support are among the most significant determinants for children's dietary habits (8). Parental support for children's physical activity is significant primarily because it reinforces children's trust in their own abilities and thereby also their self-confidence (9, 10). This support can be both direct and indirect, for example, by parents acting as role models and by parents providing the conditions for children to participate in various activities.

Despite overweight among young girls being around ten times more common than anorexia (11), it is also important to pay attention to children who are underweight. Child healthcare and school healthcare have an important role to play in the prevention of eating disorders by promoting mental health through various pedagogical measures to enhance the social interplay between parents and children. Research shows that the promotion of mental health during the very early years reduces the risk for other forms of ill health for the rest of an individual's life (12). Many of the risk factors for anorexia and bulimia are the same as for other mental diseases (13).

A strong link between parents and children reinforces the child's self-efficacy. A child's self-efficacy is in turn an important determinant for both healthy dietary habits and physical activity (14). The report on parental support, presented by the Institute of Public Health in January 2005, documents 51 controlled experiments conducted with babies for the purpose of improving the interplay between the caregiver and the child. The experiments illustrate clear effects even after relatively minor interventions (15). Two methods based on this research, *Guidance through interplay* and *From the very start* are currently being introduced into regular parents' group activities at child health centres.

A necessary step is to ensure that care personnel and parents are well informed of the latest expertise concerning the significance of healthy dietary habits and physical activity for children and that parents are informed about current dietary advice for children.

A further stage in developing health-promoting approaches within maternity care and child healthcare would be to develop methods for health communication for all pregnant women and parents. Health communication both in the form of individual sessions or in groups should be provided as part of the overall health promotion of maternity and child healthcare centres. Health interviews are already conducted in maternity and child healthcare but further development could aim to support the individual in a series of health behaviours. The health interview should not only comprise simple advice and information but could rather be based on motivational interviewing methods centred on the individual. It should be pointed out that this demands both training for healthcare personnel based on an evidence-based methodology, and resources allocated to method development and training/supplementary training packages adapted to the personnel.

To be able to track weight and height developments among children and young people over time, it is important to systematically collect, collate, process and publish this type of information at the national level, preferably from the entire population but at least from a number of representative areas. Such activities are currently performed at the child health centre in Örebro and Västernorrland county councils. Based on the experience gained, it is important to develop a system for coordinated national registration and collation. The technical solution tested in the development of a national information system for vaccinations could also be used to process information about height and weight within child healthcare and school healthcare (see Measure 11 under *Public health policy*).

Measure 19

The school healthcare service should promote healthy lifestyles among children and parents. Health education should be further developed as part of health promotion activities to promote healthy dietary habits and increased physical activity. Pupil height and weight should be routinely recorded.

Actors: Municipalities/school healthcare in cooperation with child healthcare centres, youth clinics etc.

Motivation

One way of working with health promotion and disease prevention at the local level is to reach children and parents in settings where they regularly spend time such as at pre-school and school. Such measures have to occur in cooperation with several local actors such as municipalities/school health services in cooperation with child healthcare centres, youth clinics, healthcare centres, organisations and so forth. To realise this sort of joint local work, it may be feasible to work out local action plans in which all the relevant actors can plan the relevant measures. Research has demonstrated that it is possible to prevent obesity among children and young people using limited school-based programmes including information and stimulation to better dietary habits in conjunction with efforts in the school environment (16-18).

The task of the school health service, defined in the Swedish Education Act, is to preserve and improve the mental and physical health of pupils and promote a healthy lifestyle. The National Board of Health and Welfare has recently formulated guidelines for school healthcare (19) with the aim of indicating a new direction for this work. The guidelines state that it is important for the school health service to actively participate in the school's health education activities by following the development of knowledge in the field and using new evidence-based methods. Today there is no available scientific documentation for example for the majority of school healthcare measures. The school health service could potentially promote a healthy lifestyle through individual contacts, group activities or general measures. The National Board of Health and Welfare also comments that even if the value of the regular physical health check-ups are not scientifically documented, there remains good cause to maintain a general healthcare program. Greater weight should be placed on the mental well-being of pupils and obstacles to pupil development should be surveyed, such as risk-related health behaviours. At the same time, cooperation with child healthcare centres should be maintained in the transition to school.

In the state-of-the-art document produced by the Swedish Association of School Doctors and the National Association for School Nurses (20) it is proposed that the expression 'health check-up' should be changed to 'health visit' to emphasise the shift from an inspection to a health-promoting approach. Health monitoring should, they believe, occur in the close interplay between pupil and parent. They also feel that it is important to instruct pupils and parents to be more aware of health problems and disease symptoms themselves.

An important element in an action plan should include various health communication methods, such as those based on the motivational interviewing techniques (21). It

is possible to conduct dialogues and health interviews individually or in groups with all pupils and their parents with the aim of supporting them to improve dietary habits and increase physical activity. In cases where special risk groups and individuals are identified, such as children and young people who are overweight or underweight, routines should exist for how these pupils can be referred further in the care chain. Implemented measures should be documented in journals or equivalent to permit continuous follow-up. It should be pointed out that this type of developed health interview requires trained healthcare personnel in the school health service. This is in turn based on methods being further developed and evidence-based and requires county councils to allocate resources for method development and various training packages as well as the updating of expertise on food, health and physical activity.

To be able to follow the weight and height development of children and young people over time and identify the effects of changes in lifestyles, it is important to have systematic collection, collation, processing and publication of this information at the national level, preferably for the entire population but at least from a number of representative areas (see Measure 11 in the section *Public Health Policy*). This type of data is already collected in certain municipalities and regions, for instance in Östergötland which maintains an extensive register of school children's weight and height development (22). Pre-school, compulsory school and upper secondary school are the instances when weight and height are registered although in the majority of cases this type of data remains in the individual pupil's records. A practical problem is also that the medical records kept by the school health service are only computerised to a limited extent.

Measure 20

Preventive programmes for lifestyle-related diseases should be further developed and implemented, e.g. for overweight individuals and others with risk factors for diseases associated with dietary habits and physical inactivity.

Actor: County councils/primary care and specialist care

Motivation

Different prevention programmes within the health service have been developed during the last decade. A report from the International Union for Health Promotion and Education, the IUPHE, concludes that the health service alone cannot achieve extensive changes in lifestyle and coordinated activities are needed from several actors in society to achieve this purpose. There is considerable support for positive effects from interventions in the form of short-term counselling from a doctor, such as on the subject of tobacco or alcohol (23). There is also strong support in scientific literature that individual preventive measures without medication have good results in the areas of tobacco, dietary habits, physical activity and alcohol (24-25).

Preventive programmes should, as much as possible, consist of non-medication methods since primary prevention with pharmaceuticals has not resulted in significant effects on cardio-vascular health (16). Comprehensive lifestyle changes are needed to achieve such effects, primarily regarding tobacco, food and physical activity and weight

reduction (26). A very significant aspect of preventive programmes is also the continuous written documentation of all measures and results, for example, in the patient's medical records. This enables follow-up and subsequent collative evaluation of the programme.

Scientific studies on various physical activity interventions, for instance, in the UK, conclude that verbal and written information and advice from health and medical personnel in primary care can have short-term effects. To achieve long-term effects, further interventions are required such as referral to specialists and subsidised physical activity (27). The US Preventive Services Task Force concludes that there is insufficient evidence to recommend behaviour-directed short-term counselling regarding diet for unselected patients in primary care (28). On the other hand, more intensive counselling is recommended (comprising several sessions longer than 30 minutes each) regarding dietary habits among adult individuals with high risk of cardio-vascular and other diet-related chronic diseases. The interventions assessed to be most effective combined information about diet along with behaviour-directed counselling. It was found that interventions based on theories of behaviour modification, which provide practical skills and which are individually designed, were effective in increasing physical activity in the long term (27).

Within the health service, dieticians have specialist skills in nutrition and health. These professionals can provide advice on dietary habits to individuals and/or groups and can also provide support for healthcare personnel regarding the factual content of health interviews, for example. Dieticians could also act as resource personnel in various supplementary training courses within the health service.

A preventive programme implemented within the health service should initially identify different risk groups in the population as early as possible. The programme should therefore include identification of risk groups with overweight (BMI 25-30) and/or an unhealthy lifestyle. Even though more research and development is needed, it is believed that screening of risk behaviours will be part of disease prevention in the USA in the future (29). In Sweden different forms of standardised questionnaires are already employed in various contexts in the health service to be able to identify risk individuals.

If preventive programmes are to be successful, it is important that they are well-established and have continuing support in the organisations using them and in the local communities. Cooperation between local community actors and the health service is therefore important. Studies from the UK indicate that health service interventions as such probably have less impact than was previously thought and that multilevel interventions at the same time are necessary, including intra-personal, inter-personal and environmental factors to achieve and maintain changes in behaviour (27).

Methods of health communication should also be included as part of preventive programmes. The communication between healthcare personnel and the individual does not only aim to increase knowledge and awareness, it also aims to change behaviours. Communication can vary depending on the method and which theories are used. One method used for lifestyle modification is known as motivational interviewing (21) and is used today in a number of lifestyle issues such as alcohol, tobacco and physical activity (30-31). Motivational interviewing can be used both in individual interviews and in groups.

Measure 21

Training in motivational interviewing techniques for changing lifestyle in general and diet and physical activity in particular, should be provided for healthcare professionals in the maternity, child, dental, primary, secondary and school healthcare services. A training package should be developed and disseminated in cooperation with universities/university colleges, relevant professional organisations etc.

Actors: County councils in cooperation with universities and university colleges, relevant professional organisations etc.

Measure 22

Relevant national agencies should actively participate in the development and dissemination of evidence-based methodology concerning health promotion and disease prevention programmes, including motivational interviewing techniques for healthier lifestyles, focusing in particular on diet and physical activity.

Actors: National Institute of Public Health, National Board of Health and Welfare, Swedish municipalities and county councils, universities and university colleges, relevant professional organisations etc.

Motivation

From the National Board of Health and Welfare's health and medical care report (32), it is clear that education is an important measure to ensure that personnel are familiar with the methods for disease prevention. This demands, however, that health promotion and disease prevention is well established throughout the health service. At the same time, there is currently a need to develop ways to achieve this. Supplementary training/education in health promotion and disease prevention is needed for all healthcare personnel within primary healthcare, specialist care, maternity and child healthcare, school healthcare and dental care if this is to be realised. Dieticians are one example of resource personnel with specific expertise in the field of diet and health.

More specifically, supplementary training and education in interview methods within the health service is of great importance. Motivational interviewing is an example of such a method currently employed within various areas such as tobacco, alcohol and physical activity (30-31), 33). Motivational interviewing aims to increase the individual's motivation to change behaviour, in other words, it provides a sound basis for making individual decisions and at the same time provides the support and help needed by the individual in their current circumstances or in potential future difficulties. The method is especially useful for people who are not ready for, or feel dubious about change. The emphasis is on choice and responsibility of the participants to choose their future lifestyle themselves and an active contribution is considered crucial for this to succeed. The principles are the same regardless of whether the interview is brief or more extensive, conducted individually or in a group.

Today there is evidence to suggest that different forms of short-term counselling and motivational interviewing works for preventing alcohol dependence (34,35). Even

for physical activity, a short interview of around five minutes is sufficient, at least to achieve a short-term effect (27). As far as tobacco is concerned, there is scientific evidence that short-term counselling sessions have good results with many people being able to stop smoking. The Swedish Council on Technology Assessment in Health Care (SBU) report on methods for giving up smoking concludes that counselling and help to smokers to give up smoking is part of healthcare treatment and that it is efficient. In the health service, help is often provided during individual consultations with patients while in the private sector or corporate healthcare, giving up smoking is often addressed in a group. The results for individual or group sessions for giving up smoking appeared to be the same according to the SBU report (36).

Skills in how to conduct interviews and motivate individuals are an important area for development. This skill should in the future be incorporated into all healthcare training programmes. Already today this training should be a natural element in the in-service training of employees already engaged in healthcare occupations. Knowledge of interview technique would also make it easier for healthcare personnel to improve compliance, for example, when pharmaceuticals are prescribed. In this way, the motivational interviewing could, to a greater extent, provide one of many tools available to healthcare personnel in their efforts to promote health and prevent disease.

It should also be feasible to develop a general methodology for motivational interviewing at the same time as the method can be specially adapted to the various health behaviours. The design of different education programmes should be adapted to different categories of health personnel as well as to different settings and the needs of different occupational groups. The methodology should also be adaptable to the different target groups such as the elderly, the mentally and physically disabled and ethnic groups.

A basic requirement to enable personnel to use the methods in the future is that it is developed, continuously evaluated and that it should be subject to ongoing scientific testing. This represents an important role to be filled by the National Institute of Public Health and National Board of Health and Welfare as well as other national actors and professional organisations such as universities and university colleges in cooperation with public health department, for example, and Research and Development divisions within the county councils. The development of methods in the field of health promotion and disease prevention, both general programmes and especially those related to dietary habits and physical activity, should be given priority on both the national and regional level.

Measure 23

Systems should be developed for applying, monitoring and evaluating ‘physical activity on prescription’ initiatives as part of health promotion and disease prevention in the health and medical service.

Actor: National Consultation Group for Physical Activity on Prescription

Cost: EUR 105,000.

Motivation

The National Institute of Public Health in cooperation with the professional associations for physical activity (YFA) have produced FYSS (A scientific handbook on effects of physical activity in disease prevention and treatment) (37) which contains recommendations for physical activity for patient suffering from a large number of common diseases. FYSS is intended both as a general knowledge bank including the latest research in the field and as support for healthcare personnel to better be able to prescribe physical activity (FaR) at an early stage of the disease.

Physical activity on prescription (FaR) is a concrete example of a new working model for how the health and medical service can promote physical activity and, at the same time, it has led to healthcare personnel being able to conduct health promotion in practice. Physical activity on prescription (FaR) includes a holistic solution based on a functioning care chain from the prescriber to the instructor of activities. The patient's prescription is based on the advice and directions stipulated in FYSS. An important element in FaR is how the interview with the individual is conducted to increase motivation to follow what is prescribed. From the point of view of the prescriber, knowledge of interview techniques and how to motivate the patient are important areas for development.

FaR implies individually designed prescription of physical activity and is used for both healthy and ill individuals to prevent and treat certain diseases. The patient is given a referral to activities that may be conducted individually but is also given references to some physical activity provider. There is currently no systematic knowledge concerning the effects of physical activity on prescription (27) so it is important to follow up and evaluate the use and results of FaR in the future as well as the quality of the different measures.

There is currently considerable interest in FaR around the country. More or less all county councils have a representative in the Institute of Public Health's FaR network. There are considerable differences, however, in how well-integrated FaR is in various regions and county councils (38). At local level primary healthcare has an important function. To succeed in local work with FaR there are several areas that should be developed, such as a better local range of activities and more local organisations able to receive patients.

At the national level, development of FaR is conducted in a consultation group. The group consists of members from the Board of Health and Welfare, the Institute of Public Health, the Swedish Association of Municipalities and the Federation of Swedish County Councils, the Swedish Society of Medicine, Swedish Corporate Healthcare, the

Fammi Institute for Family Medicine and the Swedish Sports Confederation. At the national level, the Board of Health and Welfare and the Institute of Public Health have an important role to support the regional level in how FaR should be applied, followed up and evaluated. It would also be desirable to increase the number of actors involved at national level such as the Swedish Social Insurance Administration, the state pharmacy Apoteket AB and representatives from private training facilities.

There are issues regarding FaR which have to be addressed to achieve better impact, such as issues related to resource allocation, application of FaR in primary healthcare, the right to prescribe, distribution of responsibility between different actors, follow-up and evaluation. In a similar way, resources should also be allocated to further development and application of FaR such as the follow-up and evaluation of FaR in health promotion and disease prevention.

Measure 24

Cultural competence should be improved in health promotion and disease prevention concerning healthy lifestyles, particularly with regard to diet and physical activity.

Actor: County councils

Motivation

Today ethnic groups display a greater degree of ill health than the population in the country in general. Studies also show considerable health inequalities between women and men in the groups studied. The National Board of Health and Welfare describes, in the report *On Different Terms – Different Health* (39), that the same general health determinants apply for people born in Sweden and to the immigrant groups studied. There are also additional determinants linked to immigration itself which have some connection to health outcomes, such as discrimination, incomplete language skills and traumatic experiences.

The Government believes that public health measures should observe the ethnic perspectives more than is the case today, and especially with regard to differences in living conditions and health between people born abroad and people born in Sweden as part of an attempt to reduce inequalities in health (1).

One way of addressing the inequalities in health might be for example, to continually prioritise staffing of healthcare centres in poor areas and to improve competence and expertise among existing personnel in how to improve the health of different ethnic groups. Furthermore, special health educators with personal experience of immigration to Sweden could be trained and employed at posts in primary care services.

Research conducted in Britain has shown that it is difficult to reach various ethnic minority groups and the studies performed have experienced methodological problems (27). There is a considerable lack of high-quality intervention studies among ethnic groups which makes it even more important that such efforts are carried out and evaluated. Moreover, it is important that minority groups are included in interventions

to avoid further marginalisation. Interventions should also be designed for specific groups, observe cultural factors, language, religion and so forth and should be multidisciplinary with the involvement of specialists in health promotion and nutrition along with researchers (40).

A promising example of how the health service can work with health promotion and disease prevention is the International Health Educations project which is a collaboration project between the Region Skåne and City of Malmö. These health educators have academic health qualifications from their countries of origin. The aim was to create greater equality in health between ethnic groups by providing them with health education (41). The objectives of the project were to:

- Prevent ill health within selected language/ethnic groups.
- Develop new methods for health promotion and disease prevention.
- Demonstrate the benefits of cultural diversity to society and to health and medical personnel.
- Promote integration.

An evaluation indicated that the role of health educators was important for increasing understanding between the health and medical care system and different cultures both to the benefit of traditional medical care and of health promotion and disease prevention. The results of the evaluation showed that the people who had received information from the health educators had experienced this as very positive and over 90 per cent asked for more education opportunities (41).

Measure 25

Health interviews on dietary habits of children and the family should routinely be carried out as part of dental health checks/visits to the dentist's.

Actor: County councils/dental care services

Motivation

The considerable experience of preventive work within the dental service and its contact with the whole population makes dental care an excellent setting for health promotion and disease prevention measures, for example, with regard to dietary habits. Today, care and preventive work are conducted in accordance with an individual risk assessment; in other words, the previous annual check-ups have been replaced by individually adapted check-up appointments and dental health checks.

According to the Swedish Dental Association there is great interest and considerable expertise among dental personnel concerning the significance of dietary habits for oral health. A lack of resources can unfortunately lead to preventive work becoming a low priority within dental care. One approach, however, is that patients can receive information concerning dietary habits and their significance for oral health, for instance, in the form of a brochure possibly produced by the voluntary Tandvärnet (*Tooth care*) trust. Training of dentists, dental nurses and dental hygienists also provides a firm base for working with health promotion and healthy dietary habits.

Dental personnel could routinely conduct a health interview with children and adults about good dietary habits. The interview at the dentist's could also be based on motivational interviewing technique (see previous measures) which focuses on the individual and could be conducted in the context of children's and adult's visits to the dentist or at other dental health check-ups in the framework of basic dental care. It is especially important for children and young people aged from 3-19 who have regular dental check-ups to include motivational interviews about dietary habits. Health interviews should be documented in patient records and should be continuously followed up and evaluated.

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Sports policy

Sports policy represents a specific part of public movement policy and comprises activities promoting sports and exercise and which also contribute to better public health. The objective of sports policy is to provide everyone with the opportunity to exercise and pursue sports to promote good health. State support should be distributed to activities that stimulate children's and young people's interest in sport and exercise, offer sports for everyone who wants to participate, prioritise equality, integration and good ethics and allow children and young people to participate in decisions in clubs and associations. Sports policy issues are described in detail in 'Sports Policy for the 2000s' (1). Sport is a popular movement which, through clubs and associations, has around 3 million members including 500,000 voluntary instructors and coaches and represents an important actor in society and a provider for public health.

Measure 26

A health economics evaluation should be carried out on the '*Handslaget med Idrotten*' (Handshake with Sport) initiative.

Actor: Government

Motivation

Parliament decided in 2003, after a proposal submitted by the Government, to invest a total of SEK 1 billion over a four-year period to enhance the public health profile of the sports movement by helping sports to open doors to more people, restrict increases in charges, invest more in sports for girls, participate in combating drugs and cooperate with schools. The follow-up to *Handshake with Sport* after the first year (3) shows that three main areas have been in focus: opening doors to more people (34 per cent of the project) in which many measures were directed towards activating children and young people from immigrant backgrounds and the disabled; cooperation with schools (27 per cent) to activate children who are not active; and to focus on sports for girls (26 per cent). Moreover, 85 associations have received EUR 900,000 in support for facilities and projects to stimulate better access to participation in sports in the local environment. A total of EUR 1,1 million has also been distributed by the Swedish Sports Confederation to larger, more general investments. The follow-up did not reveal, however, how successful the Handshake with Sport has been so far in reaching new groups of children and young people.

Criticism has been expressed from a number of voluntary organisations (4) about the imbalance in resource allocation to different voluntary organisations and Handshake with Sport has also been mentioned. It is therefore important that the stakeholders involved make an effort in the follow-up and evaluation of the Handshake with Sport and other state support to sports and evaluate the extent to which the investment has satisfied the criteria set up. The Swedish Sports Confederation also believes it is important that the investments made are followed up and evaluated both on a scientific basis by researchers and in the form of simpler surveys to assure quality. The investments

and their objectives can be seen as a gigantic public health intervention and should therefore be evaluated from a health economics perspective which would also provide sport as a whole with new knowledge which could be used in future investments. Such an evaluation would, not least, be of considerable interest internationally.

Measure 27

The Swedish Sports Confederation should develop its policy document ‘Aims of Sports - aims and guidelines for the sports movement in the twentieth century’ to include more public health issues in general and relationships between food and health in particular, and to draw up recommendations for sponsorship in sport. Participation by women and girls should be reinforced at all levels.

Actor: Swedish Sports Confederation

Motivation

The policy document ‘Aims of Sports’ (2) presents the Sports Confederation’s aims for the sports movement including its impact on public health, values, gender equality and cultural development. It is stated that the sports movement should design sports along the following lines:

- Continual development and improvement in all areas regarding form and content.
- Everyone who wishes to do so, regardless of ethnicity, religion, age, sex, nationality and physical or mental capacity may participate in sports activities.
- Providing experiences and encouraging contact between people from different social groups.
- A participatory approach to decision making.
- Providing everyone who takes part with camaraderie in a secure social environment.

At the same time, there are many examples of sports clubs and instructors whose behaviour departs from the intentions of ‘Aims of Sports’, which may be an indication that the intentions expressed have not been adopted by everyone in the sports movement. The need for debate and knowledge may therefore be considerable. ‘Aims of Sports’ states that the sports movement should take up a clear position against attitudes which are negative and destructive for society and that it is important that successful competitive sportsmen and women know what constitutes a healthy lifestyle and how the body is affected by drugs. The Sports Confederation has also published guidelines for alcohol and tobacco in sports (5). On the other hand, there are no guidelines for other issues such as diet and health and energy-dense food and overweight. Although these areas are not directly the responsibility of the sports movement, the movement has the potential to influence many children, young people and adults to live more healthily, which could contribute to enhancing the credibility of the sports movement even further. In recent years, criticism has been directed towards the cooperation with and sponsorship from commercial interests promoting energy-dense food and sweetened drinks, such the cooperation between the Swedish Track and Field Association and

McDonalds (6). It is therefore necessary to clarify, on behalf of the Sports Confederation, the importance of eating healthy food to maintain energy balance and weight control, especially for children and young people, as well as to initiate discussion in the sports movement concerning appropriate cooperative partners and sponsors. It is important to work to communicate the intentions of 'Aims of Sports' to clubs and associations, special and district associations affiliated to the Sports Confederation.

Several studies indicate that boys to a greater extent than girls are active in playing sports and that boys' sports are favoured in various ways (7-8). Around half of all girls and 2/3 of all boys are members of a sports club (8). The sports movement has traditionally been strongly male-dominated and gender equality work has not played a very prominent role (9-10). Dorfinger's and Moström's (11) survey of gender equality work in the sports movement during the 1990s demonstrated that few of those in leading positions were aware of the gender equality plan for sports (12). Åström (10) has demonstrated that there has been an organisational resistance to adopt the Sports Confederation's directives and objectives and that in economically difficult times, the recruitment of corporate managers to boards of directors has been given higher priority than gender equality objectives. Even though gender equality has been included on the agenda during recent years as a result of the policy document 'Aims of Sports' (2), the report 'On the same terms' (13) and updated guidelines for equality work (14), women are still under-represented both on boards and in club executives as well as among those who play sports. This may explain why girls and women are not favoured in the same way as boys and men in sports. Women represent around 38 per cent of the total members, one third of trainers and instructors, only 27 per cent of the boards of sports associations and 38 per cent of the Sports Confederation Board (6,8). The Sports Confederation's review of the competition and exercise habits of people in Sweden in 2003 stated that around 41 per cent of women in Sweden are either passive or active members of a sports club (8). An egalitarian distribution of the sexes in decision-making positions and on the boards of the sports movement is very important for influencing the focus of activities towards greater gender equality and the promotion of broad sports for all. Work to achieve a more equal distribution of the sexes in the managing bodies of the sports movement at all levels should therefore be intensified.

Measure 28

Municipalities should carry out an inventory of their current facilities for exercise and spontaneous sport from the point of view of gender equality and equal opportunities and expand them where necessary. Municipalities should ensure that all those living in urban areas have access to local sports facilities within 2.5 kilometres of home and more basic facilities within 1 kilometre of home. It should be possible and safe to get there by active or public transport.

Actor: Municipalities

Motivation

The municipalities are responsible for the larger part of public facilities including just over half of Sweden's sports facilities (15). The municipalities therefore have considerable scope for creating favourable conditions for physical activity, for example, by generating a wide range of local sports facilities and/or more basic sites for activities. The distance to a facility or similar site for physical activity is very important for the extent to which people are regularly physically active. If the distance to a park is more than about 1 kilometre, the likelihood of it being used on a regular basis decreases. Research indicates that more or less all residents regularly use an attractive park or similar green area if it is situated within 200 metres of their homes (16).

Local sports facilities should be open for everyone regardless of age, interests and capacities, it should stimulate activity and social interaction, it should be used at all times of the year and it should offer many different alternatives. It should be situated in residential areas and possibly not be open for competitive sports (15). The general aim of local sports facilities should be that the opportunities are improved for everyone to engage in physical activity in their local community.

Reducing grants to sport and leisure in the municipalities can increase the risk of creating serious obstacles to a physically active lifestyle and participation in exercise. A survey of the country's 290 municipalities (17) demonstrated that:

- 75 municipalities (26 per cent) have either increased their support to sport in 2004 or believe that they will do so shortly.
- 118 municipalities (41 per cent) have either reduced their support to sport in 2004 or believe that they will do so shortly.
- A total of 42 municipalities (14 per cent) have in some way reduced their support in 2004 and have plans to continue to make cuts in support in the future.
- 9 municipalities (3 per cent) have reduced both the direct support such as support to facilities as well as having plans to continue to make cuts in support in the future.

The extent of these savings is not known and it is difficult to estimate exactly how it will affect the general significance of municipal support for the finances of clubs and associations and the fact that four out of ten municipalities have made cuts in support or will probably do so represents a clear risk that sport and exercise facilities will be adversely affected or that existing facilities with membership or fees will have to increase their charges. In both cases, the risk is considerable that groups with weaker incomes will be the first to be affected. The state already contributes to municipal

facilities and projects via the *Handshake with sport initiative*, which stimulates better access to sports activities in the local environment, but these resources probably cannot compensate for cuts in municipal support. In order to decide on any further state contribution after 2007 to sport and the objectives for this, it will be important to evaluate the resource allocation, see also Measure 26.

Measure 29

Sports and leisure clubs in collaboration with county councils should train leaders in ‘physical activity on prescription’ according to methods developed by SISU Sports Education and organise local activities.

Actors: The Swedish Sports Confederation, SISU Sports Education in cooperation with county councils.

Motivation

Physical activity on prescription (FaR) is an approach underway in primary health care and in all county councils in Sweden. The method is a concrete way of working with a more preventive and effective approach to reach people with sedentary lifestyles (18), see also Measure 23 in the section Health care policy. Research abroad demonstrates that structured FaR programmes that include group activities have succeeded in increasing physical activity among different groups although only during the time when programmes are in progress (19). In the international scientific literature, several success factors have been reported for physical activity on prescription. At the individual level, these factors include improved self-confidence through mutual encouragement and support, new friends and an improved quality of life. Another positive side-effect was that personnel increased their physical activity (20). The work was initiated by the Institute of Public Health which gave YFA (Professional associations for physical activity – which is part of the Swedish Medical Association) the task of presenting scientific evidence to be able to use physical activity as a complement to treatment with medication for a number of common diseases or as disease prevention. This work resulted in FYSS (physical activity in disease prevention and treatment) which was issued by the state pharmacists Apoteket AB to all healthcare centres and county councils (21). FYSS has also been published in a popular version, FYSS for all, and is sold at Apoteket AB – the Swedish Pharmacies. The Institute of Public Health has conducted a first evaluation ‘Experience of Physical Activity on Prescription – FaR’ (18) which summarises experiences from the pilot project. SBU is currently working on a systematic review of methods to promote physical activity in which FaR is included.

Many county councils have made political decisions, started training courses and have set up special organisations for cooperation between patients, health services and clubs and associations. SISU Sports Education has developed a training concept for sports associations. The Swedish Sports Confederation and SISU are currently implementing training programmes for instructors who will be working with FaR.

Clubs and associations have considerable potential to contribute to the implementation of the FaR programme thanks to their establishment in local

communities and extensive instructor resources, but the need for training is considerable to be able to deal with more sedentary groups of the population. It is important to point out that prescription of FaR programmes for patients with high risk of disease and many risk factors, such as cardio-vascular problems, should be conducted by suitably trained health personnel and clinics (22). The implementation of FaR programmes for people free from symptoms (with no or few risk factors) can often be run in cooperation with occupational groups such as health instructors, suitably qualified personal trainers, instructors for sports, health coaches and so on.

Measure 30

The sports movement should develop its activities so as to attract people with a sedentary lifestyle, people with an immigrant background and those with disabilities who wish to participate in amateur sports. The Sports for All Council should be given more resources to open doors for more people.

Actors: Swedish Sports Confederation/Sports for All Council and local clubs.

Motivation

The sports movement has considerable potential to attract adults thanks to its presence in the local community and the fact that many continue to be members in a sports club after the 'end of their careers'. Participation in sports and membership in sports clubs falls with rising age to encompass a relatively small proportion of the population. The greatest drop-out of active members occurs at the ages of 15-19 and in the group 60-70 years even though the number of passive members increases with increasing age up to 60 years (8). In the 7-14 age group, just over 76 per cent (713,100 children) are members of a sports club of which the largest majority are active members. In the 40-49 age group, 42 per cent are members in a sports club of whom around half are passive members (8). There is a clear need to offer more adults and elderly people better opportunities to take part actively, exercise, train and do sports in the sports movement.

The report 'Health on equal terms – national objectives for public health' (23) states that the sports movement, including sports for the disabled, is significant in stimulating participation in sports and exercise. The type of support provided is very important to promote physical activity of different groups. It is important to draw attention to the need for broad sports activities in the context of granting support. The objective of sports for the disabled is to ensure that people with disabilities of all ages become fully involved in the life of society and to create equal living conditions, which is important for offering everyone the opportunity to take part in physical activity through active recreation and outdoor recreation. A number of laws are relevant to this area including the Social Services Act (24), the Health and Medical Services Act (25), the act concerning support and service to certain people with disabilities (26) and the Planning and Building Act (27).

A large number of children and young people in Sweden are members of one or more sports clubs at some point in their lives, which makes the sports movement by far the most popular organised leisure activity for children and young people. Around half

of all girls and two thirds of all boys are members in a sports club (8). The differences in living conditions are reflected in the sports and exercise culture with clearly observable gaps between different groups of the population. Regarding exercise, activity and sport, girls from the poorer areas of large cities exercise least compared with other children and young people. The increased focus on competition in sport in combination with the system of grants that currently exists leads to a very early debut and specialisation in some sports. An early competitive debut for children often demands considerable parental involvement and access to a car in the family is often a necessity, which creates a certain amount of social and economic imbalance (28). Furthermore, an early debut in competitive sports involves the risk that sports clubs exclude children whose interest in sport starts later when, by the age of 12, it may already be too late to start with a competitive sport (29). Physical training and sporting activity has to be seen as a right in which all children may take part. Play and competition, with a greater element of random play and excitement, should be given much greater emphasis (30).

The Sports for All Council was formed in 2003 to underline the role of the sports movement in public health with responsibility for children's and adult's wanting to exercise without competition. The Sports Confederation's Sports for All division works in the field of 'Sports development' and probably has better conditions than other associations in the Confederation to open the doors for new groups of the population.

Measure 31

Education programmes for sports leaders/coaches should contain courses about the importance of dietary habits for health and about eating disorders and sports anorexia.

Actors: Swedish Sports Confederation/SISU Sports Educators and sports colleges

Motivation

The occurrence of eating disorders and anorexia in sports has attracted the attention of the media in recent years. Eating disorders occur more often in a sporting context than among the population in general, especially in sports where hard training is required with attempts to lose weight to help form an agile body or achieve certain criteria for weight categories (31-34). In a study of 1,620 elite sportsmen and women, it was found that 20 per cent of the women and 8 per cent of the men fulfilled the criteria for anorexia or bulimia, compared with 4.6 per cent in the control group (33). Studies have found a lack of knowledge regarding eating disorders among sports instructors and few instructor courses seem to draw attention to the problem (34). Risk individuals should be identified at an early stage and be treated with a well-balanced diet with increased energy intake and less physical activity, otherwise they run the risk of bone fractures and the development of anorexia nervosa. The education of coaches, trainers and parents of young sportsmen and women is therefore important (35) in preventing eating disorders, discovering the early symptoms of eating disorders and providing skills in how to support people with such problems.

There are also many myths in circulation in sports about diet, food and health. Many active sportsmen and women use food supplements unnecessarily and at worst this can lead to imbalanced nutrition. To counteract this development, sports instructors should be educated in diet and health based on scientific facts and with Swedish nutritional recommendations as a foundation. It is also very important that sports instructors working with children and young people convey the right message about food and physical activity.

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Consumer policy

Consumer policy aims to strengthen and protect the position of the consumer on the market using different control instruments. The policy also aims to achieve the objective of long-term sustainable development by supporting the development of consumption and production patterns which reduce the pressure on the environment. The policy should also ensure the availability of healthy food at a reasonable price for everyone in the population and develop the local and regional work for good accessibility of commercial services.

To accord public health its appropriate status, the Government's objectives should be: 'To promote consumption and production patterns which reduce the pressure on the environment *and on public health* and contribute to long-term sustainable development' (the addendum is in italics).

Strengthening of consumer policy may be necessary mainly to protect weak groups such as children and socio-economically exposed groups.

In concrete terms this means that the proposals for measures within this policy area are directed towards issues concerning the availability in outlets, cafeterias and restaurants, marketing targeting children and financial support to consumer organisations to follow developments of and commercial aspects of important groups of food products.

Measure 32

Sweden should work at the EU level to ensure that TV food advertising targeted at children is banned throughout the EU.

Actor: Government

Motivation

Children (according to the *UN Convention on the Rights of Children*, the age at which a child is considered an adult is 18 years) today are exposed to very considerable commercial influences. Children are an important target group for the food industry since brand-recognition occurs at an early age. Furthermore, they now have large amounts of money to spend themselves and also exert considerable influence over the food product choices made by their parents. During the time when children can be expected to watch TV, commercials are broadcasted for energy-dense products such as chocolate, breakfast cereals (the majority sweetened), ice cream, soft drinks, sweets and fast foods. In 2003, commercial air-time for these products on TV was purchased between 7 and 8am for EUR 2,6 million and between 5 and 8pm for EUR 23 million (1). None of the ten most commonly advertised food products on TV in 2003 were among the foods the population were recommended to eat more of. Instead, the majority of them comprised energy-dense products. In addition to these products, 11,916 commercial slots were advertisements for fast food restaurants in 2003 (2).

In Sweden, in accordance with radio and TV broadcasting legislation, advertising is not permitted before and after a children's programme. Children's programmes may not be interrupted for commercials. Furthermore, TV commercials may not aim to capture the attention of children younger than 12 years. The National Consumer Ombudsman enforces these regulations, which apply to the Swedish commercial channel, TV4. Since the Swedish channels TV3 and TV5 are broadcast from Britain, they are not covered by the legislation prohibiting advertising to children. On the other hand, even the advertising targeting children on these channels must follow the TV Directive's regulations and national marketing legislation, which stipulates that advertising to children should not be misleading.

It is not always clear what can be defined as advertising aimed at children and the distinction sometimes has to be legally tested. Several legal judgements in the Swedish Market Court (3) have resulted in the TV advertising ban in Sweden being eroded, to some extent, a point discussed at length by the Consumer Ombudsman in a report to the Government.

Children of parents with low socio-economic status watch more TV advertising and develop a lower degree of nutritional awareness than other children (4). It is likely that TV advertising establishes or reinforces the attitudes to food that exist in the environments in which the child lives. Exposure to food commercials on TV had, in a study, a greater impact on food purchases in families with low socio-economic status than in families with higher socio-economic status (5). It is possible that families from lower socio-economic background find it more difficult to resist the commercial influence of advertising for unhealthy foods.

WHO believes that heavy marketing of energy-dense foods and fast food outlets, probably is a contributory factor to overweight and obesity (6). In Britain, the Food Standards Agency, concerned about the development of overweight among children, commissioned research into the effect of TV food advertising on children (7). The result, published in the Hastings Report, is the largest systematic review of research so far conducted in the field.

The review demonstrated that children are more inclined to choose food with a high fat, salt or sugar content than alternatives with a low content of these substances after having seen TV commercials for food. Advertising affects purchasing behaviour, food preferences and consumption. The effects are significant, independent of other factors, and operates at both brand and category levels. Effects at category level, that is when children choose sweets instead of fruit, are the greatest problem from a public health perspective. Even effects at brand level, such as choosing sweetened cereal rather than unsweetened, can also affect public health because sweetened cereals have more added sugar. The Hastings Report focuses only on TV advertising and the result therefore underestimates the total impact food advertising has on children.

The Hastings Report has been reviewed on seven occasions and was given considerable support. It has now been approved by the Food Standards Agency and Ofcom (UK Telecommunications Regulator). The Department of Health in Britain published a white paper on public health in November 2004 (8) which expresses a strong need to limit marketing of food and drink containing high quantities of fat, salt and sugar. The Broadcasting Commission of Ireland has, in the Children's Advertising Code from October 2004, included requirements for information in written or verbal form in

connection with TV commercials for fast foods (*should be eaten in moderation*) and for sweets (*snacking on sugary foods and drinks can damage teeth*) (9). The regulations apply to children under 18, a much higher age limit than the Swedish limit of 12 years.

A prohibition should be appended to the new EU work underway on the directive on unfair commercial practices. The proposal is currently in the process of a second reading in parliament. Alternatively, restrictions relevant to children should be included in the work in progress on the directive on nutrition and health claims made on food.

Measure 33

The prerequisites for restricting food marketing activities targeted at children should be examined, e.g. in respect of existing legislation. Trends in marketing should be continually monitored. A collaborative group for responsible marketing should be created.

Actor: Swedish Consumer Agency

Motivation

Apart from TV, food industry uses many other channels and methods to get their message across to children including radio, comics, the Internet, mobile telephony, cinemas, food product packaging, toys distributed by fast food chains, product placement, sponsorship and so on. The children's comic *Kalle Anka* (Donald Duck) is one example of a popular channel for reaching children. In 2003, the advertisements for food products in the comic largely comprised sweets. Also included were advertisements for sweet breakfast cereals, desserts, cakes and fast foods (1). The trend is moving increasingly towards new technologies such as a channel for commercial messages. These channels are both cheap and can be made more target specific than TV advertising.

In its Global Strategy for Diet, Physical Activity and Health, WHO recommends that messages promoting unhealthy dietary habits should be discouraged. In the WHO Technical Report on Diet, Nutrition and the Prevention of Chronic Diseases it is stated that the exposure of young children to heavy marketing practices of energy-dense, micronutrient-poor foods should be limited. In the strategy, governments are also encouraged to work with consumer organisations, the food industry and the advertising industry to develop measures for how the marketing of food to children should be managed (10). In the WHO report *Marketing Food to Children: the Global Regulatory Environment* (11), the importance of health being given a central place in policy documents on marketing targeting children is underlined. The issue of measures required to highlight food as a product category in need of special focus from a public health perspective is also raised in the report.

Sweden is often cited as a role model in the context of advertising targeting children and could become one of the first countries in the world to regulate the ways in which food is advertised to children for public health reasons. There is strong support for a ban on advertisements targeting children in Sweden. Eighty-four per cent of the

adult population would like either to extend or retain the ban on TV advertising aimed at children, 82 per cent support the introduction of restrictions on advertising other than TV advertising, and 73 per cent believe that there is too much advertising aimed at children on the Internet (12).

An assessment should be made of how restrictions on advertising targeting children could be best implemented. The advertising and food industries have often argued that self-regulation and self-monitoring would be the best way to approach the problem. The International Chamber of Commerce (ICC) has recently developed the ways in which their own behavioural code can be applied to food and drink advertising: “Advertisements for food and drink may neither encourage nor ignore exaggerated consumption, and the size of portions should be appropriate in the environments in which they are portrayed. Advertisements for food and drink may neither undermine the promotion of a healthy, balanced diet nor the importance of a healthy, active lifestyle” (13).

The aim of self-regulation and self-monitoring is not to reduce marketing and cannot be seen as an adequate mechanism for creating an environment promoting more healthy dietary habits among children. The programme of measures is also largely unknown to the consumer. International consumer organisations are critical to internal programmes of measures and want to see more forceful regulation of the marketing of food targeting children (14-16).

The Swedish Consumer Agency has submitted views concerning what might be included in a legal consideration of the conditions for restricting the marketing of food to children. The legislation it might be relevant to reinforce includes marketing legislation and legislation regulating radio and TV broadcasting. It might also be desirable to enhance the jurisdiction regulations and tighten up prohibition regulations in the TV directive.

From the point of view of public health, it would be desirable to continually monitor marketing to minimise the risk of violations of regulations. The Swedish Consumer Agency was previously requested to monitor developments in advertising but it has not been feasible to prioritise this task due to cut-backs. A prioritised measure should be the creation of a working group between the authorities, the private sector and the advertising industry to discuss how public health aspects should be observed in the marketing of food and drink.

Measure 34

Consumer organisations should be able to apply for funding from the Swedish Consumer Agency for monitoring and publicising developments in the marketing of soft drinks, sweets, crisps, cakes and biscuits and ice cream directed at children, and to initiate a debate on such marketing.

Actor: Swedish Consumer Agency

Cost: EUR 53,000 per year

Motivation

In Sweden pensioners' associations have been regularly collecting data on prices for various basic food products for many years and have published this data in the national press and through other channels with comparisons of the data over time. Today many of the larger consumer organisations are involved in issues concerning food advertising directed to children and these organisations would like to see restrictions of such marketing. Consumer organisations are important actors in monitoring all the various strategies used by the food product sector to market its products, stimulate debate on these strategies and capture attitudes among the population.

This suggested measure will enable consumer organisations to apply for grants to collect representative data in a structured way concerning different aspects of marketing and sales of soft drinks, sweets, crisps and cakes and biscuits as well as fruit and vegetables. In such surveys information may include the marketing of food products with the help of toys and fun packaging, campaigns such as attractive pricing and quantity discounts for soft drinks, sweets, crisps, ice cream, cakes and biscuits; packaging size, price marking and comparative price marking; changes in portion size of soft drinks, sweets, snacks, ice cream, cakes and cookies and the positioning of these products in the shops. The continual monitoring of large areas such as marketing of food directed to children demands resources which consumer organisations lack today. To effectively be able to conduct opinion building, the Swedish consumer organisations need more resources.

Parents' associations, through consumer organisations, are given the opportunity to express their views. The Consumer Association Stockholm has recently started a parents' jury which has expressed opinions on food advertising to children (17).

As an example of how consumer organisation abroad work we can mention the consumer organisation Consumer Alert which has recently produced a Parents' Bill of Rights. In this document they demand that parents should be able to communicate directly with advertisers through radio and TV, that companies should openly account for which advertising companies they use and who has performed their market surveys. Moreover, they would like to see disclosure of product placement (18) and control over how personal data about children is used in commercial contexts.

Another example is the Parents' Jury in Britain, coordinated by the Food Commission, which with 1,700 members continually monitors the various approaches used by the industry to reach children with commercial messages and alert parents to nutritionally inferior products and sales tricks (19).

Measure 35

Material directed at young people about food marketing in relation to health should be produced.

Actors: The Swedish Consumer Agency in cooperation with the National Institute of Public Health

Cost: EUR 53, 000

Motivation

Children have large sums of money at their own disposal. The average monthly allowance for 13, 14, 15, 16 and 17 year-olds is EUR 38, EUR 48, EUR 61, EUR 82, EUR 100 respectively, over and above the extra money many young people are given by their parents (20). Young people therefore have substantial purchasing power and have considerable influence over their parents' purchasing habits. The Swedish Consumer Agency believes it is necessary for children and young people to become more aware of the influence they are subjected to and that there are alternative sources of information. They are then able to develop their own attitudes to marketing and consumption (21).

Part of the process of supporting young people in their role as consumers and making it easier for them to think critically regarding advertising is providing them with educational material revealing the purposes of advertising. This material should be able to be used in compulsory schools and upper secondary schools and should be designed as a teacher's guide with secondary and upper secondary pupils as the target group. An example is available in *Trix och Trender i reklamen* (Tricks and Trends in Advertising), a guide for teachers produced by the Consumer Agency in 1999. Another example is the guide material, *Tillsammans – mot tobak* (Together – combating tobacco), produced by *A non-smoking generation* as part of the project 'Tobacco Prevention, A multi-component programme'.

The new material should be directed at the link between advertising and lifestyle habits/health in which advertising aspects related to tobacco, alcohol and gambling can be added. The production of the material should be conducted in close dialogue with the Institute of Public Health. The material should be included in a dissemination strategy.

Measure 36

Municipalities and schools should adopt a food sponsorship policy. The guide developed by the Swedish Consumer Agency, the Swedish National Agency for Education and the Swedish Association of Local Authorities should be used as a starting point.

Actors: Municipalities and schools

Motivation

Sponsorship is a commercial cooperation between a school and a company. According to a survey by the National Association of Teachers at the end of the 1990s, 60 per cent of compulsory schools had been sponsored by companies or organisations. The majority of the teachers in the survey could consider accepting a sponsorship offer on condition that the sponsors did not influence the content of instruction (22). Danisco Sugar is one example of a company that has produced teaching material for primary school pupils in the form of a comic book about how sugar is made. The comprehensive extent of sponsorship in American schools by soft drinks producers, fast food chains and large food product chains and the impact on the pupils' choice of foods is well documented (23-24). The considerable cut-backs in Swedish schools increase the risk for sponsorship by food producers in schools, a development that sends false signals to children and young people and leads to a deterioration in dietary habits.

The attitudes to sponsorship in schools vary somewhat. The Teachers' Association believes that it is not wrong in principle to accept support, but that sponsorship may not be associated with conditions and schools should never be placed in a state of dependence. The national parent-teacher association *Hem och Skola* ("Home and School") believes that schools are on their way of becoming market places and fears that schools are rather naïve in this respect, which may reflect a lack of teaching materials and resources. The association wants to work to develop ethical rules to help schools to assess sponsorship offers. The pupil organisation, an interest organisation for Sweden's school pupils, is in principle against sponsorship, especially the need for sponsorship. They believe that all schools should have the same economic conditions and that the role of schools as impartial transmitters of knowledge is crucial. It is especially serious when sponsorship targets younger children. The National Association of Teachers is positive to sponsorship so long as it is not a compelling force. Sponsorship may not become a necessary part of financing (22).

Sponsorship at schools is increasing in extent and both the type of sponsorship and the methods are constantly changing which places considerable demands on both the providers and receivers. Children in compulsory school are obliged to attend school and therefore are unable to choose not to be influenced in the manner implied by sponsorship. There is currently no legislation expressly forbidding sponsorship of school activities.

The Swedish Consumer Agency in cooperation with the National Agency for School Improvement and the Swedish Association of Local Authorities, has produced guidelines for the development of a policy for commercial cooperation between schools

and enterprise (25). The guidelines provide proposals for what a sponsorship policy should include, decisions on policy and the various regulations.

An important aspect in the assessment of a sponsorship offer is the ethical element. The company activities should not include products that are incompatible with the values of the school. Unhealthy food can be identified here as a product which should not be included in sponsorship. It is of central significance that the policy is familiar to both the school and to enterprise and that it is spread to pupils and to parents.

Measure 37

The Government should develop a form of dialogue with the food sector's various trade organisations in the areas of food production, distribution, retail and catering in order to discuss how the food sector can contribute to healthy dietary habits. The result may be a voluntary agreement, such as an ethical code.

Actors: Government in cooperation with the Swedish Consumer Agency, the National Food Administration and the National Institute of Public Health

Motivation

The food sector is one of the most important actors when it comes to promoting healthy dietary habits. It represents both part of the problem with unhealthy dietary habits and part of the solution for healthy dietary habits. The significance of the food sector taking responsibility for public health emerged unequivocally at the hearings held during the year as part of this assignment, it also emerges in other national action plans and in WHO's global strategy for food, drink, physical activity and health. Many concrete proposals have been presented such as:

- Develop healthier products based on fruit and vegetables.
- Develop more consumer-friendly packaging with fruit, vegetables and wholemeal bread.
- Develop the range of food products, ready-to-eat meals, meals and snacks that can satisfy the criteria for keyhole labelling.
- Review the pricing of keyhole-labelled food products in relation to similar non-keyhole-labelled products.
- Market keyhole-labelled food products.
- State the price in SEK per kilo rather than per 100 grams (for example for unpackaged sweets).
- Work to increase the availability of keyhole-labelled alternatives at restaurants .
- Offer vegetables with all meals at restaurants.
- Review the placing of various food product groups in outlets from a health perspective, especially concerning children.
- Remove special offers on soft drinks, sweets, ice cream, crisps and cakes and biscuits which encourage purchase or the purchase of larger quantities, as in the case of 'buy three, pay for two', the size of bags and scoops, etc.

- Decrease the size of portions of ice cream, sweets, soft drinks, crisps and cakes and biscuits.

The food sector should work on these issues and develop internal action programmes and policy documents. To achieve greater impact, an ethical code should be produced stating the points of departure for the actions of different actors. Producers and retailers should consider the feasibility of formulating a joint ethical code regarding supply, availability and marketing. To stimulate this work, we propose the Government develops a form of dialogue with the different actors in the food sector from which reports can be submitted on how work is progressing and proposals be presented for further activities. The forms this dialogue could take might consist of annual meetings through discussions with certain sectors or with individual companies. Officially collated details should be available as a point of departure concerning sales volumes, prices, marketing and so forth.

Similar forms for discussions/dialogues with the food sector have been held by WHO and the Food Standards Agency in Britain. One example of a voluntary undertaking is the removal of all images of children from the own-brand range of products containing high levels of fat, salt or sugar by the Cooperative Group in Britain. EURO COOP, which includes KF (the Swedish Cooperative Union), is encouraging the food industry to take similar steps.

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Food policy

Food policy aims to use different control instruments to achieve ecologically, economically and socially sustainable food production. The policy also aims to achieve the objective for safe and competitive agricultural production directed by consumer demand and contributing to global food supply. Swedish food policy including agricultural policy is largely controlled by regulations within the EU. Public Health should be promoted within all EU policy areas as stated in Article 152 of the European Constitution (1). As a consequence of this, we propose an objective for agricultural policy as follows: ‘Agricultural policy should promote public health’. EU’s agricultural policy has considerable significance for pricing within several of the relevant product ranges.

This policy area incorporates issues such as food inspection and enforcement activities, the labelling of food products and more externally focused and supportive work to promote healthy dietary habits such as guidelines for healthy food, nutrition and health information and supplementary training. This is an area directly or indirectly affecting consumers’ opportunities to choose healthy foods. Furthermore, the collection of consumption data is a prerequisite for work with healthy dietary habits.

Measure 38

Public health impacts should be assessed and considered in relevant international negotiations and in particular regarding reforms to the EU Common Agricultural Policy. The effects of product support should be given particular consideration.

Actor: Government

Motivation

The main risk factors for non-communicable disease in Europe such as smoking, high blood pressure, alcohol consumption, high blood cholesterol, overweight and low intake of fruit and vegetables (2) are associated with consumption of agricultural products. The EU Common Agricultural Policy (CAP) regulates production, price and to a certain extent the marketing of food, in other words, supply, availability and demand which are all significant determinants of dietary habits. It is therefore important that reforms of the CAP are subject to health impact assessments before decisions regarding reforms are made which would also imply taking into account the intentions of Article 152 of the EU Constitution. The only way of analysing whether health is integrated into all policy areas is through health impact assessments.

Two qualitative health impact assessments have been conducted of the CAP since Sweden joined the EU in 1995 (3-4). Both analyses studied market organisations for fruit and vegetables, milk, wine and tobacco and it was concluded that regulations with negative consequences for public health were still in place. While environmental problems caused by agriculture attract considerable attention, there is still little awareness of the CAP’s negative consequences for public health. This brings to the fore the need for continuous health impact assessments in advance of policy reforms that often occur within one or more commodities at the same time.

The reform in June 2003 removed a large portion of the support to agriculture, resulting in support no longer being linked to production (5). Important sectors for public health were excluded wholly or in part from the reform. The effect of agricultural policy on consumer prices does not promote public health (6). The price of fruit and vegetables is held up by withdrawal support and tariffs on imported products. Beef is heavily subsidised and this contributes to high meat consumption which leads to a high intake of saturated fats. Butter prices are subsidised and school milk support is 74 per cent higher for whole milk (3 % fat) than for skimmed milk (0.5 % fat). According to Svensk Mjölk (Swedish Milk), this leads to a shift towards milk with a higher fat content. According to the 'Guidelines for school lunches', skimmed milk and water are recommended with school meals (7) and the 'Guidelines for meals in child care' (8) recommend semi-skimmed milk (1.5 % fat). At pre-school, 50 per cent of four year-olds drink semi-skimmed milk, 29 per cent whole milk and 1 per cent drink skimmed milk. Among school children (8-11 years), 64-70 per cent drink semi-skimmed milk. The equivalent figures for whole milk and skimmed milk are 6-11 per cent and 5 per cent (9). Both whole milk products and wine are marketed with money from the EU's agriculture budget, in other words, tax revenue.

Discussions are now underway in the EU concerning a reform of the market order for fruit and vegetables and for sugar. EU-produced sugar is 3-4 times more expensive than on the world market, which is positive from a public health perspective. However, from a socio-economic perspective, the use of agricultural subsidies for an unhealthy product is hardly rational. Since 1995, the international price of sugar has been falling, mainly due to global overproduction. The EU sugar reform means that export subsidies have been reduced considerably, that the domestic sugar quota (how much each country may produce with financial support) has been decreased, that intervention (purchase of the surplus) has been abolished and that the price of sugar has fallen by around 40 per cent within the EU. The reform of the sugar sector demonstrates the core challenge agriculture and public health face in the future.

Measure 39

In the EU Commission's impending review of the directive on nutrition labelling, Sweden should work to ensure that nutrition labelling be compulsory for all pre-packaged foods and that all such labelling also contain details about fat quality, sugar and salt (for relevant products).

Actors: Government and the National Food Administration

Motivation

Lists of ingredients and nutrition labelling are important tools for consumers to be able to make conscious choices. Product development leading to new products and changes in the composition of traditional products make lists of ingredients more important in assisting choice today than ever before. Lists of ingredients should, in principle, always be provided on pre-packaged foods. For unpackaged products intended for sale at

outlets, to restaurants and the catering sector, lists of ingredients should be provided on the sales documentation. Nutrition labelling (information about fat, protein and carbohydrates) is voluntary today but where it exists it is often difficult to understand. Information about sugar (provided as 'carbohydrates including types of sugar') and sodium (salt) are more seldom included.

Nutrition labelling can function to support and provide information for consumers. Quite extensive knowledge is needed, however, to be able to interpret this kind of information and render it useful. Surveys indicate that many people who read the nutrition labels find them difficult to understand (10). According to a Nordic consumer survey, 79 per cent of those asked would like compulsory nutrition labelling (10). They would also like labels to be readable and easy to understand. American studies show that a significant proportion of consumers read nutrition labelling (11) and it can influence their choice of food products (12-13). Compulsory labelling may also benefit those who do not read the labels. Since compulsory labelling was introduced in the United States, companies have developed many more products with low content of the substances we should eat less of (14-15). This experience reflects the Swedish situation with keyhole labelling. This has also stimulated product development of low-fat and more fibre-rich products. American studies also suggest that compulsory labelling of food products can be cost effective from the point of view of health (16).

A Nordic project drew the following conclusions concerning nutrition labelling of food products: it should be compulsory, standardised, follow a compulsory list of nutrients stated per gram and per portion, and a simple system should be developed and tested for guidance about the product's 'nutritional soundness'. On the other hand, details of recommended daily intake (RDI) should not be used since they were considered too complicated (10).

Within the EU, work is underway to revise the regulations concerning current nutrition labelling from 1990 (17). An initial proposal is expected to be submitted at the beginning of 2005. Sweden should actively promote labelling becoming compulsory and, in addition to energy, protein and carbohydrates, labelling should also include salt, sugar, saturated fat and trans fats (for all relevant products). Exceptions or special regulations for certain product categories may require discussion. It is also important to promote labelling which is clearer and easier to read. Sweden should also encourage investigation into how these regulations can be applied to unpackaged foods and food sold in restaurants and cafeterias.

Measure 40

An enquiry should be carried out on how diet and health issues can be included in the national food safety work and on how food inspection and enforcement activities can be expanded to include nutritional aspects. Such measures could be linked to companies' self-inspection programmes.

Actor: Government

Motivation

The supervisory authorities (primarily the municipal environment and health protection committees, in some cases the National Food Administration) ensure that food companies live up to the demands in food legislation. For this reason the supervisory authority is entitled to have access to food premises for inspection and tests. The authority is also entitled to receive on request the information and documentation necessary for supervision.

A system of self-inspection exists among food companies to ensure that the demands in food legislation are satisfied. Self-inspection should be documented in a self-monitoring programme. Self-inspection can then become a tool for food companies to systematically review their activities, establish a system and follow it to avoid and limit the production of poor quality food or causing illness.

In discussions with the industry in 2003 for a report to the minister of agriculture it became apparent that some companies and industry bodies had formulated different types of policy documents which are either more generally about nutrition and public health or directly focused on the problem of overweight. These efforts on the part of companies are welcomed as a positive and constructive approach. We propose that this principle is compounded and an enquiry initiated into whether companies can be required to produce some kind of action plan and possibly even health impact assessments within the framework of self-inspection activities.

So far it has not been feasible to include nutritional aspects in supervisory work with the exception of checking labelling information and some oriented examinations of the fat content in keyhole-labelled lunches, in other words in the few areas where recommendations exist. The enquiry should establish the extent to which it is feasible to include further nutritional aspects in future food safety work.

The proposal to use public supervision appears to lack any international equivalent and can be expected to attract attention in the EU.

Measure 41

The prerequisites should be investigated for requiring the relevant employers in the food sector to ensure their employees have the necessary training in basic diet and health issues.

Actor: The National Food Administration

Motivation

Important competence would enable the relevant personnel at cafeterias/restaurants to make simple nutritional calculations including a fat/energy estimate, while shop personnel would be able to provide information concerning the principles behind keyhole-labelled products, or production personnel would know about the health impact of different kinds of fats.

An important issue relates to knowledge and attitudes among those concerned within the food sector, from directors of boards to serving personnel at fast food chains. The need for education is considerable but we should point out that some education programmes are conducted by the food sector itself. Among concrete problems that can be mentioned are the very negative attitudes of certain cafeteria/restaurant personnel and obvious difficulties originating from a significant lack of knowledge regarding nutrition, such as when asked to calculate the nutritional value of a meal.

Due to this type of problem there is a need to work out a basic course with some different profiles and encourage the sectors to promote training in various ways through their member organisations. Investigations should also be made into whether it is feasible in food legislation to place demands on competence in nutrition such as the ability to calculate energy and fat content in a portion served. The equivalent demands are currently imposed today on food hygiene.

An examination of this measure could be linked to an enquiry requested by the Government into proof of competence (an occupational 'drivers' license') regarding hygiene criteria.

Measure 42

Data on food supply, food prices and marketing of certain food groups (fruit, vegetables, keyhole-labelled foods, sweets, crisps, soft drinks, cakes, biscuits and ice cream) should be compiled annually in the Statistical Yearbook of Sweden.

Actors: The Swedish Board of Agriculture in cooperation with Statistics Sweden

Motivation

Since the beginning of the 1940s the Swedish Board of Agriculture has been responsible for data of food consumption nationally and for the nutritional content of the diet. The data is included in an integrated section covering total national consumption in the national accounts produced by Statistics Sweden. The consumption data is reported as direct and total consumption of food and as nutritional content in the diet and is compiled by the National Food Administration on the basis of the Board of Agriculture's calculations of quantities consumed.

Direct consumption comprises the total supplies of food products to individual households and catering along with the producers' domestic consumption, known as natural consumption. Direct consumption of various food products is stated both in terms of quantity and nutritional content in the diet. Quantities consumed are reported, as far as possible, in the form in which products reach the consumer, in other words as agricultural products (raw materials), semi-processed, canned, frozen products, processed food and equivalents. The data on quantities consumed is based on several sources and many of the product groups are based on combined sources to achieve the final result. For example, information concerning production of processed food is obtained from Statistics Sweden. Total consumption comprises the total utilisation of different raw materials for human consumption.

The statistical data published annually by the Board of Agriculture does not suffice to be able to track changes in consumption concerning sweetened drinks, different types of confectionery, crisps and cakes and biscuits with other products high in sugar and fat, for different groups of the population. Even for fruit, root vegetables and vegetables, a higher degree of detail is probably needed than is currently made available. Statistics here are complicated by home grown production, mainly of fruit and berries.

There is therefore a need for statistical data with a higher degree of detail and the Board of Agriculture should be requested, in cooperation with Statistics Sweden and the relevant commercial organisations, to develop a method for collecting this data and be responsible for annual reporting.

Measure 43

The work of applying keyhole–labelling should be intensified, particularly regarding labelling of meals and inspection/enforcement of this within the restaurant and large-scale catering sector.

Actor: The National Food Administration

Motivation

The use of the keyhole symbol for labelling has existed since 1989. The symbol is a trademark owned by the National Food Administration and labelling using the keyhole has indicated low fat content and/or high dietary fibre content. The aim of current keyhole labelling on pre-packaged products is to provide guidance for the consumer regarding low-fat and fibre-rich food products. The symbol acts as a simple indication of healthier food products and the choice of keyhole products should be able to contribute to healthy dietary habits and good health.

The National Food Administration proposed revision of the conditions for approval to use the keyhole on pre-packaged food products in the autumn of 2004 (18). The proposal, which is currently submitted for notification to the EU, suggested that naturally low-fat foods and fibre-rich products should also be approved for labelling, such as meat, fruit, berries, vegetables, root vegetables and potatoes. Labelling is also proposed for low-fat and fat fish. It is also suggested that the criteria for fat and dietary fibre for some food groups should be tightened up and that criteria for sugar and salt are introduced for some groups of food products. The keyhole will then provide an indication of which foodstuffs people should eat more from. Studies have shown that the symbol is well-known among consumers and could have some influence over choice of food products (19-20).

Food dishes served at restaurants may be labelled with a keyhole symbol if they fulfil certain criteria regarding fat content and food product components. The symbol is used increasingly these days but controls are unfortunately unsatisfactory. The range offered by restaurants is always changing and menus including drinks and buffets are becoming increasingly common. Apart from the meal itself the nutritional quality of the meal is influenced by additional aspects such as salad dressing, bread, the type of fat used and which drink one chooses. The National Food Administration now intends to review the criteria for keyhole labelling of meals and food served in large-scale catering, restaurants and fast food chains. Supervision of labelling will be particularly examined.

If the proposal for new conditions for keyhole labelling recently submitted is accepted by the EU, an active implementation will ensue with high priority on the new keyhole on food products in shops and in large-scale catering.

In Britain the authorities have recently proposed introduction of an indicator system for food products. The Government and industry wish to develop better nutrition information on packaged foods and also introduce a labelling system as a guide to consumers to choose healthier options. The primary nutritional substances will either be combined in a single indicator or separate information will be given for fat, saturated fat, sugar and salt in an indicator system using green, yellow or red. The British

authorities will have worked out the new system by the summer of 2005 to come into force in 2006. A similar Swedish proposal was presented in a government enquiry in 1984 (21).

Measure 44

Nationally representative dietary surveys should be carried out so that different age groups are monitored every 10 years. These surveys should contain validated questions on physical activity and body weight. The surveys should be supplemented with targeted studies on different population groups (in terms of ethnicity, socio-economics, gender), and specific studies on certain food groups.

Actor: The National Food Administration

Cost: EUR 320,000 per year

Motivation

Information concerning how different groups of the population eat, how their dietary habits change, how their nutrition intake agrees with nutrition recommendations and their degree of physical activity is completely decisive for all public health work aimed at healthy dietary habits and increased physical activity. Without such knowledge, it is impossible to identify deciding factors and risk groups, to evaluate and follow-up public health work and to propose targeted measures. Knowledge about the nutrient intake of different groups of the population also provides the basis for enrichment of food products with nutrients and for risk evaluation and limit values for various supplementary substances in food products. Regular dietary surveys including questions about physical activity are therefore absolutely essential for implementation and follow-up of a national action plan for healthy dietary habits and physical activity and for obtaining information about the causes of obesity development. This is something also clearly pointed out by WHO (22) and in the action plans of other countries (23-24).

In Sweden two national dietary surveys have been conducted, one in 1988/89 on people between the ages of 1-74 (25), and another in 1997/8 on people in the age range 18-74 (26). In 2003 a further survey was conducted of children at the ages of 4, 8 and 11 (9). National dietary surveys have not been conducted in a systematic and planned way in Sweden. This leads to a lack of complete and current consumption data and means that it is impossible to develop methods for larger dietary surveys at population level and the nutritional data for food products needed for analysing the results. National dietary surveys should be conducted continuously so that different age groups are followed up every ten years.

In addition to the introduction of representative general dietary surveys, more directed dietary surveys are needed to highlight certain issues. These may include dietary habits and nutrient intake in certain groups of the population as well as socio-economic and ethnic groups. In a national sample there are generally too few people in certain groups, which renders these samples too small to be studied. For such studies a special sample is required and occasionally a specific method. Knowledge of the

existence of considerable inequalities in health and the occurrence of overweight make it especially important to conduct this type of dietary survey.

Measure 45

Information on healthy dietary habits and physical activity should be developed, expanded and made more accessible to different vocational groups (information disseminators).

Actors: The National Food Administration (Dietary guidelines) and National Institute of Public Health (Physical activity)

Cost: EUR 2,1 million over 3 years after which EUR 165,000 each year

Motivation

In a survey of health information about food in Sweden (27), it became apparent that there was great demand among information disseminators such as domestic and consumer science teachers, school nurses, child healthcare nurses, teachers of physical education and health, dieticians, those responsible for school and childcare meals, journalists and nutritionists. These occupational groups felt that there was a shortage of health information independent of producers.

The National Food Administration has relatively extensive health information about healthy dietary habits in paper form (brochures, fact sheets, books) and on its website. Most of this material is directed to information disseminators but there is also information for the general public. The material is not comprehensive and sufficient, however, and there is a considerable need both for more information and more detailed information.

In addition to the National Food Administration, authorities such as the Swedish Consumer Agency and the National Board of Health and Welfare are also responsible for issues related to dietary habits and health and for some information to the public and information disseminators regarding these issues. The National Institute of Public Health has sector responsibility for physical activity although not for information directed to the public. Health information about physical activity directed to vocational groups in the health sector is compiled in the book '*Fysisk aktivitet vid sjukdomsprevention and sjukdomsbehandling*' (Physical activity for disease prevention and treatment of disease) (FYSS) (28) which has been produced on commission for the National Institute of Public Health.

At the regional level some county councils are active in dietary and health issues. The Centre for Applied Nutrition (CTN) at the social medicine division of Stockholm County Council has been working for many decades on the development of strategies, methods and material to promote healthy dietary habits among inhabitants via information disseminators.

Information about food and health is also conveyed by many organisations and associations. As an example we can mention the county agricultural societies. Local, regional and voluntary actors are important and have considerable potential since they

reach consumers in a different way than the authorities and often in a more target-group oriented and accessible form.

Information disseminators and consumers turn, for want of other material, to producer information. This is often distributed free of charge and in large editions to information disseminators such as the material from the Milk Marketing Board 'Mjölkspegeln', Cerealia 'C', Swedish Meats Information 'Svensk Kött' and Danisco Sugar 'Perspectiv'. Swedish Meats, Cerealia and Danisco Sugar invest EUR 320,000-420,000 annually each in these materials.

Measure 46

A national programme should be developed for training of relevant staff within different professional areas such as healthcare, education, elderly care and the food sector. This programme should provide both a common knowledge base as regards diet – physical activity – health and a number of target group-specific applications directed at particular vocational groups.

Actors: The National Food Administration in cooperation with universities/university colleges, the relevant vocational groups' organisations

Cost: EUR 210, 000 per year for 3 years after which EUR 53, 000 per year for 5 years

Motivation

Courses about food, physical activity and health should be compulsory elements of basic education leading to vocations in healthcare, school and nursing as well as the food sector. Detailed motivation for this is presented in the section on Education policy, Measure 74. Before this is in place and considering those who are vocationally active today, there is a considerable need for supplementary training. It is important to quickly and on a large scale increase competence so that these vocational groups can be motivated to work with issues, pass on knowledge and have a balanced approach to dietary habits, physical activity and health. These occupational groups have to have basic knowledge of nutrition, its practical application and be able to communicate this. Education programmes can be built on as a base programme adapted to the majority of relevant vocational groups. A number of supplementary programmes can then be designed adapted to different vocational groups. Today there are many techniques applicable such as web-based approaches (29-30) to increase the competence of different personnel categories.

Measure 47

Guidelines for food in the workplace should be developed, disseminated and evaluated.

Actors: The National Food Administration in cooperation with trade union organisations, employer organisations and the Work Environment Agency

Cost: EUR 53, 000 per year for 3 years

Motivation

People who work spend a large proportion of their waking hours at the workplace, which means that most of them eat a main meal and one or two snacks during working time. Hunger, the feeling of satisfaction and the composition of what we eat all affect how alert we are, our reactions and concentration capacity (31). Food intake during working hours is therefore important for both our health in the short and long term, as well as our work performance. Research indicates that lack of available healthy food at the workplace is a significant factor affecting the food intake of the entire day (32).

Guidelines formed and published in cooperation between the authorities and representatives in working life can act as support and advice regarding how a workplace should be designed to promote health from the point of view of healthy dietary habits. The health-promoting intervention programmes conducted at workplaces have focused on dietary counselling and have not offered more healthy meals, while physical activity in practice is always included in healthcare interventions (33). Guidelines would have the effect of strengthening future workplace-based intervention programmes. If the authorities and representatives for working life were to develop these guidelines together it would contribute to increased involvement in such issues among the actors on the labour market. Schools and childcare have similar guidelines that act as support for meals in these activities. Experience from school is that implementation after development of guidelines is decisive for wide dissemination and use.

The food served at lunch restaurants and in personnel canteens is often poorly adapted to nutrition and energy needs. Fatty and energy-dense foods are often provided (34). Vending machines at workplaces are often full of salty, fatty and sugary products. Food at representation meals, conferences and courses are not very well adapted to people's nutritional needs either. Studies have shown that free fruit at workplaces leads to increased fruit consumption and reduced consumption of cakes and pastries, especially among men (35).

Guidelines could include recommendations on:

- Free fruit available for all employees.
- Keyhole-labelled meal options at or in close proximity to the workplace.
- Nutritious snack options. Healthy range in vending machines and on product displays.
- Requirement specifications for procurement and ordering of lunch catering, representation, conferences and courses.

- Education about food, physical activity and health for different personnel categories such as personnel managers and health and safety representatives.

Measure 48

Guidelines for all meals provided in pre-school, school reception class, compulsory school and upper secondary school should be developed, disseminated and evaluated.

Actors: The National Food Administration in cooperation with the relevant authorities and representatives of the occupational groups involved

Cost: EUR 53, 000 per year for two years to develop and implement guidelines

Motivation

There are ‘Guidelines for school lunches’ available today (7) and ‘Guidelines for childcare meals’ (8). It is not known how many municipalities and schools follow these guidelines. Different smaller studies indicate that the majority of nutrition managers at the municipal level along with sub-contractors are aware of the guidelines and state that they provide considerable support and that they use them in their work (36). On the other hand, the guidelines appear less familiar to staff in the school canteens, among school managers and civil servants in the municipalities (36). Development of the guidelines and more training and information about them is in demand, both in childcare and in school for different categories of personnel. Special sections should be developed to provide support for procurement of catering activities. Guidelines should also include meals other than school lunches to provide advice about the dining environment in the canteens and attitudes to dietary habits and eating at various occasions.

The significance of schools serving fruit should be included. Children in grade 3 eat an afternoon snack just as often at home as at school (37). Children in grade 5 seldom eat an afternoon snack at school. If pupils eat an afternoon snack, it often consists of fruit (38). A survey of the country’s secondary schools demonstrated that over half the schools sold soft drinks or sweets (39). The most common snack among secondary pupils was a chocolate cake and a soft drink (40). Trials at schools to introduce more nutritious snacks illustrated that pupils felt that this gave them more energy and endurance (40). Guidelines can act to support different categories of personnel in schools both regarding what is served and sold in schools and how we should approach different mealtime situations such as outings with packed lunches, Friday treats and birthday parties.

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Environmental policy

The general aim of environmental policy is to be able to pass on to the next generation a society in which the most urgent environmental problems have been resolved. Fifteen environmental quality objectives, approved by Parliament in 1999, stipulate what should be achieved in a generational perspective and concern areas such as climate, the sea, land and water. The environment is an important aspect of the Government's policy for sustainable development. Environmental policy includes issues related to nature conservation in which outdoor recreation issues are increasingly highlighted.

Nature conservation, outdoor recreation, physical activity and health are closely connected. Outdoor recreation includes adventure and enjoyment and is a sort of 'consumption' which increases the welfare and well-being of the population while at the same time stimulating better environmental awareness. The natural environment also has considerable significance for mental health and stimulates creative processes (1-2).

Outdoor recreation can be defined as: Time spent and physical activity outdoors during leisure for the purpose of recreation, experience of the natural environment, social stimulus and education without the demand to perform or compete (3). Outdoor recreation activities in natural environments and gardens are very important for public health especially among older people (4). Outdoor recreation has the potential to attract new groups, in other words, those who currently lead sedentary lifestyles and such recreation has also proven positive in involving the disabled and older people as well as in the practical application of integration policies.

Measure 49

The National Council for Outdoor Recreation should be given further scope to assist the Environmental Protection Agency in developing access to outdoor recreation, to advise agencies and others on such issues and to strengthen its own research expertise.

Actor: Government

Motivation

The National Council for Outdoor Recreation is a group comprising authorities and national organisations and it was appointed by the Government in 2003 under the Environmental Protection Agency with the aim of enhancing outdoor recreation issues until 2005. Authorities included in the Council other than the Environmental Protection Agency are the National Heritage Board, the National Institute of Public Health, the Swedish Tourist Authority, the County Administrative Board of Östergötland, the National Geotechnical Institute (SGI) and the Swedish Defence Research Agency (FOI). The Council should assist and cooperate with authorities, researchers and organisations working in various ways with outdoor recreation. In 2004, EUR 1,6 million was distributed among the outdoor recreation organisations in the country. In addition, the Environmental Protection Agency distributes financial resources to the county administrative boards for ensuring the conservation and accessibility of

protected natural areas. Around one third of these measures are related to outdoor recreation.

According to the government ordinance (SFS 2003:134), the Council for Outdoor Recreation is commissioned to decide on the distribution of state grants to outdoor recreation organisations in such a way as to: 1) promote information and education for outdoor recreation, 2) promote the coordination of different activities conducted by the authorities related to outdoor recreation and 3) stimulate developmental work and the creation of networks related to outdoor recreation with reference to relevant research.

The Council, in conjunction with the many outdoor recreation organisations, should in different ways enhance and develop outdoor recreation and coordinate outdoor recreation issues, nature conservation and health promotion measures. The Council believes it is important to invest in activities that can develop new forms for outdoor recreation on the basis of the societal developments and needs. Priority projects include those which have clear public health aspects, are targeted at children, young people and immigrants, or the development of outdoor recreation in the vicinity of urban areas (5). The Council therefore has an important coordinating and developmental function regarding outdoor recreation issues and should continue its work after 2005 and strengthen its research competence.

Measure 50

Non-governmental outdoor recreation organisations should, similarly to the sports movement, be given increased economic funding to encourage more people to become physically active. Particular efforts should be made to encourage children and young people, people with immigrant backgrounds, the elderly, the unemployed and the chronically ill to be more physically active outdoors. The National Council for Outdoor Recreation should be responsible for distributing and evaluating such funding.

Actor: Government

Motivation

A lifestyle based on interacting with the natural environment which is established early in life and maintained during adulthood is health-promoting both in terms of physical activity, experiences, a sense of coherence and of exerting personal control as well as a healthier life. As stress and the incidence of burn-out increase and a sedentary lifestyle and obesity become greater social problems, insight grows into how important outdoor recreation is for public health. Public health research has shown that interventions to increase physical activity among the population are effective if aimed at creating a supportive physical environment (6-7). Interventions focusing on social support in local communities such as through club activities, are most successful especially if activities are chosen that are not dependent on facilities, such as walking (8). Club-based outdoor recreation unites these success factors in one and the same concept and should therefore be promoted.

Outdoor recreation can take place all year round in areas of wilderness, forest, gardens, allotments, parks and playgrounds. Outdoor recreation can be exercised individually, in organised groups, voluntarily and commercially. It should be stimulated in the home, at school and within clubs and associations and it brings knowledge and awareness of the natural environment. People's need for natural and cultural experiences, recreation and a sense of being close to nature is part of the social dimension of sustainable development.

According to a press release from the Ministry of the Environment on 27 December 2004, a further EUR 1,1 million will be allocated to outdoor recreation organisations in 2005. In total support will amount to EUR 2,6 million in 2005, which is a positive development. Funding creates good opportunities for even more people to develop a lifelong interest in outdoor recreation and nature protection. The Government believes that an interest in outdoor recreation has to be given more weight than previously. Continued funding at least at this level is necessary to reinforce activities and maintain interest among new groups.

Measure 51

Outdoor recreation should be actively encouraged to attract new groups and hence reduce inactivity. County administrative boards should be actively involved and be given extra resources for this.

Actor: County administrative boards

Cost: EUR 2,2 million per year

Motivation

At the regional level the county administrative boards have the general responsibility for regional nature and culture conservation work including regional objectives and follow-up work. The county boards have the role of coordinating and acting as the driving force behind municipalities in the county and should take new initiatives to stimulate and encourage municipal public health activities for increased physical activity.

Nature guides can increase opportunities for attracting new groups to experience the natural environment, to reduce inactivity and increase physical activity. Nature guides, according to the Nordic report Nature Guides in the Nordic Region, should 'convey a feeling for and knowledge about nature' (9) and aim to 'increase understanding of basic ecological and cultural contexts and the role of mankind in the natural environment' and 'contribute to mutual understanding between those who make a living from the natural environment and the general public as well as various recreational users'. Nature guidance can be presented orally, via exhibitions, self-guided footpaths, slide shows, drama performances etc. It could be presented at schools, by commercial tourist companies, by supervisory personnel and voluntary associations for example. The Government intends to involve the county administrative boards more actively in

public health efforts in the future and further resources for this purpose would be in line with this intention.

Nature guides have a long and strong tradition in Denmark and were pointed out as a good example in the government document on nature conservation policy (10). Professional nature guides in the service of tourism can improve the quality of various tourist products, reduce the negative effects of tourism on the environment and lead to the tourist returning home with a greater environmental awareness after his/her visit. In the Nordic region, Denmark is a role model with state employed nature guides in every county. The training of guides and guiding activities are provided today at most levels and within different school forms, open-access colleges and labour market training programmes.

Tourist organisations also arrange local and regional courses for their guides. Nature guides could also be used to a greater extent in school outdoor recreation activities.

Umeå University offers a 4-year programme for natural science teachers focusing on outdoor recreation, health promotion and nature guiding (11). Professionals in this field need specialist competence to be able to work with groups and individuals who have a sedentary lifestyle, people with various types of disability, elderly people and immigrants etc. Guides should also have documented knowledge and be familiar with methods within and outside school related to lifestyle issues both from a psycho-social, a physiological and a gender perspective.

Measure 52

A health impact assessment should be included as a criterion when allocating funding to the Government's local nature conservation programmes. The projects should be evaluated from a public health perspective.

Actor: Government

Motivation

To ensure that all groups in society benefit from programmes for nature conservation at municipal level, a health impact assessment should be included as a criterion for allocating funding. It is important that the project is also evaluated from a public health perspective, thereby increasing awareness of the link between outdoor recreation, physical activity and health.

Public nature conservation is a shared responsibility between the state and the municipality. The municipalities have greater and enhanced opportunities, since the Environmental Code came into force, to apply decisions on area conservation. Municipalities also have a key role to play through responsibility for physical planning in planning and building legislation, to ensure that planning promotes the fulfilment of environmental quality targets (10).

A basic element in nature conservation is to maintain good conditions for outdoor recreation and rich experiences of the natural environment in Sweden (10). There is a clear link between proximity to parks, green areas, lakes and forests and the degree of

physical activity (12). If the distance to a park is further than about one kilometre, the likelihood of the park being used regularly is reduced. Ensuring that there are positive conditions for outdoor recreation is a relatively inexpensive way to create societal prerequisites for physical activity and is important for those who are not primarily interested in sport and exercise. The link between environmental policy and public health policy becomes much clearer in this context. For this to be feasible, there must be an area reserved with good qualities for outdoor recreation, administered and developed for this purpose. Nature conservation measures of greatest importance for outdoor recreation include the establishment of nature reserves for recreation purposes, the protection of lakeside and stretches of coast, the protection of landscapes and control of technical exploitation destructive to natural values.

The experience of nature and outdoor recreation and a rich and varied natural landscape is part of welfare for all. The Government has approved investments in local and municipal nature conservation in a programme for 2004/06 amounting to EUR 32 million (13). The basic idea is that the programme should contribute to increased participation and enable more rewarding outdoor recreation in which everyone can take part. The grant amounts to 50 per cent of the costs at most, of the project. The grant can be applied for by municipalities but voluntary organisations and landowners may also benefit. Examples of investments include municipal nature conservation programmes, recreation-directed nature conservation, information and training about outdoor recreation and the build-up of competence. 177 municipalities applied for grants in 2004 for 508 projects which incorporated 1,837 measures at a total of EUR 14 million in state funding. The greater part is for information measures followed by nature conservation projects. The majority of the measures refer to the environmental objectives aimed at promoting outdoor recreation, namely a good urban environment, living forests, rich cultivated landscape and teeming lakes and watercourses.

Measure 53

As a foundation for their overall plans, municipalities should develop nature conservation programmes, e.g. with the aim of preserving and developing outdoor recreation and the scope for physical activity. Health impact assessments should be carried out in parallel with, or as part of, the environmental impact assessments of planned projects.

Actor: Municipalities

Motivation

Municipal general planning is by nature forward looking, intersectoral and holistic in perspective. It is a tool for preventing environmental problems and for assessing the pros and cons between different types of land use, including the need for access to areas for outdoor recreation. The Government believes it is important that outdoor recreation issues, in the same way as environmental issues, are dealt with professionally and with competence. Planning for outdoor recreation should have the explicit purpose of focusing on people's needs and experiences which underlines its significance in health

promotion. Public health aspects have to be reinforced in current compulsory environmental impact assessments to ensure access for all groups in society.

The studies conducted by Statistics Sweden show that the acreage of green areas has successively decreased in all size categories of urban centres between 1980 and 2000, most in larger urban areas (14). This decrease has occurred as the proportion of built-up surface has increased. The studies take into account both the densification and expansion of urban areas on the outskirts of suburbs. Statistics Sweden argues that this trend should be interrupted if Sweden is to achieve the environmental objectives passed in Parliament. Therefore, there is a need to develop methods for taking into account accessibility to and quality of green areas for outdoor recreation in and around urban areas. The Swedish Child Safety Authority writes in its final report that the studies conducted by Statistics Sweden demonstrate that an increasing number of people have to share an increasingly shrinking area of green surfaces (12). The majority of people in Sweden (85 per cent) would like the nearest green area to lie within at most one kilometre from their homes, in other words within walking distance. Green areas in the form of parks and gardens, areas of water or watercourses, can have considerable significance from the perspective of nature conservation and public health.

In an attempt to change the direction of development to achieve the objective for a good urban environment, the Government proposes in the document 'A collective policy for nature conservation' (10) that municipal nature conservation programmes should be able to provide suitable material in the general landscape plan to preserve open green spaces and water in and around urban areas. Information material is often produced in conjunction with nature conservation programmes, describing the natural environment in the municipality and this could be greatly appreciated by outdoor recreation organisations. The process of developing general landscape plans and nature conservation programmes could provide an excellent forum for reinforcing the dialogue with citizens in a way conducive to enhancing democracy and participation in municipalities.

One example of how municipalities can establish nature conservation through participation among the population is demonstrated by the City of Stockholm which is conducting a project describing the social value of locations (15). Questionnaires and interviews with people provide the data on qualities different green areas and public spaces have for the inhabitants – including children, young people and adults. It might be a site for downhill sledding, for peace and quiet or for meeting people. These values are then entered on maps and become important material for planning and are potentially part of the implementation of health impact assessments.

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Tax policy

The aim of this policy area is to safeguard revenue from tax, customs excise and other contributions in a legally secure and economically efficient fashion whilst striving for simplicity and counteracting criminality. A wide number of products and services are currently subject to tax (VAT and excise duty) in Sweden. There are three rates of VAT with 25 per cent being the normal rate. VAT on food, food additives and antiquities is levied at 12 per cent. Due to EU regulations, VAT cannot be removed completely but it could be reduced to 6 per cent on some foodstuffs. Such a reduction would have only a very modest effect on the price of e.g. fruit and vegetables. Excise duty is currently levied on tobacco, alcohol, energy, road tolls for lorries, vehicles and advertising. According to economic welfare theory, it is rational to tax the consumption of products that lead to negative externalities (1) such as medical care costs and costs due to loss of production caused by obesity, diabetes, tobacco, alcohol, etc. Correspondingly, there is also an argument for subsidising products that have positive externalities in the form of e.g. health benefits.

Measure 54

An enquiry should investigate the potential for reducing consumption of chocolate, confectionery and soft drinks using taxation or other economic instruments, and the scope for reducing fat and sugar intake in general through taxation.

Actor: Government

Motivation

According to WHO, there is convincing evidence that high consumption of energy-dense food products (including confectionery and chocolate) and soft drinks is related to an increased risk of overweight and obesity (2). Evidence has been reinforced during the past year of the causal link between soft drinks, diabetes and obesity (3). There are also studies demonstrating that interventions to reduce soft drink consumption among schoolchildren can reduce the occurrence of obesity (4). The dental health of children and young people is beginning to deteriorate due to increased intake of soft drinks and sweets, causing dentists to react.

WHO in its global strategy mentions the potential use of economic instruments in order to influence dietary habits in a more favourable direction (5). A pan-European study illustrated that price is the most significant factor in the choice of food after quality and freshness (6).

A selective purchase tax, sometimes called a luxury item tax, on sugar confectionery, chocolate, sweet biscuits, cakes and pastries and dessert wafers along with sugar-free confectionery as well as on imports was levied in Sweden until January 1, 1993 (SFS 1994:1564).

Selective taxation of soft drinks and/or sweets is levied today in other countries. These include 19 states and cities in the United States, a number of provinces in Canada

and in Belgium, Denmark, Finland, France, Holland and Norway. The reason for the levy in these countries is not primarily for health reasons and in some cases the tax is so low that demand is not notably affected. In Denmark and Norway, the tax on soft drinks is the highest in Europe (around EUR 0.2 per litre) and here changes in domestic sales occur when tax rates change (7). In several countries throughout the world (US, UK, Australia), taxation of unhealthy food products is under discussion at the top political level.

Selective taxation of soft drinks, confectionery and chocolate would have a beneficial effect on consumption from a health perspective. Price elasticity for chocolate, confectionery and soft drinks has been estimated in different studies at between -0.3 to -1.0, which is in the same size range as for tobacco, beer and wine. An increase in the price of soft drinks by EUR 0.2 per litre (22 per cent), equivalent to the Danish and Norwegian taxation levels, would reduce consumption by between 7 and 22 per cent.

A tax on chocolate and sweets equivalent to Danish levels would increase the price by around 20 per cent and reduce consumption by around 6 per cent. The introduction of a selective purchase tax would represent a very strong indication from the Government

of the importance of this issue, which would probably contribute to increased awareness of the significance of these food products for health. This may in itself have the effect of reducing consumption.

A Danish study examined the feasibility of VAT differentiation as an instrument of nutrition policy using an econometric method (economic/mathematical model study) (8). The conclusion was that it is theoretically possible to influence dietary habits using price differentiation. The effects vary for different food products and for different social groups. Dietary habits would be improved most among households with lower incomes and among families with children. A Norwegian econometric study of what the impact of raising VAT on soft drinks by 12 per cent and doubling the selective tax would be on sales concluded that the pricing instrument would be especially effective in groups with the highest consumption (9).

The OECD has conducted a systematic review concerning the cost effectiveness of different interventions to prevent or treat overweight and obesity (10). It is concluded that only a few practical studies have been conducted into specific subsidies or taxation of food products as a strategy for influencing consumption in a more healthy direction to prevent overweight. The studies available were performed in controlled environments such as schools and workplaces and not on a national level. They do, however, demonstrate positive effects and price elasticity of between -1 and -2 for the food products tested in these environments. The OECD report concludes that more studies are needed in other countries to be able to generalise these small-scale American investigations. Research is especially needed into the effects of price interventions at national level and how these might affect consumption and overweight.

Meanwhile, problems exist in the introduction of a selective tax. Higher prices in Sweden compared with our neighbouring countries such as the Baltic States, Finland and Germany might contribute to increased import of these products rather than a decrease in consumption. Categorisation issues will arise concerning what is classified as confectionery, chocolate and soft drinks. A tax on chocolate wafers, for example, but

not on chocolate biscuits, or on soft drinks but not on lemonade, might send out incorrect signals that certain products are unhealthier than others although the nutritional value may be identical. Moreover, the industry and retail trade might eliminate the effects of a selective tax through increasing marketing or through various sales support measures to affect the end price of a product.

A study would be able to examine the advantages and disadvantages of selective taxation while also considering other significant issues. How large should a selective tax be to have an impact on consumption, contribute to the real price difference for consumers, and not result in unacceptably widespread border trade? How would the border trade be affected at different price levels? How does the pricing of soft drinks vary today based on volume per unit, place of sale etc? What conclusions can be drawn from this in relation to consumption? What are the long-term effects of a selective tax, in other words, for how long does the consumer experience that a price rise has taken place? Should taxation be on raw materials (sugar and fat) or on the food product and what demarcation problems are there in relation to different alternatives? Do other food products exist than those mentioned that should be taxed? What other economic policy instruments are available that could decrease consumption? What can feasibly be done nationally relative to at EU level?

At a seminar in Lund in September 2004, it became evident that the taxation issue is complex and uncertainty considerable concerning the potential effects on sales and consumption. There is virtually a complete absence of Swedish data. All in all, we conclude that the issue of selective taxation should be subject to an interdisciplinary enquiry to assess what health effects can feasibly be achieved.

Measure 55

A European conference should be convened on the scope for tax policy measures within the area of diet and health.

Actor: Government

Cost: EUR 110, 00

Motivation

Top-level discussions concerning tax policy measures to influence the consumption of food products are underway in several countries as well as at WHO and OECD. Considering the significance of this issue in principle and that the relevant expertise exists to a great extent in other countries, it is proposed that Sweden take the initiative to convene a European conference inviting experts and politicians from other Nordic countries, the EU and countries where the issue is topical. Such a conference should devote adequate time to the presentation and analysis of current experiences from other countries regarding taxation and food products as well as usable data from associated areas, primarily taxation of alcohol and tobacco. Other topic areas include legal and tax policy aspects in an EU perspective and the feasibility of coordinating measures. A third area is the demarcation and definition of the products and products areas that would be relevant.

Measure 56

The scope for tax-subsidised keyhole-labelled meals should be investigated. Such an investigation should also determine the prerequisites for a satisfactory level of supervision of the keyhole label, perhaps via an autonomous certification system.

Actor: Government

Motivation

Lunch is important to our health for many reasons in both the short and long term. This meal often provides about one third of the day's energy and nutrient intake and the quality of a lunch often makes a considerable contribution to the total quality of the diet. In the short term this meal is significant for performance at work since hunger, satisfaction and the composition of food affects how alert we feel, along with our reaction and concentration capacities (11).

At the same time as the tempo of working life increases, lunch break time is cut and many personnel canteens are closing down while fast food consumption is increasing (12). Half of those asked in a recent study took a 30 minute lunch break at most. In the survey, the cost was given as the single most common reason for not going out to eat lunch. Employers could sell meal coupons at 50 or 30 per cent of the market price to their employees without incurring any form of benefits taxation (compare earlier conditions for national luncheon vouchers).

Today it is technically possible to work with special subsidies where these are directed towards specific dishes, restaurants and/or time of day. This means that such a system could also be applicable for those who work shifts or others with irregular working hours. It is now possible to issue personal vouchers in the form of a smart card for improved monitoring of use. This type of card could also be used in other contexts such as for adult students, in labour market programmes and so on.

Since the food currently served at lunch restaurants and canteens is often too energy-dense to be healthy, it would be necessary that a tax free subsidy for lunches is only applicable for keyhole-labelled meals. The National Food Administration plans to review the criteria for and monitoring of keyhole labelling of meals and buffets at restaurants and cafeterias in 2005. Keyhole labelling could therefore act as a criterion for the meals covered by tax subsidies. The system would generally be capable of increasing the supply of good meals in the form of keyhole-labelled lunches considerably. Introduction demands education of the relevant personnel which it itself would have a beneficial effect on the general supply.

Studies in the USA from the beginning of the 1990s have demonstrated that health information at workplaces in combination with an improvement in the food available at lunch canteens/cafeterias can result in small reductions in fat intake (13). More recent American studies have shown that changes in the price level of healthy and of unhealthy food at schools and workplaces have a rather large impact on sales (14). On the other hand, there are no studies measuring the effect of changes in terms of body weight.

A significant problem these days is the feasibility of monitoring that subsidies are only used for dishes with nutritional quality and that keyhole labelling actually works. It is unlikely that official food control can take on responsibility for such monitoring

and it would probably be achieved through some kind of certification which would mean personnel training and regular inspection. KRAV (the Swedish association responsible for certification of organic food) organisation and labelling of organic products might be an example here. An investigation should include observation of how a tax subsidy of this kind might disadvantage certain socio-economic groups. The investigation could also examine whether the demand for organic food would be feasible for inclusion as a criteria.

A prerequisite for such an extensive measure is that the meals for which subsidies are available can be relatively easily characterised. The Swedish system of keyhole labelling is unique. If public food control could also monitor nutritional aspects this might be something even more unique. This also means that no data is available to document the effectiveness of this measure.

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Transport policy

Transport policy is an important area for public health in general and for physical activity in particular. The transport policy objectives emphasise that all means of transport should be accessible and secure for all groups of the population and especially highlights the needs of weaker transport users such as children, the disabled and the elderly. One transport policy objective concerns gender equality in the transport system and in the planning of the transport system, the design and administration and that the values of both men and women should be accorded equal weighting. Transport policy is of great importance for sustainable development which is expressed in terms of increasing active (walking and cycling) and collective transport. Transport policy is also being regarded in public health policy. One indicator for physical activity is proposed as ‘the number of people walking and cycling compared with total passenger transport’.

Several countries have recently identified transport policy as a key area for encouraging and enabling people to become more physically active in their daily routines, especially those who have sedentary lifestyles. More active transport and less motorised traffic would also contribute to sustainable development.

Measure 57

The National Cycle Strategy should be expanded and implemented. Cycling should be included in the National Road Database to allow resource inputs to be evaluated. Planning of public roads should include a good infrastructure for safe cycle ways and footpaths. Decisions should be based on social impact assessments. A manual/handbook should be produced to reinforce assessment of the economic benefits for society of investments in the local cycling infrastructure.

Actor: The Swedish Road Administration

Cost: EUR 220, 000 (for the road database)

Motivation

Physical activity as a means of transport (active transport) has considerable potential and constitutes a time-efficient form of exercise, for example, walking and cycling (1-2). Walking and cycling are activities that everyone has access to independent of social class, age and level of education (3), and are clearly the most common forms of activity. Around 60 per cent of Swedes report that they walk and 40 per cent report that they cycle regularly (3-4). Measures ensuring a sound and secure infrastructure for walking and cycling should also be seen from an equality perspective since women walk, cycle and use public transport more than men in everyday life (5-6). There is considerable potential for increasing active transport for the journeys adults make to and from work and for children to and from school and between recreation activities since a large proportion comprise shorter journeys. Almost 45 per cent of the work force has a travel time of 10 minutes or less to work, although the variation is large between different parts of the country (6). Around half of all car trips and 30 per cent of all journeys to

work are less than 5 kilometres. The National Road Administration calculates that 10-48 per cent of these trips could be made by bicycle.

According to the Government, journeys by foot or bicycle have remained largely unchanged during the last 20 years at the same time as car travel has increased by around 50 per cent (7). The National Road Administration estimates that walking and cycling will decrease by 4 per cent by 2010 while car travel is expected to increase by 29 per cent during the same period (8). The latest statistics from the National Road Administration indicate that total cycling has decreased from around 2.0 billion kilometres to around 1.7. Walking has increased from around 2.5 kilometres to around 3.2. Car travel has increased from around 81 billion kilometres to around 90 between 1999 and 2003 (9). More and safer cycle transport calls for multifaceted measures to improve traffic safety, accessibility and security within the existing cycleway network.

In an effort to promote active transport, the Road Administration initiated a national cycle strategy (4) with the aim of increasing the proportion of journeys by cycle and making cycling safer. A number of measures were proposed including the building of more cycle ways separate from motorised transport, better infrastructure with wider cycle paths and information signs for cyclists, and better locking facilities and cycle parking at relevant destination points. Increased use of cycle helmets with legislation for children and young people, along with the introduction of speed reductions and a speed limit of 30 kilometres per hour for car drivers on some roads were presented as important measures to facilitate more cycling. A follow-up in 2003 (10) indicated that the national cycle strategy lacked 'organisational backbone' at the Road Administration and therefore had not been implemented in full. An evaluation suggested a number of new measures and the introduction of a cycle coordinator at the Road Administration. The cycle coordinator should produce an annual report to provide background material for decisions regarding future activities. This project has to be provided with the necessary economic resources. We find these measures to be extremely important.

To follow up the cycle strategy it is important that the cycle infrastructure is incorporated into the National Road Database (11). The National Institute for Communication Analysis, SIKKA, states that information and statistics at regional and national levels concerning the quality and standard of footpaths and cycle ways are scarce which makes follow-up towards improving the existing infrastructure for active transport much more difficult (6). Both national and municipal investments in the cycle infrastructure should be reported to allow the extent of the infrastructure to be estimated. This should also include resources for administration and maintenance. All this should be reported in such a way as to facilitate the assessment of resource allocation and future planning. A study commissioned by the Road Administration (11) identified a number of cycle way properties relevant for the National Road Database including the existence of cycle ways, the degree of separation from motorised traffic, the volume of traffic, the condition of the cycling surface, signal regulation and crossings.

Social impact assessment means that accessibility for all groups of users should be analysed. Special consideration should be taken to vulnerable groups in traffic such as children, the elderly and people with physical and mental disabilities.

The National Road Administration, in cooperation with the Institute of Public Health and the Swedish Association of Municipalities, should produce a manual/handbook to strengthen the analysis of cost-benefits of investments in the cycle infrastructure at local level. This would motivate municipalities to increase their efforts to improve the local cycling infrastructure. Two Nordic research reports conclude that investment in infrastructure for increased and safer cycling is cost-effective. A Norwegian report has calculated that the societal economic gain from cycling to around EUR 2.5 per person per day. The economic gain arising from the health benefits expected from the change from inactivity to moderate physical activity amounts to EUR 930 per person per year (12). In the report the societal gain from increased cycling is estimated to be 4-5 times higher than the investment costs for cycle ways which makes it more profitable than other investments in transportation. A Swedish report on the health and societal benefits of cycling and investments in cycling has been produced on the initiative of the Nature Protection Agency, the Road Administration and the Council of Nordic Ministers (13). The report indicates that it is possible to develop methods for cost-benefit analysis concerning cycling. The report states that extensive investments in cycling can generate considerable societal benefits and improvements in comfort and security, especially if consideration is taken of the cost of such a programme being moderate in relation to other infrastructure measures. The report concludes that investments in the cycling infrastructure most likely are justified from a societal perspective.

To realise the full health potential of cycling, it is important that the use of cycle helmets is encouraged.

Measure 58

Measures for pedestrians and cycle traffic should be included in county transport plans and contain social impact assessments.

Actors: County administrative boards in conjunction with municipalities and voluntary organisations

Motivation

The county or region is responsible for regional transport plans. There is considerable variation in investments in pedestrian and cycle traffic in the county transport plans where some counties aim to invest in active transport and thereby in increased physical activity. Many county transport plans, on the other hand, lack detailed information on how this issue should be addressed (14). To be able to assess the benefits of investments in pedestrian and cycle paths, the needs in the municipality and county have to be listed and included in the county transport plans. Kågeson (14) states that the proposals for county or municipal plans vary so much in quality that the Government should consider providing clearer and more binding instructions, in relation for instance to reporting and presenting more details of resources for investments into pedestrian and cycle paths, and the extent to which work will lead to the fulfilment of transport policy objectives for increased pedestrian and cycle traffic. The plan proposals from, for example, the

counties of Gotland, Skåne and Halland illustrate that it is possible to report investments to enable follow-up and evaluation of cycle and pedestrian investments to be made.

Measure 59

A state programme for co-funding infrastructure for walking and cycling should be established.

Actor: Government

Cost: EUR 11 million per year

Motivation

The Government states that cooperation between state agencies, municipalities and voluntary organisations regarding the infrastructure for footpaths and cycle ways should be developed and intensified (7). According to the Government's bill, one option is to provide a state grant to facilitate what is known as 50/50 funding, in which many municipalities have expressed interest. The National Road Administration reports that via a state grant municipal road providers could be stimulated to build more footpaths and cycle ways (4). The state currently invests EUR 6.3 – 7.4 million each year in cycle ways which many believe is insufficient to achieve the targets set (14-15). Kågeson believes that in order to break the negative trend for cycling, measures for increased pedestrian and cycle traffic will have to be provided with more investment funding than the current proportion of investments in road traffic. At least 4 -5 per cent of state funding for 2004-2015 should be allocated to pedestrian and cycle measures according to Kågeson (14). This is equivalent to EUR 0.36 – 0.43 billion in total. Depending on local needs, 8-10 per cent of the regional frameworks should be allocated for pedestrian and cycle way investments.

Investment costs for creating a pedestrian and cycling network with high demands on safety and accessibility for all towns in Sweden with more than 20,000 inhabitants is estimated at a total of just over EUR 1.1 billion according to SIK A (15).

Measure 60

To increase the scope for active transport, speed restriction measures should be adopted in residential areas. Different categories of road-users should be separated as far as possible. Local infrastructure should be adapted to the needs of pedestrians, cyclists and individuals with disabilities.

Actors: Municipalities in cooperation with the National Society for Road Safety

Motivation

The infrastructure for walking and cycling is currently inadequate with regard to the needs of pedestrians, cyclists and disabled people, which leads to a high risk of accidents (16). Experience of the road environment as dangerous and insecure

represents a considerable obstacle for increasing active transport especially among vulnerable groups. The risk of pedestrians being badly injured is four times as high compared to car drivers, while the risk of cyclists being injured is seven times as high (6). During the last 20 years cycle ways have been extended and other measures have also been implemented for cycle traffic, but this is far from the extent justifiable considering the development of car traffic and society's objectives for the environment, public health and transport. SIKAs follow-up of transport policy objectives (6) reports a number of worrying trends for road safety during the period 1990-2002 including more motorised vehicles on the roads, heavier vehicles and a dramatic increase in the engine power of vehicles.

According to a survey conducted by the National Society for Road Safety in the county of Stockholm, women are clearly underrepresented in the committees making decisions on municipal transport issues which according to National Society for Road Safety, would explain why road safety has not increased and why speed has not decreased (18). The majority of motorised traffic in Sweden exceeds the applicable speed regulations which increases the risks especially for those unprotected in traffic such as pedestrians and cyclists (9,17). A report commissioned by SIKAs of the representation of women and men in decision-making bodies in the national transport sector revealed a clear male dominance especially among managing directors and chairpersons (19). The latest statistics published by the National Road Administration (9) shows that women walk and cycle more, use public transport to a greater extent, and drive cars less than men. The Road Administration's regular road safety questionnaire indicated that women are more positive to 30 km zones where cars and pedestrians meet in traffic, more women than men report that they always or almost always use a seatbelt and women believe to a greater extent that it is reasonable to reduce speed to increase road safety.

All things considered there is cause to assume that a more equal distribution of the sexes in the transport sector at all levels would favour pedestrian and cycle traffic since women use these types of transport to a greater extent, are more positively inclined towards road safety. Women in general are more positive towards active and public transport than men. In addition to stimulating physical activity, reduced car travel would reduce air and noise pollution which comprise a threat to health (20).

It is well-established that many different methods can be used to reduce traffic speed and the risk of collisions with pedestrians and cyclists, including better signalling systems at crossings, the construction of roundabouts and separate pedestrian and cycle paths, street notices encouraging caution among pedestrians, speed bumps and narrower lanes (21). A review of attitudes to 30 km zones and road safety in the Stockholm region indicated that a large majority of those asked were in favour of the introduction of 30 km zones in residential areas and that it was important to take measures to improve safety for pedestrians and cyclists even if this meant narrower lanes and slower speeds for car users. In the City of Stockholm there are plans to implement 30 km zones throughout the inner city area apart from major through-roads.

Measure 61

The work of the Swedish Road Administration with children and young people in traffic should be given a high priority.

Actors: The Swedish Road Administration in cooperation with the Institute of Public Health and the Swedish Association of Municipalities

Motivation

A supportive environment for physical activity is especially important for children and young people. For many children who are not interested in sports active transport to and from school is an extra important opportunity for physical activity. Children are especially vulnerable in traffic since, compared to adults, they have less experience of coping with traffic, they are less visible and they do not have such a good overview of their surroundings (23). The distance a child travels to and from school/pre-school and recreation activities represents good opportunities for spending time outdoors and being physically active, but developments in society have meant that fewer children walk or cycle to school and that children increasingly are being transported to schools by their parents by car (16, 24). The helmet legislation introduced at the turn of the year 2004/2005 for children up to 15 years is an important step in reducing serious cycle accidents but is in itself insufficient to prevent accidents if many more people take up cycling.

A comparative study indicated that seven year-olds in a completely traffic separated area had greatest freedom of movement while children in areas with traffic in or close by had limited freedom of movement to school, green areas and to friends (24). As the sector authority responsible, the Swedish Road Administration should create the best long-term conditions for children's freedom of movement, accessibility and safety in physical planning and transport work by, for instance, creating safer and more secure local environments and transport routes to schools and recreation facilities (25).

The Road Administration's strategy for children and young people (25) has several general objectives including halving the number of people killed and seriously injured by the year 2007, to increase children's accessibility to school and recreation facilities and knowledge about children in the road transport system. The strategy stresses that children should be able to move around in society without being dependent on adults and that children's outdoor environment should be seen as a developmental and educational environment. The strategy states that comprehensive measures are needed to achieve these objectives.

A number of other policy documents emphasise children's needs and conditions as the highest priority in decisions regarding the design of the transport system and its function including the government bill on 'Transport policy for sustainable development' (26), the government report on children and young people's welfare (27), environmental quality objectives (28) and the fourth WHO Council of Ministers Conference on environment and health in Budapest in June 2004 (29). The area has also been highlighted by the Institute of Public Health following up public health policy through the indicator 'the number of children who can get to school on their own' included in the forthcoming public health policy report.

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Education policy

Education policy incorporates the education of children and young people, adult education, higher education and study grants. According to the objective for education policy, Sweden should be a leading knowledge-based nation characterised by high-quality education and lifelong learning.

School activities are ruled by school legislation and work environment legislation. The job of schools regarding knowledge objectives has been established in the national curricula and course plans while the basic legislation regarding employer responsibility for the working environment can be found in the Work Environment Act (Chapter 3, Sections 2 and 2a). Together the regulations should ensure that schools provide a good environment for work and study. The school principal should conduct work environment activities in cooperation with personnel and pupils.

In the current national curriculum for compulsory school (Lpo 94), it is stated that ‘The school is responsible for ensuring that every pupil having completed compulsory education should have basic knowledge of the determinants for good health and an understanding of the significance of individual lifestyle on health and the environment’ (1). An addendum to the curriculum states that school should strive to offer all pupils daily physical activity, but nothing is included regarding the importance of dietary habits to health.

In the latest national curriculum for pre-schools (2), there are documented indications of the significance of physical activity and time spent outdoors. However, nothing in the documents refers to food and the importance of dietary habits for health.

In the curriculum for voluntary school forms, it states that the school should be aware of health and lifestyle issues and strive to provide upper secondary pupils the conditions for regular physical activity. The importance of healthy dietary habits is not mentioned.

The statements included in the curriculum regarding health and lifestyle could quite simply be formulated to include the importance of dietary habits to health. Otherwise there is a risk that diet and health could disappear among the more established lifestyle issues.

Schools (pre-school, school reception classes, compulsory school, upper secondary school and after school activities) play a central role in health promotion with children and young people since they spend such a large proportion of their time at school and everyone can be reached regardless of social background. Efforts in schools can therefore have an equalising effect on social inequalities in health. School is important because it can provide knowledge concerning dietary habits, physical activity and health but also because the environment at school can convey a health-promoting lifestyle. Children learn both from their environment, from school education and from seeing how adults behave. It is therefore necessary that all school activities are permeated by the same message about what is meant by healthy dietary habits and a physically active lifestyle. It is possible by using broad school-based measures, to reduce the development of obesity among children and young people (3). It demands investment in both knowledge acquisition and supportive environments to be effective. School healthcare also has an important function in this respect. Measures related to this can be found in the section on health care policy, Measure 19.

Vocational training courses at upper secondary school, colleges and universities which lead to professions in healthcare, nursing and child care, and the food sector are especially important since these professional groups act as health educators regarding food, physical activity and health.

In this section, measures will be presented related primarily to school and are organised so that measures which have the Government as principle actor come first, those which have an authority as principle actor come second, followed by those measures with municipalities/schools as actors. Finally, measures are presented related to education leading to occupations within healthcare, school and nursing and child care at upper secondary schools and colleges/universities. In the section on food policy, there are measures related to guidelines for food in schools (Measure 48) and supplementary training of teachers and other personnel (Measure 46)

Measure 62

The new Education Act should include the concept of ‘health’ in its opening paragraph. Under the Act, meals served in pre-school, compulsory school and upper secondary school should be in line with national nutrition recommendations.

Actor: Government

Motivation

Good health is a prerequisite for learning (4). Recent Swedish and international research has increasingly underlined the central role played by schools in the health of children and young people. If society is to live up to the third public health objective approved by Parliament, namely, secure and favourable conditions during childhood and adolescence, support should be provided to promote the health of pupils in the form of a more prominent place in modern education legislation. The Education Act is currently under revision and the National Institute of Public Health has included in its consultation response (5) that health should be introduced in the opening paragraph Chapter 1 Section 3 with the following wording: ‘The purpose of education is to provide knowledge and skills, to promote *health* and general personal development and lifelong enthusiasm for learning.’ (The addendum is in italics.) This wish is consistent with the widely held conviction in society that school has an important role to play in promoting health, including dietary habits and physical activity among children and young people.

Children who seldom eat school lunch, eat more sweets, feel more fatigue, suffer from more headaches, nausea and stomach ache and have worse marks. Characteristic for upper secondary pupils who feel fatigue, suffer lack of energy and perform worse in tests are those who have poor breakfast habits (6).

Schools are obliged to serve lunch free of charge to all children at compulsory schools in accordance with the Education Act. On the other hand, there is no legislated minimum quality requirement for school lunch, nor any requirements regarding the length of the break, the time of the lunch or the canteen environment. If school is to contribute to a health-promoting lifestyle, it is obvious that the food served should be

nutritious. The Education Act is currently under revision and this is therefore an excellent opportunity to introduce the proposal above. We propose that guidelines for food in school should be formulated by the National Food Administration – see Measure 48 in the section on food policy.

Measure 63

Domestic and Consumer Science should be introduced as a core subject in upper secondary school.

Actor: Government

Motivation

Domestic and Consumer Science is not available at upper secondary school. Today, upper secondary pupils receive virtually no instruction on the issue of food and health or lifestyle issues generally. A new subject should be introduced at upper secondary school preparing pupils for the future as active and informed consumers with a sustainable lifestyle in focus. The commercial pressure on children and young people has increased which also demands greater knowledge. A functioning market requires informed consumers who make conscious choices of goods and services. Young consumers must be able to make conscious choices which are beneficial to health, both in shops and in restaurants.

Measure 64

Funding should be distributed by the Swedish National Agency for School Improvement to schools wishing to develop pilot projects on healthy dietary habits and physical activity.

Actor: Government

Cost: EUR 2.2 million per year

Motivation

School-based programmes, including also after school care, about dietary habits and physical activity should be developed. There are a number of ideas and considerable interest at many schools to work more actively, innovatively and in an integrated way with activities related to these issues. Starting up such work often requires material, acquisition of knowledge and opportunities to benefit from the experience of others. Not least, opportunities are needed for different categories of school personnel to develop cooperation and consensus regarding dietary habits and physical activity. Evaluation and documentation of a consistently high scientific quality, for example through cooperation with universities and university colleges, should be part of these projects. A study of four Stockholm suburbs demonstrated that children in grade 6 were knowledgeable about the link between diet, physical activity and health (18). Children

from socio-economically strong areas also experienced that they had the chance to make conscious choices themselves, something which was not as apparent among children from socio-economically weaker areas. Schools in poorly resourced areas therefore have an especially important task to create greater awareness of attitudes to diet, physical activity and health so that knowledge and actions can interface more consistently. There is positive experience both from Sweden and abroad that education in diet and physical activity, in combination with increased accessibility to fruit, better school meals and the involvement of parents, can lead to better dietary habits and increased physical activity (7-11). The National Centre for the Promotion of Physical Activity among Children and Young People (NCFP) has an important function for this type of development in schools through its agenda to support schools in health promotion activities. The NCFP should work to integrate diet and physical activity into its activities.

Measure 65

Issues of diet and physical activity should be integrated with, and occupy a central role in sustainable development education in schools and higher education.

Actor: Government

Motivation

The UN has decided that education for sustainable development should become a priority area for the period 2005-2014. The Government has, in response to this, investigated the ways in which the education system at all levels can work towards economic, social and environmental sustainable development (12). Against the background of this overriding priority and considering the close link between environmental and public health objectives, it is important that dietary habits and physical activity are integrated and made a central part of the development of curricula in schools towards sustainable development.

In the government document 'A Swedish Strategy for Sustainable Development' (2003/04:129), sustainable dietary habits from a health perspective are presented as an important aspect of sustainable consumption. Eating in accordance with the currently applicable recommendations for nutrition can contribute to the achievement of a number of the objectives. The choice of food products can be adapted to better contribute to public health while at the same time generating as little negative environmental impact as possible. That these aspects are feasibly compatible has been illustrated in several reports (13-16).

Increased physical activity among the population can also be seen as an important component in sustainable development. More or less all the measures towards increasing people's levels of physical activity contribute to sustainable development and many of the environmental quality objectives can contribute to improving conditions for people to engage in physical activity.

Increased physical activity and healthy dietary habits can contribute to economic sustainability. Partly, physical activity and changes in diet can replace or complement

elements of pharmaceutical treatments and, partly, physical activity and healthy dietary habits can also prevent many widespread diseases among the population. In this way the cost of medical care is reduced as well as loss of productivity.

The enquiry regarding learning for sustainable development (12) concludes that the steering system for the school sector and higher education sector promotes education for sustainable development but that the necessary integration of economic, social and environmental dimensions is lacking. In most activities the focus continues to be exclusively on environmental issues. Teachers express uncertainty about how the perspective for sustainable development should be made more concrete in pedagogical activities and request supplementary courses. This might explain why the learning that actually takes place, required by education for sustainable development, appears to be inadequate with scope for a greater degree of inter-disciplinary cooperation. The enquiry (12) proposes, in this context, that the Education Act and Higher Education Act should be amended so that it becomes more apparent that activities should promote all dimensions of sustainability, which would include a holistic perspective on environment and health, economic and social welfare and justice.

Measure 66

Continued funding and an extended mandate should be given to the National Centre for the Promotion of Physical Activity in schools so that it can work towards the integration of healthy dietary habits and physical activity and also include pre-schools.

Actor: Government

Cost: EUR 630, 000 per year

Motivation

According to an addendum to the Education Act of 2003 (17-18), schools should strive to offer all pupils daily physical activity within the framework of the entire school day. The Government would like to establish a broad general perspective on physical activity and for this reason it is not just an issue for the subject area physical education. It is up to each school, however, to find ways of offering pupils some form of physical activities on the basis of local conditions. Schools need support and ideas for how they could work to stimulate increased physical activity. In 2004 the National Centre for the Promotion of Physical Activity for Children and Young People NCFP (19) was established for this purpose. The NCFP consists of a national board, an office based at Örebro University, and a science council. The NCFP on the basis of schools' general objectives and guidelines, should support schools in their work to increase physical activity and other health-promoting activities. This centre could serve as a model for a setting-oriented resource centre within a specific area of health.

Current tasks are primarily supervision and guidance, method support, knowledge support, evaluation and follow-up. The Swedish Agency for School Improvement

regularly reports to the Government the extent to which schools succeed in realising this objective.

Experience so far suggests that the principals' and/or school governors' interest and support for physical activity are decisive in whether or not a school is successful in implementing this in everyday activities. A political base and support in the local school plan and among administration managers are also factors for success. Schools that have adopted a holistic approach to the concept 'health-promoting school' (WHO-concept) have often also had more success with physical activity (J. Transqvist, NCFE, personal communication).

NCFE resources are currently focused on compulsory school and upper secondary school. In the future the centre could also contribute to the integration of physical activity and dietary habits as well as including the activities of pre-schools, and should therefore have an extended mandate and the necessary economic resources for the task.

Measure 67

The school subject Sport and Health (physical education) should be further developed and quality assured. The needs of low-activity children should be given particular consideration, as should the gender perspective in education.

Actor: Swedish National Agency for Education

Motivation

The school subject Sport and Health has undergone considerable changes in focus and content but is one of the subjects most appreciated by pupils year after year. An evaluation of Sport and Health in 2002 (17) pointed out both the positive and negative aspects. Among the positive aspects were the emphasis of the subject having been shifted towards physical activity and play. A majority of both pupils and PE teachers enjoy the subject and the pupils who take part reported that they learnt a lot while teachers reported that the time and space for the subject is relatively constant and that absenteeism has not increased. On the other hand there were a number of problems. A significant number of pupils felt that they did not participate or were active enough in the subject with negative consequences for learning and attitudes to physical activity. They also felt that they were clumsy and bad at the subject and were not given the same chance as some more active pupils to show what they could do. The subject appears to meet the needs and interests of boys to a large extent and the wishes of girls were often overshadowed.

Absenteeism from upper secondary schools and the fact that private schools do not have Sport and Health to the same extent as municipal schools, are other problems highlighted in the report. The evaluation indicated that there was a need for quality development in the subject to ensure that everyone feels satisfied and experience that they are participating in the instruction provided – girls and boys, those interested in sports and those who are less active. Official statistics indicate a difference in participation between the sexes and grades in Sport and Health.

During the academic year 2001/02, 7.3 per cent of pupils in grade 9 (6.2 per cent boys, 8.5 per cent girls) did not achieve a pass in the subject. This is the only school subject in which girls to a larger extent than boys, fail in grade 9 (17). Girls are also less active during lessons. Almost seven of ten boys in grade 9 always attend lessons and exert themselves physically. For girls barely half as many, three out of ten, always attend lessons in Sport and Health, get out of breath and sweaty. Thirty-five per cent of the girls do not exercise much compared with 14 per cent of the boys. There is a considerable need therefore to observe the needs and interests of girls to a greater extent, for instance by introducing dance, music and physical activity.

Outdoor recreation is a form of physical education that could potentially interest children and young people who are not interested in sports and this should therefore be given higher priority. According to Lpo94, outdoor recreation activities are a central part of the subject Sport and Health. The course plan makes the link between outdoor recreation and an interest in nature and environmental issues. Through instruction pupils should acquire knowledge and skills in pursuing outdoor recreation. The aim is to awaken interest for outdoor recreation, nature and the environment and to stimulate an awareness of protecting and conserving nature and the environment. At compulsory school there were 3.75 whole days and 2.34 half days of outdoor recreation activities on average during the academic year 2000/01. At upper secondary school there were somewhat fewer days with 2.42 whole days and 1.75 half days during the same year. There is considerable variation between schools. Outdoor recreation days are characterised by sports activities rather than outdoor recreation and the PE teachers assess pupil's knowledge of outdoor recreation to be lacking. Compulsory school does not appear to be fulfilling its function in offering all young people the same conditions for participating in outdoor recreation thereby counteracting social stratification (18).

Another component that should have greater scope in physical education is the training of motor skills. As the motor capacities are developed the ability to feel a sense of security and self-confidence is also reinforced (8). Motor skills can therefore have considerable significance for how play and sport are experienced and appreciated (20). If children acquire basic motor skills there are better chances that they will also experience joy in movement and feel the desire to engage in physical activity both as young people and later in life (21). Adequate motor skills are a prerequisite for being able to take part in organised physical activity (22). This indicates how important it is that the exercise of basic motor skills is given adequate time for training movement and that this training is provided specifically during the early years. Observation of motor skills in the Bunkeflo project demonstrated that only 43 per cent of pupils had good motor skills when they started school equivalent to what can be expected of 6-7 year-olds (8). Four out of ten pupils in grade 6 had minor or major motor deficiencies, and boys in grades 6 and 9 were assessed to have better motor skills than girls of the same age (23). Several studies have shown that children with deficient motor skills when they start school have problems with reading and writing later on at school. The results of the Bunkeflo project demonstrate that the degree of motor skill deficiency is associated with school performance in Swedish and maths (8). According to the national curriculum, Lpo94 (24), school has a special responsibility for pupils who have deficiencies in motor skills or other difficulties in conjunction with body movement and outdoor recreation.

Measure 68

Quality indicators for education as regards healthy dietary habits, physical activity and health and for health-promoting environments with respect to diet and physical activity in pre-schools and schools should be developed and included in inspection, assessment and evaluation activities.

Actor: Swedish National Agency for Education

Measure 69

The quality audits of the work of pre-schools and schools performed by municipalities should include a report on how the environment promotes healthy dietary habits and physical activity. Teaching on healthy dietary habits and health should also form one of the indicator domains.

Actor: Municipalities

Motivation

The activities of schools are evaluated and followed regularly partly through the quality audits conducted by the municipalities and partly through National Agency for Education inspections. The audits are primarily an aid for the school's own work with quality development. Quality audits for schools are currently under investigation and will in the future be controlled to a greater extent nationally by the National Agency for Education (25). It is important to pay attention to indicators for teaching of dietary habits and physical activity and to ensure that health-promoting environments are developed with regard to food and physical activity and are included in the reporting from municipal and/or national level.

Measure 70

The subject Domestic and Consumer Science should be reinforced. Particular emphasis should be placed on the importance of diet and health and knowledge of food marketing. The gender perspective in teaching should be considered.

Actor: Municipalities/principals

Motivation

Subject areas are described in the course plan which establishes the objectives for teaching in each separate subject. Teaching about food and health takes place within the subject Domestic and Consumer Science and to some extent within Sport and Health. In the course plans for social sciences, Swedish, biology and natural sciences at compulsory and upper secondary school level there is a possible interpretation open to the inclusion of food and health. However, only in Domestic and Consumer Science and in sport and health does it specifically state that this has to be included. Domestic and

consumer science includes food, meals, nutrition and health. In addition, the subject should also teach pupils to critically examine the range of food products and make sound choices for their own health and the health of others. An important aspect of consumer science is learning to evaluate messages, handle marketing and become critical consumers. Within the subject domestic and consumer science there is also scope to practically apply knowledge about what is healthy food by cooking and tasting the food. The subject is compulsory at compulsory school but represents only 0.75 per cent of the total teaching in compulsory school and is in terms of time the school's most minor subject. It would seem unrealistic with so little time available to take up all the aspects the subject incorporates. The subject should focus on the significance to health of dietary habits and on examination of the marketing of food products. It should be a goal that all teachers are qualified and that the premises are adequate and well equipped.

Domestic and consumer science has recently been evaluated (26). The evaluation indicates that both parents and pupils are positive to the subject and that it is useful and valuable for everyday life. On the other hand, the subject displays shortcomings regarding equality objectives. Of all subjects taught this subject displays the greatest difference in results between boys and girls. Those who conducted the study summarise that domestic and consumer science has considerable development potential by taking up issues such as the environment, food, meals, health and consumption.

Measure 71

After-school care that includes physical activity should be developed and quality assured within the education system.

Actors: Municipalities and principals in cooperation with the National Sports Confederation

Motivation

As part of the drive to stimulate more children to be physically active and develop skills on equal terms, so called sports schools were established in the 1980s which were also taken up by the National Sports Confederation's School for Sports (Sportis) as a non-competitive recreation activity based in the local community and primarily directed to children up to 12 years old (27). Sports school should be seen as an opportunity for children, especially the most sedentary, to reach the recommended 60 minutes of physical activity per day. The objectives for sports school are:

- to provide all children with opportunities to train movement which is adapted to individual development levels and which enhances self-esteem and self-confidence.
- To provide girls and boys equal opportunities to engage in sport.
- To offer children fun and varied training such as creating a lasting interest for physical activity through challenges and stimulus.
- To allow children to try out and learn the basics of different sports so that they can make their own choices of sports activities later on.

Instructors are largely parents to children in the groups who work in an instructor team comprising 2-4 instructors for a group of around 15-20 children. In the context of the state allocating just over EUR 110 million extra to sports, known as the Handshake with Sport, the money can now be applied for by sports clubs for organised sports activities in school and after school hours. Through the sports schools, children are provided with motor training, a taste for physical activity and a good environment in which to increase their self-confidence and self-esteem.

Measure 72

Work on healthy dietary habits and increased physical activity in schools should be integrated with the efforts to strengthen social relationships and mental health.

Actor: Municipalities/school principals

Motivation

Social skills and competence (such as a positive self image) are important protective factors to combat risk behaviours or which contribute to a healthier lifestyle and better mental health (28). The psycho-social working environment in school is important for children's health. Social support and social integration appears to have a positive effect on both mental and physical health partly because it promotes self-esteem, self-confidence and develops social competence. Earlier research has shown that there is a link between mental ill-health and low self-esteem (29) and several studies indicate also that there is a link between overweight and low self-esteem (30-31). In a recent Swedish study (31) the self-esteem of young people was linked to lifestyle. Young people with low self-esteem ate unhealthy food more often and had more irregular meal patterns than others. Boys with low self-esteem also had a higher BMI and larger waist circumference than those with high self-esteem. Young people with low self-esteem were more sedentary and less physically active than those with high self-esteem. In another Swedish study (32) it was shown that training and exercise affected young people's self image and body image in a positive way. It was also shown that among girls who became inactive at an early age as teenagers, structured exercise and training programmes over a six month period were able to reduce a special type of worry/anxiety that others would judge their bodies negatively. It is also worth noting that low self-esteem is often followed by other symptoms and problems among young people such as loneliness, depression, cigarette smoking and alcohol consumption (33).

Friendships at school are related to mental health among Swedish children and young people (34). The link between good social relations and mental well-being is clear at individual level and has also been seen at school class level (35). In school classes where there are marginalised children the pupils generally were less happy than in other school classes which indicates that the existence of marginalised children is an indication that there are problematical relationships in the group as a whole.

Health promoting school-based programmes including school healthcare, personnel courses, pedagogical measures in the classroom and special measures for groups of high-risk pupils should be developed (36). It is also of great importance to

continually follow up indicators in this field in Sweden in the same way as welfare surveys among children and young people are conducted for example by Barn-ULF (*Children – survey on living conditions*). Integrated measures against overweight and eating disorders should be developed so that pupils should not be confronted with contradictory messages (37). It is especially important that self-esteem is enhanced, by strengthening social relationships. There is good potential that this measure could prevent eating disorders and create conditions for pupils to develop healthy dietary habits and increased physical activity.

Vocational programmes at upper secondary school and university colleges/universities

Measure 73

Vocational upper secondary school programmes leading to jobs in healthcare, pre-school, the food sector and social services, such as nursing assistants, catering staff and child carers, should contain the core subjects of diet, physical activity and health.

Actors: Government and the Swedish National Agency for Education

Measure 74

University/university college programmes on healthy dietary habits, physical activity and health education should be developed. These could be included as optional or compulsory components of vocational programmes aimed at jobs within education, social services, healthcare and food inspection.

Actors: Universities and university colleges

Motivation

Many occupational groups, especially within the caring professions, schools and nursing and childcare, provide in their professional capacity, advice about food and physical activity and also have to take a position on these factors in their occupations. Environmental and health inspectors, restaurant personnel and people with personnel responsibilities are groups which have influence on the food served in different contexts. The public, parents and patients have considerable confidence in the occupations within childcare, school and nursing. Furthermore, often they find themselves meeting these professionals in life situations when they are strongly receptive to advice and information. This is the case especially for pregnant women, parents of young children and patients. People in lower socio-economic groups especially seem to have confidence in these professions (38). At the same time these professions meet large parts of the population. Personnel at pre-school and school meet all children for long periods and act as conveyors of health-promoting lifestyles in their attitudes to and knowledge about dietary habits and physical activity. Personnel within maternity and child healthcare meet all pregnant women and parents of young children. Personnel within the dental services meet all children annually and 80 per cent of the adult population over a two-year period (R. Svensson. Swedish Dental Association, personal communication).

Many of these professional groups lack or have inadequate competence regarding food, physical activity and the link with health and especially the way in which this knowledge is passed on to motivate changes in behaviour. The latter is not least important with regard to vulnerable groups and groups with different ethnic back-grounds. In a recent survey considerable deficiencies were found in the teaching of diet and

nutrition in education, care and nursing programmes (39). Nutritional science and dietetics was not part of the course plan on the childcare, after-school care or on the teacher training programmes. The same applied to nursing programmes and care programmes in which nutritional science was not offered as an independent subject. Nutrition recommendations for healthy and ill people including the special needs of the elderly should be a priority subject on these programmes. On programmes for chefs and cooks there was no extensive teaching of nutritional science. Teacher training programmes did not include or had very limited courses on food, physical activity and health (1).

All trainee teachers take a general education course comprising 60 points. Since the Government wants to highlight the concept of sustainable development the teacher training programmes should emphasise the significance of dietary habits and physical activity to health and to sustainable development more. The training of principals does not include any aspects of food, physical activity and health. In interviews with principals in four Stockholm suburbs it was found that the principals act on the basis of the social conditions in the areas in which they work when they identify what is the school's responsibility and what is the home's responsibility for children's food habits. Within the framework of the forthcoming review of training programmes for principals which the Agency for School Improvement will be conducting, the authority should observe these issues with the aim of reinforcing them in the training programme. Different training programmes in the care sector include nutrition in some programmes although to a very limited extent. A condition for school personnel to be able to convey an attitude to food and physical activity in a health-promoting way, and that care personnel should be able to talk to patients and promote changes in behaviour, is that they have better knowledge of the importance of diet and physical activity to health and methods of health communication.

Training programmes for occupational groups in the education sector (child carers, pre-school teachers, teachers of younger and older children, upper secondary teachers, principals, after-school care personnel and social pedagogues) should include aspects of the significance of diet and activity to health, how to promote a healthy environment regarding diet and physical activity, along with elements about outdoor recreation, outdoor pedagogy and consumer science.

Training programmes for occupational groups in the healthcare sector (nursing assistants, nurses, doctors, physiotherapists, dentists, dental nurses, dental hygienists, nursing personnel) should include courses in nutrition, the significance of diet and physical activity to health, course on how to successfully convey and communicate messages concerning changes in dietary habits and other lifestyle habits, especially to socially exposed groups, through motivational interviews along with pedagogical methods for enhancing positive interplay between parents and children.

Training for personnel in the food sector (environmental and health inspectors, restaurant personnel) should include courses in nutrition, basic nutrition calculations of meals and regulations for symbol labelling.

Measure 75

The number of places on teacher-training programmes in Domestic and Consumer Science should be increased, as should the scope for students on teacher training programmes at other universities/university colleges to supplement their studies with such courses.

Actors: University/university colleges

Motivation

There are too few domestic and consumer science teachers in schools today. Only 42 per cent of the posts are filled by qualified teachers. It is not possible to strengthen this subject without more qualified teachers. The average age is high and the need for qualified teachers in this subject will increase in the next few years.

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Policy for the elderly

The national objective for policy for the elderly states that older people should be able to live active lives. For older people, physical activity, training and a healthy diet is an especially important part of preventing ill health, improving physical and mental capacities and thereby maintaining both a sense of well-being and a high degree of personal independence. Four pillars have been seen to be decisive for better health among the elderly: physical activity, healthy dietary habits, social support and having a meaningful task/to feel needed (1).

Sixteen per cent of those over 65 have contact with care services or home help services, of which 7 per cent (118,600) live in sheltered housing. For those over 85 the equivalent figures are 38 and 33 per cent. Older people dependent on help and support represent a group identified at an early stage as a risk group in terms of nutrition problems (2). This is due to many different factors and problems associated with the individual such as low energy expenditure, little appetite or difficulties eating. It may also be due to problems more related to the organisation which manages meals and mealtimes for care-takers within the framework of care services. In relation to this, deficient knowledge among personnel and inappropriate meal arrangements have been found to be a problem (2). The enquiry 'Health on equal terms' states that elderly people in sheltered housing should be encouraged to engage in physical activity (3).

Measure 76

An enquiry should be set up to analyse how meals/mealtimes are organised within the elderly care service.

Actors: The National Board of Health and Welfare in cooperation with the National Food Administration, Swedish municipalities and county councils.

Cost: EUR 53, 000

Motivation

In a study into the meal activities of elderly care (4), it was found that the organisation of meals and mealtimes was unclear, both in what actually should be offered to the elderly people and who was responsible for them having the opportunity to have an adequate nutrition intake during worthy mealtimes. It is also clear that politicians and different personnel groups within the organisation were fairly dissatisfied with the food and the mealtimes offered to the elderly. At the same time they felt powerless regarding the issue and referred to someone else who they felt had more responsibility. The fact that the problems around food can be seen in both purely health and nutrition terms as well as a problem of meeting people with integrity and social needs is also a complex area difficult to handle in elderly care. Due to the complicated nature of the issues, it is considered justified to propose a special enquiry.

Such an enquiry should establish:

- Any need for legislation to secure adequate dietary provision (including demands for the nutritional quality of food and the distribution of mealtimes throughout the day) in municipal elderly care.
- Responsibility at authority level.
- Criteria to be used for supervision which incorporate both food, meals and social care.
- Requirement specifications with subsequent quality follow-up in the context of procurement of meals.
- The need for a central post at the relevant authority to be responsible for issues concerning the dietary provisions for care-takers.
- Dietary competence used both in organisational issues and to support and assist personnel, the elderly and disabled and their relatives.
- Opportunities for elderly people living at home to regularly receive preventive home visits with advice concerning healthy food for elderly people.
- Forms for supporting pensioners' organisations and other voluntary associations' initiatives and efforts.

Measure 77

Guidelines and quality indicators for food and physical activity should be developed within elderly care.

Actors: Municipalities in consultation with the National Food Administration and the Institute of Public Health

Motivation

Even though the state, the county councils and the municipalities are all responsible for the care provided to the elderly, the municipalities are responsible according to the law, for healthcare and nursing provision. This responsibility encompasses also the food and meals served within activities for which the municipality is responsible. How the municipalities organise this and what resources they allocate to these activities varies considerably. This means that both the organisation of municipal care and food provision within the care service varies both in terms of form and content. There are no surveys of how Swedish municipalities organise activities concerning food and meals for those dependent on care for the elderly. In a survey of the work of municipalities/district on diet and nutrition within elderly care, 251 questionnaires were completed of the 418 sent out (5). Of these 251 responses, only 80 municipalities/districts stated that they included diet and nutrition in their quality work.

Even though a general enquiry it is proposed at national level, municipalities should start work now on improving the meal situation and opportunities for physical activity for the elderly by working out a guide and quality indicators for food and physical activity in care of the elderly. This might include:

- Instructions that the meal provision activities of the municipality should meet national nutrition recommendations.
- Procurement of meal provision activities should be conducted with requirement specifications and quality follow-up regarding nutritional quality.
- Dietary competence should exist and be used in relation to the organisational issues and to support personnel, the elderly, the disabled and their relatives. Clarification of distribution of responsibility for diet in municipal elderly care. How access to food and drink of good quality can be secured for those who are dependent on support for this.
- How elderly people can be assured appropriate physical activity and daily time spent outdoors.

Measure 78

Elderly people should have the option of daily physical activity that is appropriate with respect to their age and health status and daily outdoor activity to improve strength, mobility, fitness, coordination and balance. Exercise programmes adapted to the needs of the elderly should be developed. Elderly people living at home should receive preventive home visits including advice on appropriate diet and physical activity.

Actors: Municipalities in cooperation with the relevant associations.

Motivation

A review of the available evidence (6) asserts factors that provide the basis for time spent outdoors having significance for health among the elderly. The positive health effects from sunlight, air and temperature, from the outdoor environment itself as well as the positive health effects of outdoor physical activities. Nine out of ten people in the age range 55-64 feel that good footpaths without large height differences and with plenty of benches at various points mean that even less mobile elderly people can get out on their own, enjoy sunshine and the natural environment, meet acquaintances and feel a sense of community (8).

From a scientific point of view, it is clear that regular physical activity and training can reduce and prevent different age-related changes (1). Men and women can improve their fitness and endurance, as well as balance, strength and mobility up to a relatively high age. Endurance training and training of strength have beneficial effects on risk factors for cardio-vascular disease, affect balance, muscle strength, function capacity and coordination which reduces the risk of falling accidents and fractures.

Physical activity also appears to be able to affect various pathological factors among elderly people. In general, available research supports the claim that physical activity among the elderly is an effective way of maintaining a high level of activity and a high degree of independence among older men and women. Fitness and strength have to be maintained, however, and the effects disappear faster for elderly than for younger people.

Research indicates that elderly people who change from a passive lifestyle with low daily physical activity to become active can extend independence and manage to cope on their own for a further eight to ten years, halve the risk of suffering a stroke, reduce the risk of several forms of cancer, high blood pressure and other problems. Training provides a series of positive effects on conditions such as rheumatic pain, osteoporosis, stress and body weight which is too high or too low (9).

Suitable activities include walking, dancing, gymnastics and swimming. It is never too late to start with physical activity. Older people can and have the right to develop and learn new skills.

Experience from outreach work to healthy older people living at home conducted by the home help services illustrates how important it is to have support and encouragement.

Physical activity is, along with home visits to correct dangers in the home, the most important measure to prevent fall accidents among the elderly (10). The Nordmaling project demonstrates that the preventive home visits to pensioners living at home is an efficient measure for helping the elderly to maintain good health (11).

Measure 79

Municipalities should create meeting places in the local environment that promote physical activity and healthy dietary habits among the elderly and that reduce isolation and inactivity.

Actors: Municipalities in cooperation with relevant voluntary organisations

Motivation

Aging in itself, disease and the loss of those close to us can mean a reduced social network and need for extra support to recreational activities (1).

Many elderly people need support related to their dietary habits to ensure they eat enough nutritious food, and to acquire knowledge about how to cook food themselves. Study organisations and pensioners' associations offer activities and expertise such as gymnastics for the elderly. Access to premises and cost are decisive for taking the initiative and getting people to participate.

According to the National Organisation for Pensioners and the Swedish Pensioners' Association, there are not enough meeting places for elderly people. These premises should be free or subsidised so that the elderly feel they can afford to take part in activities. Many associations for immigrants conduct activities and day centres where older people can meet. Experience indicates that the associations that have language and cultural competence are quick to recruit many elderly people to their activities. This suggests that the need is great and that meeting places fill an important function for older people (9).

The role of municipalities is to create good conditions for the volunteers and also for organisations for the elderly. Efforts were made within the framework for the Residential Services Authority set up by the Government in 1985, with the aim of stimulating cooperation at local level between the elderly and associations for older

people and public and commercial services. An underlying idea was to make it easier for the elderly to remain in their homes. One experience is that municipalities can play a role as coordinators providing support and creating the necessary conditions (6).

In Älmhult, the municipality contributes to an active lifestyle and a broad network among pensioners. Cooperation takes place between the district committee for culture and that of recreation and the older people can test what voluntary organisations have to offer. The project had initial support from the Ministry of Social Affairs and is now being run by the municipality in a cross-sectoral cooperation between the county council and associations (1).

'Loket' is an open house run by elderly care services in Emmaboda municipality. It has a stated public health aim to increase people's quality of life, make it easier for elderly people to remain in their own homes and to prevent ill health and the need for care (1). Cooperation occurs between the municipality, the county council and associations. The activities have been evaluated and the results show that the development of meeting places have led to reaching people with weak networks and that this gave personnel more time for providing individual support.

Another successful example of how municipalities can create meeting places for elderly immigrants is the Bozorgan association which started a day centre in Gottsunda (Uppsala municipality) in 1996 with the aid of a grant from the Ministry for Social Affairs. The association directs attention primarily to older people from Iran and today a hundred or so women are involved in different group activities. The activities are run by Uppsala Municipality in broad cooperation with different care units and grant assessment officers. An evaluation demonstrated that the number of doctor's visits in the group has decreased by more than half (12).

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