PUBLIC HEALTH INSTITUTE
OF ICELAND

Policy, Vision and Action Plan

Public Health Institute of Iceland
March 2007

Contents

Introduction

The Public Health Institute of Iceland was founded in 2003 under the provisions of Act no. 18/2003. Since that time, the Institute has been working on its policy and vision, together with an action plan. The outcome of that work is summarised here.

The booklet begins with definitions of some concepts relating to public health, and a brief discussion of health in Iceland and determinants of health. The role of the Public Health Institute is explained, together with its policy and vision, and the development of a balanced-scorecard system at the Public Health Institute. Finally, the objectives and approaches in public health work, based upon the balanced scorecard, will be summarised. The formulation of objectives is concerned with internal activity, but equally importantly with the Institute's outreach, and with the possible benefits of preventive measures and health promotion for the people of Iceland. The objectives are not stated out of context: they are accompanied by a brief description of the methods applied by the Public Health Institute in order to attain those objectives. Clearly, public health work involves many different bodies. Thus success is contingent upon COLLABORATION between all those who are working to enhance public health in Iceland.Various methods are applied in order to attain the objectives, and effective project management is a fundamental aspect of the Institute's work. The Institute uses a project-management method from the UK government, *Prince 2*[1]. The method has been adapted to the requirements of the Public Health Institute and the ideology of developing and implementing preventive and health-promotion programmes.

Definitions

Health

Health is a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity. [2]

Public health

The science and art of promoting health, preventing disease, and prolonging life through the organized efforts of society. [3]

Public health is concerned with maintaining and enhancing the health, wellbeing and conditions of peoples and social groups through general health care and health services, health promotion, research and social responsibility.
Public health work is grounded in extensive collaboration and multi-disciplinary approaches, and is concerned with e.g. social, environmental and economic issues.

1 Prince 2 website. Downloaded 2.6.06 from http://www.ogc.gov.uk/prince2/.
2 World Health Organisation website 2006: http://www.who.int/suggestions/faq/en/.
3 World Health Organisation website 2006: http://www.euro.who.int/observatory/Glossary

Health in Iceland

The people of Iceland enjoy better health today than ever before. Infant mortality is among the lowest in the world, and life expectancy, not least life expectancy in good health, is higher than in most other countries. Many infectious diseases have been all but eliminated by means of inoculation, improved hygiene and medications, and efforts to combat the major cause of death in Iceland, cardiovascular disease, have led to a considerable reduction in cases of illness and death from this cause. [4]

Causes of death 2004 Statistics Iceland reports

Number of deaths	
732	Cardiovascular disease
522	Tumours
141	Respiratory disease
109	Neurological and sensory disease
104	External injury and poisons
56	Mental and behavioural disorders
52	Disease of digestive system
30	Glandular, nutritional and metabolic disease
15	Infectious and parasitic disease
63	Other diseases

Increased prosperity, improved health services, technical advances, and an equalising social system are probably the major factors in these improvements in public health. At the same time, threats to health have become increasingly noticeable, especially those consequent upon longer life and the changing age composition of society.

The weight of diseases and other threats to health in society may be assessed in various ways. Cause of death, and mortality figures for individual categories of disease, have long been the commonest indicator, but this is not the only way to assess the impact of diseases. Other methods are being used, such as calculating the number of good years of life lost due to specific diseases or risk factors (disability adjusted life years or DALY). The aim is to calculate the impact of the disease upon health, taking account of when in life the impact occurs. These two methods thus show two different aspects of the nation's health: Cardiovascular disease and cancer are the leading causes of death in Iceland, while depressive disorders top the DALY list, according to the European Health Report of the World Health Organisation Regional Office for Europe. Alzheimer's and other dementias are also near the top of the DALY list, as are hearing loss, respiratory diseases and self-inflicted injuries, along with cardiovascular diseases.[5] While these methods of valuation, and the premises on which they are based, are debatable, it is clear that preventive and public health work must take account of the best available information on the nation's health at any time, and on threats to health in society and factors which are known to influence health.

Disability adjusted life years (DALY) for Iceland

Rank order	
1.	Unipolar depressive disorders
2.	Ischeemic heart disease
3.	Cerebrovascular disease
4.	Alzheimer's and other dementias
5.	Hearing loss
6.	Chronic obstructive pulmonary disease
7.	Trachea, bronchus and lung cancer
8.	Self-inflicted injuries
9.	Alcohol-use disorders
10.	Road-traffic accidents

[4] Health at a Glance. OECD Indicators 2005 Paris. OECD.

[5] WHO Europe (2006). *The European health report 2005: Public health action for healthier children and populations.* Copenhagen: WHO Regional Office for Europe.

Determinants of health

A considerable share of the burden of disease may be attributed, in Iceland as elsewhere, to a small number of defined risk factors. Use of tobacco, high cholesterol, obesity and high blood pressure are the leading risk factors, followed by alcohol consumption, physical inactivity, use of illicit drugs, limited consumption of fruit and vegetables, and unsafe sex. These risk factors are shown in the table[6] in order of importance, according to a report from the WHO Regional Office for Europe. Interestingly, tobacco still tops the list, indicating that it has a greater impact on life and health than any other individual risk factor. But in view of the fact that fewer and fewer Icelanders are smoking, the impact of tobacco on health may be expected to decline, at least vis-à-vis other risk factors whose impact is increasing, such as obesity.

Biggest risk factors for DALY

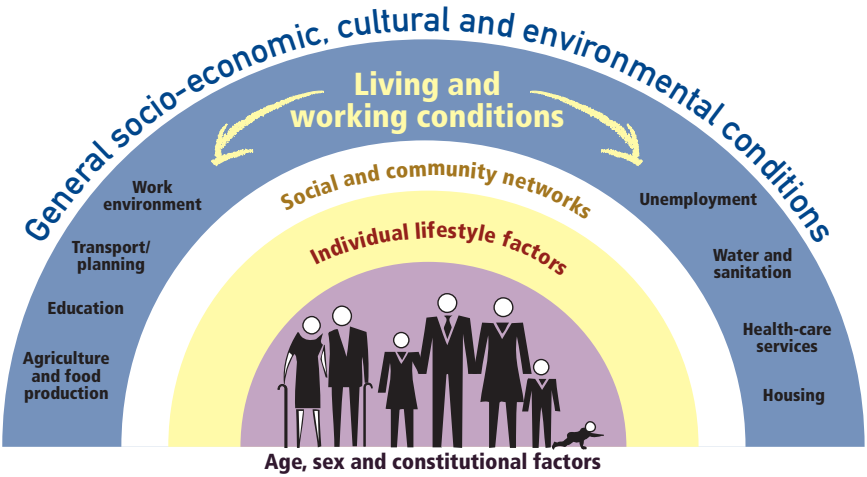
Rank order	
1.	Tobacco
2.	High cholesterol
3.	High BMI
4.	High blood pressure
5.	Alcohol
6.	Physical inactivity
7.	Illicit drugs
8.	Low fruit and vegetable intake
9.	Unsafe sex
10.	Iron deficiency

The work of the Public Health Institute is based upon defined and recognised risk factors relating to individual lifestyle. Factors which have an impact on health and disease are, however, too complex to be attributed solely to personal lifestyle. Health and disease reflect complex interaction between the individual and his/her environment and circumstances: social and economic status, education, and conditions at home and at work also play a major part. In addition, people's opportunities to live a healthy life are largely a function of their environment, e.g. transport, environmental issues, educational issues, availability of foods, and services to the inhabitants.

The diagram shows determinants of health, categorised according to how far the individual can influence them by his/her own decisions and responsibility.

Public health work must take account of all these important determinants; but government policy is probably the crucial factor with respect to the health of the population.

[6] WHO Europe (2006). *The European health report 2005: Public health action for healthier children and populations.* Copenhagen: WHO Europe.



Source: Dahlgren og Whitehead. http://www.west-norfolk.gov.uk/default.aspx?page=22422.

Even in affluent nations, a clear division is discernible between different social groups with regard to health and disease. The more advantaged generally enjoy better health, whether the difference applies to social class, level of education, or managers and employees of businesses and institutions[7]. Equal rights to health are an important issue, and this is in fact one of the principal objectives of Iceland's health plan, and the first objective of the World Health Organisation's *Health for All in the 21st Century* plan. The Public Health Institute takes account of these priorities in its work, and is planning, for instance, a detailed survey of the impact of circumstances and inequality on health and wellbeing in Iceland. The findings of the survey will hopefully be useful to the government and other influential parties in policy formation and action to enhance the health and wellbeing of all the people of Iceland.

[7] WHO Europe (2003). *Social determinants of health. The solid facts.* 2nd edition. Eds. R. Wilkinson, M. Marmot. Denmark: WHO Europe

Public Health Institute – Role and Policy

The work of the Public Health Institute has above all been guided by the principle that the people of Iceland be provided with opportunities to live a healthy life. Health education carried out by the healthcare system, schools and other agencies plays an important role. The Public Health Institute thus places emphasis on collaboration with various bodies and organisations, and support for them, in various educational programmes. Health-enhancing conditions and facilities, whether at work, at home or during leisure hours, are also of vital importance to public health. These are affected by decisions made by government, employers and other influential parties – decisions which can enhance life and health, or alternatively lead to unforeseen damage, in the short or the long term.

The role of the Public Health Institute is to provide the people of Iceland with opportunities for a healthy life by:

- Promoting knowledge by participation in research and teaching.
- Educating, thus influencing attitudes and behaviour.
- Providing advice to government, and thus being an influence to enhance conditions.

Priority is given to collaboration with local government, and support for programmes in the fields of prevention and health promotion. But knowledge of risk factors has little significance unless efforts are made to apply the best knowledge and tried-and-tested methods to promote health. The Public Health Institute thus places emphasis on being a centre of knowledge for effective methods in public health, and of research in the field.

The Public Health Institute's policy is to improve public knowledge of the determinants of health – social and environmental determinants, and lifestyle factors – and to seek to ensure that such knowledge be reflected in the attitudes and work of government, employers and other parties which influence the standard of living, health and wellbeing of the people of Iceland.

Public Health Institute – Vision

By public health work in Iceland in the period until 2010:

- knowledge and consciousness of the crucial factors influencing health and wellbeing are to be enhanced among the public and those in authority
- a vigorous network of spokespeople for public health is to be established in society
- the Public Health Institute is to collaborate with universities and research bodies on teaching and research in the field of public health
- the Public Health Institute is to perform regular surveys on health and wellbeing in collaboration with other bodies, and to use the findings in public health work and policy formation
- a foundation is to be laid for health evaluation, whereby the impact of government policy on health is evaluated
- the Public Health Institute is to participate in diverse international collaboration
- the Public Health Institute is to establish an image among the people of Iceland based upon trust and credibility
- systematic use is to be made of research findings, taking account of recognised health indicators

Balanced Score-card

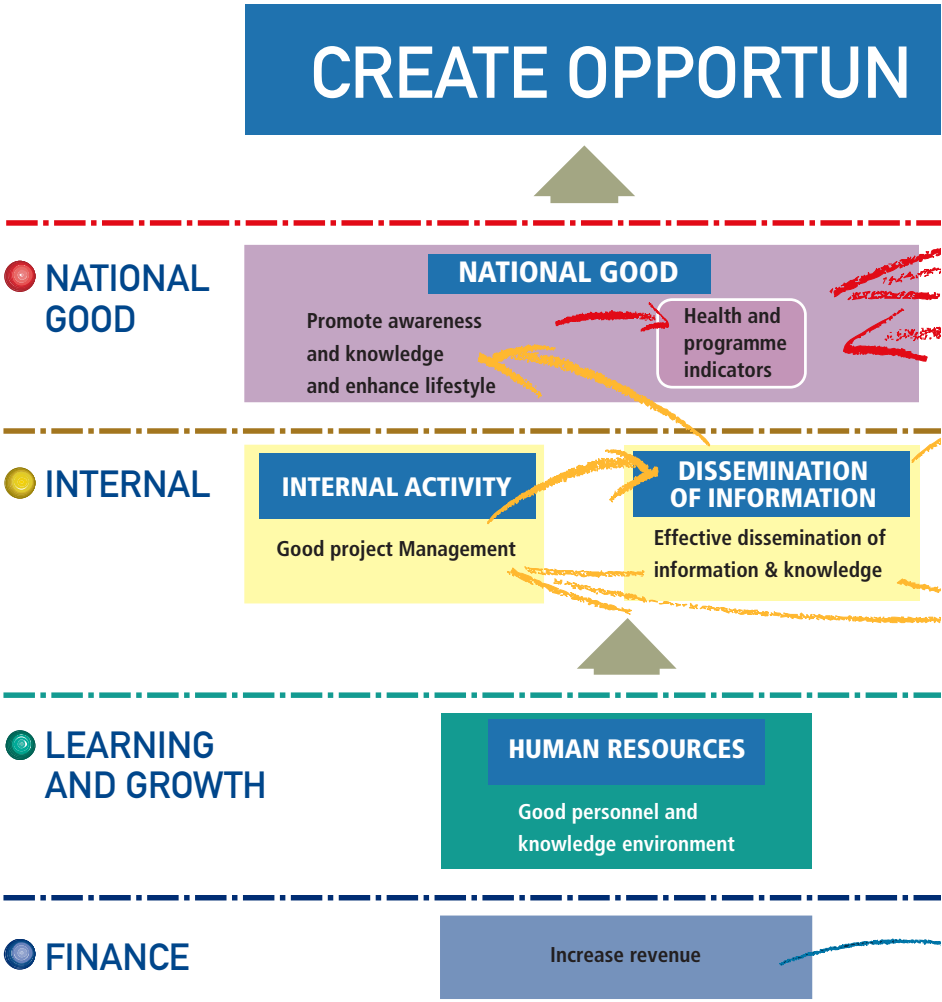
As soon as the Public Health Institute was founded, it undertook the task of creating a new agency from a multitude of public committees and programmes. Great effort has been devoted to policy formation and formulation of objectives for specific fields and programmes. The Public Health Institute's formulation of objectives takes account of the objectives stated in the government's National Health Plan for the period to 2010[8].

The Public Health Institute has applied measurement-based management using the Balanced Score-card method in formulation of objectives, both with respect to its internal and external activities. The Balanced Score-card system involves two principal tools: a Policy Card, and a Score Card which is based upon the Policy Card. The Balanced Score-card system evaluates performance from four perspectives: *Finance, Learning and Growth, Business Processes*, and *Customers*[9]. In the Public Health Institute's case, the fourth perspective is termed not "customers" but the "national good" (see next page).
The purpose of measurement-based management varies from one institution or business to another. In the case of the Public Health Institute, the primary purpose is to formulate the policy and objectives of public health work with clarity, and to demonstrate the causative links between different aspects of the work. Following the creation of a policy card, a score card has been prepared, which states specified objectives and yardsticks which reflect the policy. This form of presentation is conducive to the work being more performance-oriented.

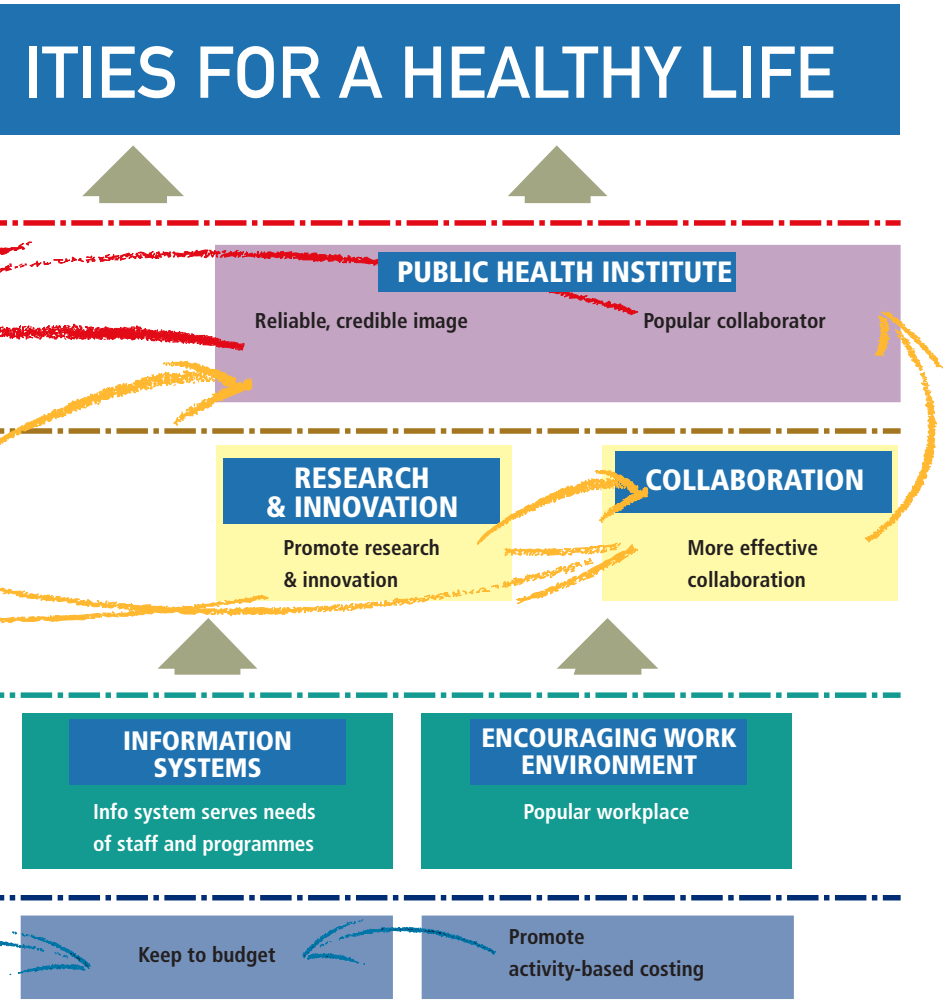
[8] Icelandic National Health Plan to 2010. See http://eng.heilbrigdisraduneyti.is/Information/nr/1640
[9] Kaplan, R.S., and Norton, D.P. (2001). The Strategy-focused Organization. Harvard Business School Publishing Corporation.

Public Health Institute Policy Card

The Public Health Institute's Policy Card (see diagram) states the priority issues of the Institute from the four perspectives of the Balanced Score-card. The factors emphasised in the Policy Card are presented in a graphic manner, e.g. "Keep to budget."
At least one yardstick has been specified for each factor; these yardsticks are stated in the



Score Card which is prepared on the basis of the Policy Card. There are never more than three yardsticks for each factor, with one exception, under the perspective of the National Good, and the priority factor Health and Programme Indicators. In this case many yardsticks are used, explained more fully under each specific issue.



Public Health Institute Score Card

In the Public Health Institute's Score Card, yardsticks have been defined to measure and monitor the outcome of the Institute's activities. The diagram does not show all the yardsticks, but gives some examples.

FINANCE

Keep to the budget

Be within ± 4% of budget, as provided by law.

Increase revenues

The Public Health Institute is to increase its independent revenues

Promote activity-based costing

Reduce earmarking of funding as is currently the rule in the Budget.

LEARNING AND GROWTH

Good personnel and knowledge environment

Staff to be suitable for the work of the Public Health Institute and to have opportunities for ongoing education. Outcomes measured, e.g. by introducing an effective quality system with a good human resources policy

Information system serves needs of staff and programmes

Information systems to support Public Health Institute programmes, e.g. by means of an IT plan on operations and database.

Popular workplace

Public Health Institute to be a popular workplace, and the working environment encouraging. Outcomes monitored, e.g. by participation in surveys of Commercial Workers' Union.

INTERNAL

Good project management

Promote project management, so that plans are made for all programmes and they are carried out in accord with the plan.

Effective dissemination of information and knowledge

Optimise access to PHI information. PHI to have a good communication network. Measured e.g. by number of visits to PHI website.

Promote research and innovation

Set up research schedule and promote research, analysis and innovation relating to health promotion and prevention.

More effective collaboration

More effective collaboration with parties which can influence people's conditions, attitudes and lifestyle.

NATIONAL GOOD

Health and programme indicators

Objectives are diverse, stated within each field or programme. See section on Objectives and Approaches, Health and Programme Indicators.

Promote awareness and knowledge, enhance lifestyle

Objectives are diverse, stated within each field or programme. See section on Objectives and Approaches, Health and Programme Indicators.

Sought-after collaborator

To be a vigorous collaborator with regard to health. Measured by requests from the parliament and requests for collaboration from companies, local government, health care, schools and other bodies.

Reliable, credible image

Create a reliable, good image. Measured regularly by opinion polls.

Providing Information

An important aspect of the Public Health Institute's work is to promulgate reliable information on health and the factors which affect health, and also to prepare educational material on the Institute's fields of work, in collaboration with various bodies and agencies. In this work, the Institute utilises the media deemed most suitable in each case. The Institute strives to collaborate closely with the relevant stakeholders, such as schools and healthcare providers, so that educational material is in keeping with the needs of the intended users. The Public Health Institute also places importance upon material provided by the Institute being known for quality and reliability. Major information programmes, like the Institute's other programmes, are evaluated for outcome and effect; it is important that the Institute's publications and other information activities be efficient and effective.

Website

In a modern society, the Internet is the quickest and most immediate information medium available. In its information work, the Public Health Institute seeks to make the best possible use of its website, www.publichealth.is

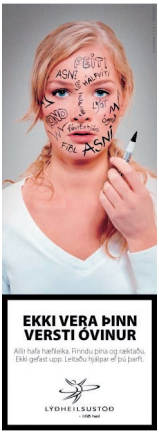
The website provides information on the daily work of the Institute, news, educational materials, research findings, and other matters relating to the Institute's activities.

The Institute's publications can be ordered on the website, or read on-line and printed out. In the presentation of material on the website, various methods are used to optimise access for all users. In its information work the Institute plans to make still better use of the website, e.g. by systematic inclusion of information and teaching material which teachers and health personnel can use in their work, and also educational material aimed at other groups, such as parents, young people and the elderly. Project managers in each field are responsible for the specialised content of the website.

Educational material on interactive sites can be useful to many, e.g. those who wish to give up smoking, and need advice and help in accord with individual needs. A certain amount of such material is already on the website, and more will be added in the near future. A help site for those who wish to stop smoking is in preparation, based on a website which has proved successful in Norway and Sweden.

Publications

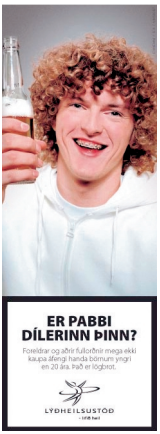
In its information/education activities the Public Health Institute makes use of the media which are deemed most suitable for the purpose. The need for printed literature is still considerable, but this is expected to decrease as more use is made of the website, etc. Information/education material is published in connection with the Institute's activities, after needs analysis has been carried out. Publications may be published by the Institute alone, or in collaboration with other bodies. The Public Health Institute publishes material in a variety of formats: printed literature, CDs, video material, refrigerator magnets, etc. The intention is to continue to use many different media, while all the Institute's published material is also to be accessible on the website. Emphasis will also be placed upon translating the Institute's educational material into other languages, as required.



"Don't be your worst enemy"

Getting the message across

One aspect of reaching the eyes and ears of the target group is to advertise. Advertisements have primarily been published in periodicals of various organisations and high schools, where the advertising cost also serves as a contribution to their work. On special occasions, such as World No Tobacco Day, Dental Health Day, and the August Bank Holiday, the Institute also publishes advertisements in the mainstream media, such as newspapers, magazines, on TV and in cinemas.



"Is Dad your dealer?"

Research and Evaluation of Outcomes and Programmes

Most of the Public Health Institute's research is carried out in collaboration with other research bodies and universities – and one of the main objectives of the Institute is to promote research in the field of public health by the scientific community. With this in mind, the Institute has already signed a framework agreement with the University of Akureyri, and a declaration of intent has been signed between the Institute and Reykjavík University.

The principal objectives of the Public Health Institute's research work are:

- To monitor developments in health-related factors and determinants of national health, and to publish findings in an accessible form for all those involved in public health work in Iceland
- To evaluate the outcomes and processes of public health programmes, with the aim of developing and reviewing methods and enhancing activities
- To develop a database where all available data on findings of research and surveys on public health will be readily accessible

Health and Wellbeing of Icelanders

A comprehensive health survey – Health and Wellbeing of Icelanders – is in preparation, which is to be submitted to a sample of 10,000 people aged 18-79 years in 2007. Many agencies and scientists are involved in the programme. Its main purpose is to gather information on people's health, wellbeing, quality of life and diseases, and on the principal determinants of health, i.e. lifestyle, circumstances and conditions. This information should prove useful to government and other stakeholders in their policy formation, programmes and planning. The survey will focus on factors which are not covered by the statistics collected by the healthcare system and Statistics Iceland. Evaluation of equity between individuals and social groups will be evaluated, especially with regard to health, conditions of life and health-related factors.

Health Behaviour in School-aged Children (HBSC)

Health Behaviour in School-aged Children (HBSC) is an international study, which was first carried out in Iceland in February 2006. The survey was submitted to almost every school child in grades 6, 8 and 10 (aged 12, 14 and 16 years). The HBSC study covers a very broad range of subjects: from mental, physical and social wellbeing to daily life, such as diet, exercise, sports

activity, dental hygiene, computer use and TV watching. The children are also asked about their family and friends, and risk behaviour such as substance abuse, bullying and accidents. Initial findings were published in April 2006, and an international comparative report is due for publication in 2007. The HBSC study is a collaborative programme of the Public Health Institute and the University of Akureyri, while the team also includes scientists at other bodies.

Surveys and research in specific fields

Surveys and research on specific issues are carried out in collaboration with the relevant project manager and the Public Health Institute Research and Development Division. Examples are surveys on the prevalence of smoking, on diet and other lifestyle factors, and analysis of the effect of government alcohol policy. Other studies are carried out in collaboration with universities and research bodies: e.g. a study of oral health in Iceland, *MUNNÍS*. The Institute's Research and Development Division also participates in evaluation of the Institute's major programmes, with respect to the impact and the process of the programme. Examples are the programmes *Zippy's Friends, Allt hefur áhrif – einkum við sjálf!* (Everything affects us – especially ourselves!) and *Ábyrgð – öllum í hag* (Responsibility – in Everyone's Interest).

Research in high school

In collaboration with the Public Health Institute and others, Reykjavík University and the research company *Centre for Social Research and Analysis* undertook a survey of high-school students in 2004. Findings have been published on young people's use of tobacco, alcohol and other substances, and the Public Health Institute intends to take part in processing these data in the coming years together with Reykjavík University and *Centre for Social Research and Analysis*.

ESPAD

ESPAD (European School Survey Project on Alcohol and other Drugs) collects international data on use of alcohol and other substances by children in grade 10 (aged 16) throughout Iceland. Such studies have been carried out every four years in collaboration between the Public Health Institute and university agencies, and this collaboration is planned to continue. The principal findings of the last survey were published in December 2005; this viewed Icelandic youngsters' use of tobacco, alcohol and other substances in the international context.

Young people's attitudes to prevention and health

A study is planned on the attitudes of youngsters in compulsory education (to age 16) and in high school (age approx. 16-20) to risk behaviours, healthy lifestyle and preventive activities. The survey aims to gain a better understanding of young people's views of these issues, in order to enhance preventive and health-promotion activities, and the conditions of young people.

Objectives and Approaches in Public Health Work

Health and programme indicators

Health indicators

Programme indicators

Objectives and Approaches in Public Health Work

This section will discuss objectives and approaches in the fields and programmes which fall within the ambit of the Public Health Institute. Objectives are stated in numerical terms wherever possible. The objectives of the National Health Plan until 2010 are used where applicable. The formulation of objectives, both with regard to content and numerical values, can be debatable; the objectives have been formulated in collaboration with a specialist board and with stakeholders and professionals. The external environment is constantly changing, and with it the impact upon the individual factors covered by the objectives. Thus constant monitoring and revision of objectives is necessary, along with review of whether the objectives are suitable, and the numerical values realistic.

Health and programme indicators

Since the beginning of 2005, the Public Health Institute has been working to create **health indicators**, which are defined indicators of health. Health indicators must cover a broad spectrum, including social factors which are determinants of health, lifestyle, health-care services, environmental and educational factors, employment, and statistics on health, wellbeing and life expectancy. Initially, the Public Health Institute focuses on health indicators relevant to matters within the Institute's ambit, relating to lifestyle. Ongoing definition of health indicators will be carried out in collaboration with the Ministry of Health, the Directorate of Health and other parties.

The Public Health Institute has also focussed on creating **programme indicators**. These are indicators developed to indicate progress in the fields covered by preventive and public health activities. The Institute seeks to create programme indicators which make it possible to evaluate progress regularly by a constant standard.

Health indicators

Indicator	Status	Measured by	PHI objectives 2010	National Health Plan until 2010
TOBACCO				
Pupils in grade 10 who smoke daily	12%	HBSC, 2006*	< 5%	< 5%
People aged 18-69 who smoke daily	19%	Gallup, 2005	<15%	< 15%
Women who smoke during pregnancy	13%	ASÓ, 2006**	< 7%	Not specified
ALCOHOL/SUBSTANCE ABUSE				
Alcohol litres sold per inhabitant 15 years and over	7.05	Statistics Iceland, 2005	No increase	< 5 litres
Pupils in grade 10 who have drunk 5 or more consecutive alcoholic drinks in the past 30 days	11%	ESPAD, 2003***	< 10%	Not specified
People aged 18-75 who have drunk 5 or more alcoholic drinks on one occasion in the past 12 months	23%	Gallup, 2004	< 20%	Not specified
MENTAL HEALTH				
Suicide rate (per 100,000)	12.2	Statistics Iceland (average 2000-2004)	< 10	25% reduction 1991-1995
Pupils in grades 6, 8 and 10 who are happy or quite happy in school	77%	HBSC, 2006*	80%	Not specified
ACCIDENTS				
Annual fatalities due to external causes, injury or poisoning per 100,000 children to age 17	7.2	Statistics Iceland (average 2000-2004)	< 6	25% reduction 1991-1995
Annual fatalities due to external causes, injury or poisoning per 100,000	40.5	Statistics Iceland (average 2000-2004)	< 33	25% reduction 1991-1995

*HBSC, Health Behaviour in School-aged Children, see www.publichealth.is
**ASÓ: Anna Sigríður Ólafsdóttir, doctoral thesis, University of Iceland
***ESPAD: European School Survey Project 2003, report. See www.publichealth.is

Indicator	Status	Measured by	PHI objectives 2010	National Health Plan until 2010
DENTAL HEALTH				
No. of decayed, missing or filled teeth (D_3MFT) in 12-year-old children	2.1	MUNNÍS, 2005	≤ 1	≤ 1
People aged 65 and older with at least 10 upper and 10 lower teeth	17%	GA, 2000*	> 50%	> 50%
NUTRITION				
Average daily fruit and vegetable consumption, age 15-80	175 g	National Survey 2002	at least 400 g/day	Nutrition Council recommendations
Pupils in grades 6, 8 and 10 who eat fruit daily	23%	HBSC, 2006	> 50%	Nutrition Council recommendations
Pupils in grades 6, 8 and 10 who eat vegetables daily	19%	HBSC, 2006	> 50%	Nutrition Council recommendations
Pupils in grades 6, 8 and 10 who drink sugary soft drinks more than once a week	53%	HBSC, 2006	< 40%	Nutrition Council recommendations
EXERCISE				
Physical activity of people aged 18-79 according to recommendations	Not known	Health and Wellbeing of Icelanders 2007	For consideration when data are available	Not specified
Physical activity of pupils in grades 6, 8 and 10 according to recommendations	20%	HBSC, 2006	> 30%	Not specified
BODY WEIGHT				
9-year-olds who are overweight or obese (BMI** ≥ 19.1)	23%	CCHS, 2004***	< 20%	Not specified
People aged 20 and older who are overweight or obese (BMI ≥ 25)	56%	National Survey 2002	No increase	Not specified
People aged 20 and older who are obese (BMI ≥ 30)	16%	National Survey 2002****	No increase	Not specified

* Data gathered by Guðjón Axelsson 2000, report 2004.
** BMI: Body Mass Index [weight/height^2 (kg/m^2)].
*** CCHS: Centre for Child Health Services, ÍSKRÁ.
**** National Survey of Diet. Public Health Institute/Nutrition Council

Programme indicators

ACTION AGAINST TOBACCO

Smoking has been steadily declining in Iceland in recent years. From 1991 to 2005 the percentage of adults who smoke daily dropped by 35% (from 29.8% to 19.2%),[10] while the number of pupils in grade 10 (aged 16) who smoke daily fell by 43% (from 21% to 12%) from 1995 to 2006[11].

Smokeless tobacco products are used by some males, about 5% of men use oral tobacco, and about 8% take snuff, while there is no evidence that women use these products[12]. Few statistics are available in Iceland on smoking during pregnancy, but a recent survey shows that 13% of women smoke during pregnancy[13].

In 1995, 46% of three-year-old children in Iceland lived in a smoking household[14]. In 2006 a study was conducted of the development of passive smoking in families with children, using the same methods as in the 1995 study. Results showed that 95% of the household were smoke free.

Objectives and approaches

Objective: reduce use of tobacco				
Indicator	Status	Measured by	PHI objectives 2010	National Health Plan until 2010
Pupils in grade 10 who smoke daily	12%	HBSC, 2006*	< 5%	< 5%
People aged 18-69 who smoke daily	19%	Gallup, 2005a	<15%	< 15%
Males aged 16-75 who use oral tobacco	5%	Gallup, 2005b	< 5%	Not specified
Males aged 16-75 who take snuff	8%	Gallup, 2005b	< 5%	Not specified
Women who smoke during pregnancy	13%	ASÓ,2006**	< 7%	Not specified

*HBSC, Health Behaviour in School-aged Children, see www.publichealth.is
**ASÓ: Anna Sigríður Ólafsdóttir, doctoral thesis, University of Iceland

[10] IMG Gallup (2005a). *Umfang reykinga: Samantekt 2005.* [Extent of Smoking: Summary 2005] Reykjavík: IMG Gallup.
[11] University of Akureyri and Public Health Institute (2006). *Heilsa og lifskjör skólanema 2006: Landshlutaskýrsla.* [Health Behaviour in School-aged Children 2006: Regional Report] Akureyri/Reykjavík: University of Akureyri/Public Health Institute
[12] IMG Gallup (2005b). *Notkun tóbaks: Viðhorfsrannsókn júní 2005.* [Use of tobacco: Survey of Attitudes, June 2005] Reykjavík: IMG Gallup.
[13] Anna Sigríður Ólafsdóttir (2006). *Diet and lifestyle of women of childbearing age.* Reykjavík: University of Iceland
[14] Karl E. Lund, Anders Skrondal, Harri Vertio and Ásgeir Helgason (1998). Children's residential exposure to environmental tobacco smoke varies greatly between Nordic countries. *Scandinavian Journal of Social Medicine,* 26(2), 115-120.

Fewer new smokers

• Education in schools

Work is in progress to discourage use of tobacco among young people, both in compulsory education (ages 6-16) and in high school (ages approx. 16-20). Special emphasis is to be placed upon grades 9 and 10, as extensive work is already being carried out with grades 7 and 8 in the **Smoke free Class** programme. Collaboration is under way with school nurses on anti-smoking education in primary/lower-secondary school (ages 6-16). Efforts are also being made to achieve more collaboration with teachers in compulsory school and high school, and with prevention officers. See further on p. 76.

• Smoke free Class

The *Smoke free Class* programme is an annual event, when pupils in grades 7 and 8 are invited to join forces to make their class a non-smoking one. The objective of the programme is to utilise positive peer pressure to encourage pupils to decide to be non-smokers. This is a Europe-wide programme, which receives part of its funding from the European Union.

• Young people's access to tobacco

Efforts are in progress to promote collaboration with monitoring bodies, parents' associations and shop owners, to ensure compliance with legislation on sales of tobacco to young people, and to ensure that under-age youngsters do not sell tobacco. As tobacco companies constantly launch new products to attract new customers, the Public Health Institute seeks to keep up with new developments, and make its contribution, together with stakeholders, to resist the importation of new tobacco products.

• Smokeless tobacco products and young people

A working party of experts has been appointed to examine the use and scope of smokeless tobacco products. Following on from this, the intention is to introduce measures against the use of these products. The focus will be on high-school students and the sports movement.

• Collaboration with parents

The Public Health Institute works with the SAMAN group to encourage and support parents in their parenting, as research indicates clearly that parents play a crucial role in prevention. See further on the SAMAN group on p. 40.

More to give up smoking

• More smoking cessation help and treatment

In collaboration with various agencies, the Public Health Institute will seek to ensure that more treatment and assistance is offered to those who wish to stop smoking. It is important to offer more services, and to ensure that people know what services are available, to enhance health personnel's knowledge of smoking cessation efforts, and to enhance access to support to help smokers give up the habit. In this work the Public Health Institute will seek to

collaborate with healthcare services, professional organisations of health personnel, the quitline *Ráðgjöf í reykbindindi* etc.

• **Interactive website**
An interactive website is being developed, which is to open in May 2007, offering help to those who wish to give up smoking. In due course, the aim is to link it to a computerised quitline service, thus enhancing the service to smokers who want to give up.
The website will be helpful to those of all ages who wish to stop smoking, and also to people working in smoking cessation.

• **Quitline, tel: 800 6030**
The Public Health Institute supports the *Ráðgjöf í reykbindindi* quitline, which is operated by the Þingeyjarsýsla Healthcare Centre. The Institute works closely with the quitline, and makes a contribution to promoting the service whenever the opportunity arises. The Institute collaborates with the quitline service to evaluate the Institute's measures to promote use of the quitline.

• **Young people and help to give up smoking**
It is vital to offer more smoke cessation help to young people. Young people must be reached both in schools and on the labour market.
Collaboration would be possible with the healthcare service, prevention officers in high schools, employers, etc. The interactive website will be utilised in work with young people.

Objective: Reduce second-hand smoking				
Indicator	Status	Measured by	PHI objectives 2010	National Health Plan until 2010
Smokefree environment for all children (Homes of 3-year-old children which are smokefree)	95%	Public Health Institute, 2006	100%	Not specified

A smokefree environment for all

• **Survey of smoking in homes with children**
In the spring of 2006 a second survey was carried out of parents' attitudes to passive smoking, i.e. smoking around children and in their homes. Such a survey was last carried out in Iceland in 1995, by Cancer Societies in the Nordic countries. The findings of the survey will be used in developing future strategies regarding children and passive smokers.

• **Information material for parents and health personnel**
Information material has been prepared for parents, on smoking during pregnancy, the partner's smoking during pregnancy, and on children and passive smoking; these are intended for use in connection with antenatal care and infant health care. The material is being prepared in collaboration with the Antenatal Care Centre, the Centre for Child Health Services, the National University Hospital and the Cancer Society. The material on children and tobacco use will be translated into foreign languages commonly spoken in Iceland.

• **More help for parents to stop smoking**
In the Public Health Institute vision for offering more smoking cessation help, special emphasis is placed upon assisting more parents in giving up. The focus will be on collaboration with the Antenatal Care Centre and antenatal care services within the health-care system.

• **Motivating government and owners/staff of restaurants/bars etc.**
The Public Health Institute intends, together with stakeholders, to facilitate the introduction of smoking ban in restaurants and bars, and to evaluate the effect of the new legislation.

Data collection

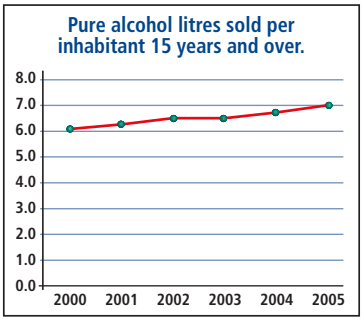
• **Survey of tobacco use by adults**
The Public Health Institute makes an annual study of smoking in Iceland by those aged 15-89 years, by three surveys carried out in January-February, May-June and September-October. Use of smokeless tobacco products is also evaluated regularly. According to the Institute's needs questions are added relating to methods of health promotion and risk groups; these vary from survey to survey. In 2006, for instance, one of the objectives of the survey is to discover what methods may be helpful for those who wish to stop smoking.

• **Other studies of tobacco use**
More extensive surveys, such as *Heilsa og líðan Íslendinga* (Health and Wellbeing of Icelanders) and international studies such as HBSC and ESPAD, all of which are carried out regularly, yield valuable data on tobacco use in the context of other lifestyle factors, living standard, environment and circumstances.

• **Evaluation of effect of legislation on smoking bans at restaurants/bars**
Legislation has been passed by Alþingi (parliament) to ban smoking in restaurants/bars etc. This will take effect on 1 June 2007. The effect of the new legislation is to be evaluated in wide-ranging collaboration with the appropriate agencies, organisations and research bodies. The Institute will seek to collaborate with the Occupational Safety and Health Administration, the Environmental and Food Agency, the Icelandic Travel Industry Association, etc.

MEASURES AGAINST ALCOHOL AND SUBSTANCE ABUSE

Sales of alcohol have risen steadily in recent years, and access to alcohol has increased as more sales outlets have been opened by ÁTVR (The State Alcohol and Tobacco Company of Iceland), along with enhanced service, a wider range of products, and longer opening hours, both at the ÁTVR and at restaurants/bars etc. The price of alcohol has also fallen in real terms, as purchasing power has risen more than prices.



In 2005, 7.05 litres of alcohol (in terms of pure alcohol) were sold per inhabitant aged 15 years and over. This is a long way from the objective stated in the National Health Plan, that sales per head be less than five litres by 2010 [15].

The National Health Plan states the aim that by 2010 alcohol and substance use by underage people will be reduced by 25%. According to the latest statistics from the ESPAD survey in 2003 and the HBSC survey in 2006, the number of pupils in grade 10 (age 15-16) who have been intoxicated in the previous 12 months has dropped by 18.5%, from 54% in 2003 to 44% in 2006. The proportion of pupils of that age who have smoked cannabis at least once has dropped 23%, from 13% in 2003 to 10% in 2006[16,17]. These statistics indicate progress in the right direction, with respect to the National Health Plan targets. Surveys of students in upper-secondary education indicated that use of alcohol and other substances has remained more-or-less stable from 2000 to 2004, with the exception of a small increase in use of stimulant drugs[18]. It should be pointed out that, according to the same surveys, 74.4% of high school students have never tried any of the following substances: cannabis, amphetamines, LSD, ecstasy, cocaine, "magic" mushrooms or inhalants.

[15] Ministry of Health and Social Security (2001). Icelandic National Health Plan to the year 2010.
[16] ESPAD study
[17] University of Akureyri and Public Health Institute (2006). *Heilsa og lífskjör skólanema 2006: Landshlutaskýrsla* [Health Behaviour in School-aged Children 2006: Regional Report]. Akureyri/Reykjavík: University of Akureyri/Public Health Institute.
[18] Rannsóknir og greining (2004). *Rannsókn meðal framhaldsskólanema á Íslandi* [Study of upper-secondary-school students] *2004.*

Objectives and approaches

The National Health Plan until 2010 states various targets in prevention of alcohol and substance abuse, which will involve many different bodies.

Objectives of National Health Plan to 2010			
Indicator	Status	Measured by	National Health Plan until 2010
Annual sales of alcohol not to exceed 5 litres of pure alcohol per inhabitant 15 years and over.	7.05 litres	Statistics Iceland, 2005	< 5.0 litres
Reduce use of alcohol and other substances by underage youngsters. *Pupils in grade 10 who have drunk alcohol 20 or more times in the last 12 months.*	9%	ESPAD 2003	7.5% (25% reduction from 1999)
Reduce use of alcohol and other substances by underage youngsters. *Pupils in grade 10 who have ever tried illegal substances.*	13%	ESPAD, 2003	12% (25% reduction from 1999)

Through its programmes, and allocations from the Public Health Institute Prevention Fund, the Institute makes its contribution to attaining these targets; the Institute has additional targets, which it will monitor and seek to influence through its programmes:

Objective: reduce use of alcohol and other substances			
Indicator	Status	Measured by	PHI objectives 2010
Pupils in grade 10 who have been drunk in the last 12 months	44%	HBSC, 2006*	< 40%
Pupils in grade 10 who have had 5 consecutive drinks 3 or more times in the last 30 days	11%	ESPAD, 2003**	< 10%
Students in high school who have been drunk in the last 30 days	63%	R&G, 2004***	< 56%
Adults aged 18 to 75 who have drunk 5 consecutive alcoholic drinks in the last 12 months	23%	Gallup, 2004	< 20%
Pupils in grade 10 who have ever tried cannabis	13%	ESPAD, 2003	< 13%
Pupils in grade 10 who have ever tried illegal substances other than cannabis	6%	ESPAD, 2003	< 6%
Pupils in grade 10 who have used cannabis in the last 30 days	4%	ESPAD, 2003	< 4%
High-school students who have tried cannabis at least once	23%	R&G, 2004	< 23%
High-school students who have tried amphetamines at least once	10%	R&G, 2004	< 10%
High-school students who have used cannabis at least once in the last 30 days	7%	R&G, 2004	< 6%
Adults aged 18-75 who have tried marijuana or cannabis in the last 12 months	4%	Gallup, 2001	< 4%

*HBSC, Health Behaviour in School-aged Children, see www.publichealth.is
**ESPAD: European School Survey Project on Alcohol and Other Drugs. Report 2004
***R&G: Centre for Social Research and Analysis, report 2004

Alcohol policy

The Public Health Institute will encourage consultation between stakeholders with the aim that alcohol legislation in Iceland should continue to be strict, and that the legislation be reviewed, clarifying some of its provisions, such as those on advertising alcoholic beverages. According to literature review studies, published *inter alia* in *Alcohol – No Ordinary Commodity,*[19] certain measures are more effective than others in reducing harmful use of alcohol. These include: age restrictions on purchase of alcohol, state monopoly on alcohol sales, restricted selling time and days, limited number of sales points, and taxing alcohol. An abridged version of the book has been published in Icelandic[20].

Collaboration with stakeholders

By means of allocations from the Prevention Fund, and its other programmes, the Public Health Institute makes a contribution to attaining the stated objectives. Contributions are made from the Prevention Fund to diverse programmes; see www.lydheilsustod.is/lydheilsustod/forvarnasjodur

- **Prevention Fund**

Each year grants are allocated from the Prevention Fund for programmes and research in the field of alcohol and substance use, which may contribute to future work in the field. The Fund especially solicits applications from large-scale long-term programmes, such as:

- collaborative programmes, e.g. in local communities, parents' collaboration, etc.
- research, especially with respect to the social consequences of alcohol and substance abuse, or the cost to society
- programmes concerned with pupils in primary and/or secondary school
- programmes concerned with young people who are not in schools
- programmes concerned with the social situation of young people of foreign origin
- programmes concerned with organised social and leisure activities for children and youngsters

Programmes vary greatly in nature and scope, but all must be well-defined, with clear objectives and target groups. Importance is attached to the programmes being based upon evidence-based methods.

In the case of large-scale programmes, evaluation of outcome is required.

In addition to its direct contributions from the Fund, the Public Health Institute is involved in a variety of collaboration with bodies working in the field, such as the SAMAN group, prevention officers in high schools, Peer Tutoring, local government, etc.

[19] Babor, T., et al. (2003). *Alcohol – no ordinary commodity.* Oxford: University Press.
[20] www.publichealth.is

Support for local government

• **Be prepared**

Vertu til (Be prepared) follows on from the programme *Drug-free Iceland*. It is a collaborative programme of many bodies, which has been in progress since 2003. The *Drug-free Iceland* programme was a collaborative programme of many bodies, including national and local government. Lasting from 1997 to 2002, the programme had the principal aim of uniting the nation against illegal substances, and strengthening preventive work. In the *Be prepared* programme, policy on prevention has been in formation, based on collaboration between local government, the police, healthcare, church etc. The intention is to continue the programme, perhaps as part of the programme *Allt hefur áhrif – einkum við sjálf!* (Everything affects us – especially ourselves!): see p.72.

Responsibility – In Everyone's Interest

An important facet of preventive work aimed at young people aged 18-25 (as well as older adults) is to address the threats posed by nightlife and social life. These are no longer confined to the effects of alcohol consumption; use of illegal substances plays a growing role.

The programme *Ábyrgð – öllum í hag* (Responsibility – In Everyone's Interest) is intended to promote responsibility, collaboration, debate and coordination of many different bodies. The aim of the programme is to prevent or reduce the occurrence of injuries and violence on licensed premises due to consumption of alcohol and other substances, and to restrict sales of alcohol to those who are already intoxicated or underage. The programme also has the objective of enhancing staff's ability and skills in preventing violence, and dealing appropriately with incidents.

The programme is a collaborative undertaking of the Public Health Institute, businesses licensed to serve alcohol, and many more. The programme is due to commence in 2007, but was tested out in the communities of Reykjanesbær and Akureyri in the winter of 2006/7. The effectiveness of the programme will be evaluated, *inter alia* by ascertaining whether licensed businesses have reduced their sales of alcohol to under-age or intoxicated customers. An assessment of the current situation will be made at the commencement of the programme.

Education

The Public Health Institute operates education programmes on the harmful effects of alcohol consumption for young people and adults. Two information booklets have been published on the effects of alcohol consumption, one for young people, the other for adults.
At times when alcohol consumption is known to be high, e.g. in summer, and at Christmas and the New Year, the Institute campaigns in the press, encouraging Icelanders to change their patterns of alcohol consumption, which are typified by binge drinking, generally at weekends. Educational material has also been published on the effects of substance abuse: *Höldum heilanum heilum* (Keep the Brain Safe).

• **Entering upper-secondary education**
Research, including studies on the circumstances of students in upper-secondary education carried out in 2004, indicates that the summer after completion of compulsory schooling (at age 16) is often a difficult time for youngsters with respect to alcohol consumption.
At the end of the school year in April, the proportion of pupils who have been intoxicated at least once in the previous 30 days is 26%. When the same year-class is surveyed again in high school, in October the same year, 53.4% have been intoxicated at least once in the previous 30 days. The summer between compulsory education and high school is thus a risky time. The Public Health Institute plans to organise a variety of collaborative programmes focussing on this target group, e.g. working with local government, Peer Tutoring and prevention officers in high schools.

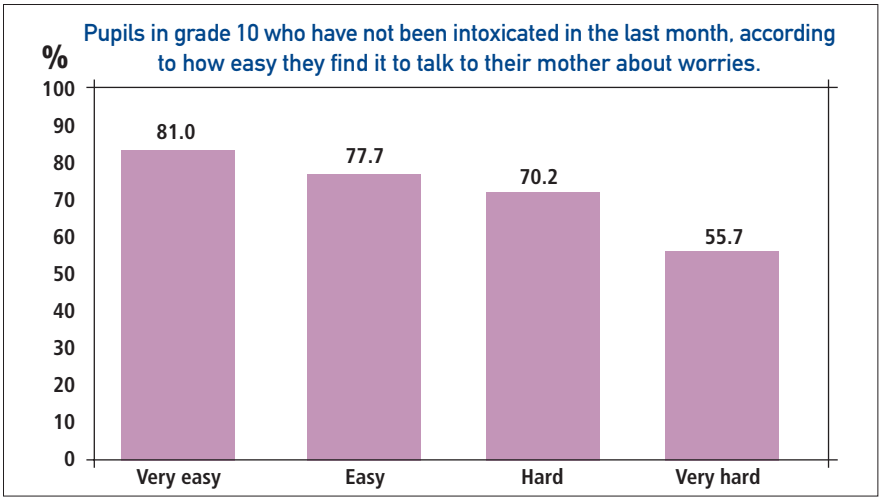
• **Education in school**
The Public Health Institute's programme of education in schools is an important tool for achieving results in prevention of alcohol and substance abuse (see p. 75).

Data collection

• **Effects of alcohol policy**
An analysis of Iceland's alcohol policy is in progress, which will evaluate the potential impact of proposed amendments to alcohol policy on the damage wrought by alcohol in society. The analysis is based upon statistical data on alcohol and the consequences of alcohol consumption in terms of health, crime, accidents etc. A report on the subject is due to be published in 2007.
Further study of illegal use of prescription medications, steroids and inhalants is also planned.

SAMAN group

The SAMAN group (*saman* = together) is a collaborative group working in prevention, with the backing of the Public Health Institute. All Iceland's largest communities are now members of the group, as are the leading non-government organisations involved in the welfare of children and young people. The SAMAN group works on prevention, focussing on the family, in relation to events which are likely to lead to increased alcohol and substance abuse by young people, such as the spring when 16-year-olds graduate from compulsory education, National Day on 17 June, the August Bank Holiday weekend, and the New Year.



The SAMAN group focuses on the vital role of parents, and on the family spending time together. Children who have a good relationship with their parents feel, for instance, that they can discuss their worries with them; and children whose parents are familiar with their lives, and know e.g. where they are and with whom in the evenings, are less likely than other children to use alcohol or other substances.[21] While the SAMAN group primarily emphasises the importance of the family in prevention of alcohol and substance abuse, the group's messages also apply in a broader context: research has shown that good parent-child relationships are also influential in other areas, e.g. wellbeing in school and study performance.[22]

The SAMAN group receives funding from local government, and from funds which focus on preventive action. All such funding is used for educational work and for advertisements, which are made available free of charge to local government and non-government organisations.

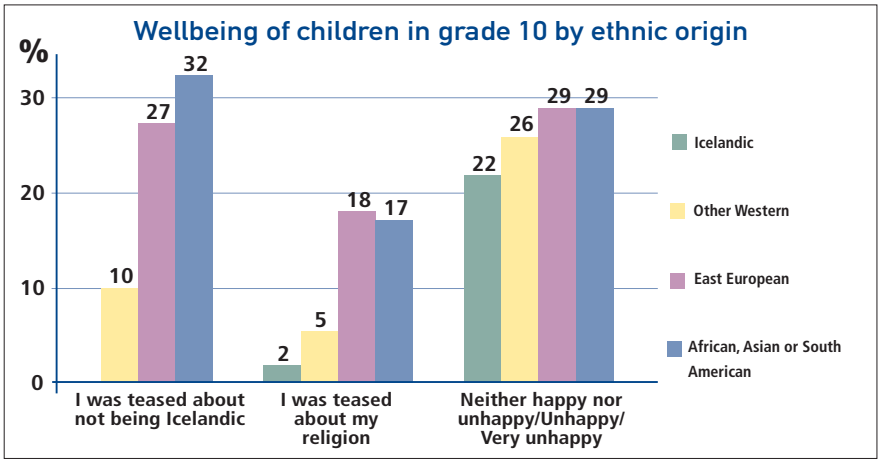
[21] University of Akureyri and Public Health Institute (2006). *Heilsa og lífskjör skólanema 2006: Landshlutaskýrsla* [Health Behaviour in School-aged Children 2006: Regional Report]. Akureyri/Reykjavík: University of Akureyri/Public Health Institute.
[22] Rannsóknir og greining (2002). *Börnin í borginni* [Children in the City]. Reykjavík. Rannsóknir og greining ehf.

MENTAL HEALTH PROMOTION

Geðrækt (Mental Health Promotion) is a preventive/educational programme on mental health, and the major factors which influence it. The programme aims to promote improved mental health in Iceland, to improve preventive work and education on mental illness and health, and to counteract prejudices against those who suffer from mental illness or disease.

Mental illness is among the commonest and most difficult health problems of many nations[23]. In Iceland, 22% of the population are estimated to experience mental illness during their lives[24]. Hence few families can expect to avoid having to deal with the symptoms and suffering entailed by mental illness. Every month, an average of three to four Icelanders commit suicide[25], and the use of antidepressants has increased considerably[26]. An estimated 2-5% of children suffer from serious behavioural or mental disorders,[27] and this is a source of concern.

The measures of the Public Health Institute focus on the importance of good mental health in people's overall state of health, and on what people can do themselves which is conducive to mental health. An important aspect of this is collaboration between the Public Health Institute and various stakeholder groups in the field of mental health; account is taken of their campaigning issues in the Institute's policy formation and work. On World Mental Health Day on October 10 each year, special emphasis is placed upon such collaboration.



23 World Health Organization (2005). Mental health: facing the challenges, building solutions: report from the WHO European Ministerial Conference.

24 Ministry of Health and Social Security (2001). Icelandic National Health Plan to 2010.

25 Þjóð gegn þunglyndi [Nation Against Depression]. Downloaded 15.5.06 from: http://www.landlaeknir.is/template1.asp?PageID=756

26 Tómas Helgason, Helgi Tómasson and Tómas Zoëga (2004). Antidepressants and public health in Iceland. *British Journal of Psychiatry*, 184,157-162.

27 Ministry of Health and Social Security (2004). *Samhæfing í málefnum barna og unglinga með geðraskanir* [Coordination in matters of children and adolescents with mental illness]. Reykjavík: Ministry of Health and Social Security.

Objectives and approaches

The Public Health Plan until 2010 sets out various objectives in mental health, which require collaboration by many bodies.

Objectives: National Health Plan to 2010			
Indicator	Status	Measured by	National Health Plan until 2010
Incidence of mental illness	21%	Ministry of Health 2001	10% reduction
Annual suicide rate per 100,000	12.2	Statistics Iceland (average 2000-2004)	25% reduction 1991-1995 (8.1)

The Public Health Institute makes its contribution to attaining these objectives through its programmes. In addition the Institute has stated its own objectives, which it will monitor and seek to influence through its programmes:

Objective: enhance mental health and consciousness in Iceland			
Indicator	Status	Measured by	PHI objectives 2010
Pupils in grade 10 who regard their health as good or excellent	79%	HBSC, 2006*	> 80%
Pupils in grade 6 who are happy or quite happy in school	78%	HBSC, 2006	> 78%
Pupils in grade 6 who are bullied twice or more per month	6.7%	HBSC, 2006	< 5%
Knowledge of the *Ten Commandments of Mental Health* among those aged 16-75 (*Have you heard of the Ten Commandments of Mental Health?*)	24%	Gallup, 2005	50%
No. of schools teaching *Zippy's Friends* for 6- to 7-year-olds.	11	Public Health Institute, 2006	60

* HBSC, Health Behaviour in School-aged Children, see www.lydheilsustod.is

Policy formation

It is an important step for mental health in Iceland that a public policy, and action plan, be in place with regard to prevention in the mental health arena (see declaration and action plan approved in January 2005 by a WHO European Ministerial Conference in Helsinki)[28].

In policy formation in the field, there is a growing need for a consistent information system and access to data that meet standards for quality and reliability. An example of such a measurement tool is interRAI assessment system[29] the National University Hospital has been working on adapting the RAI assessment systems in psychiatric and geriatric wards[30].

Enhance mental health and counteract prejudice

• Ten Commandments of Mental Health and the Mental Aid Box

In its mental health work the Public Health Institute uses *Geðorðin 10* (Ten Commandments of Mental Health) and *Geðræktarkassinn* (Mental Aid Box). Messages and educational material on mental health have been sent to homes, schools, workplaces, old people's homes etc. Staff of preschools and schools and parents' associations have been offered special educational material on the subject. The Institute also works in collaboration with healthcare facilities, hospitals, etc. to familiarise staff with the *Ten Commandments* and the *Mental Aid Box*, so that they can make better use of this material for their own benefit and that of their clients.

• Children's mental health – *Zippy's Friends*

The mental and physical health of children and youngsters paves the way for their welfare in life. Hence it is important that all preventive work take account of this interaction[31, 32]. Children need to learn to know and master the correct methods to deal with problems they face, to be able to say how they are feeling and, not least, to be able to show empathy and support for other children where appropriate. The Public Health Institute works to achieve this, *inter alia* by providing study material on the subject, *Zippy's Friends*, to primary schools.

[28] WHO Europe (2005). Mental health action plan for Europe: Facing the challenges, building solutions. Helsinki: WHO Europe.
[29] Interrai. Downloaded 15.5.06 from: http://www.interrai.org.
[30] Guðrún Guðmundsdóttir, (2006). Gegnsærri geðheilbrigðisþjónusta. Þróun RAI-MH mælitækisins á Landspítala-háskólasjúkrahúsi. [More transparent mental health care. Development of the RAI-MH measurement tool at the National University Hospital] *Tímarit hjúkrunarfræðinga*, 82, 42-45.
[31] World Health Organization (2005). *Child and Adolescent Mental Health Policies and Plans*. Geneva: WHO
[32] Jané-Llopis, E., and Anderson, P. (2005). *Mental Health Promotion and Mental Disorder Prevention. A policy for Europe*. Nijmegen: Radboud University Mijmegen.

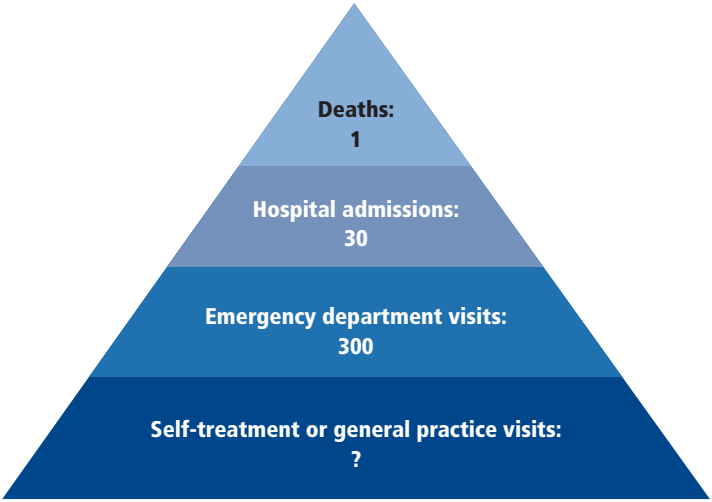
Zippy's Friends is an international life skills study package which aims to enhance the mental health of children aged 6-7. It has been used successfully around the world[33]. The material is prepared and distributed by a British charity, *Partnership for Children*[34]. The idea of *Zippy's Friends* is very simple: if children are taught at an early age how to cope with their problems, they will be better prepared to deal with problems and adversities as teenagers and adults[35]. The children are taught to resolve problems they meet in their daily life, to identify and speak about their feelings, and to explore methods of dealing with feelings. The study material is also prepared with the aim of encouraging children to help others who have problems.

The effectiveness of the programme is to be evaluated by an appropriate research institute in collaboration with the Public Health Institute.

33 Mishara, B.L., and Ystgaard, M. (2006). Effectiveness of a mental health promotion program to improve coping skills in young children: Zippy's Friends. Early Childhood Research Quarterly, 21, 110-123.
34 Partnership for Children. Downloaded 15.5.06 from: http://www.partnershipforchildren.org.
35 Lazarus, R.S., and Folkman, S. (1984). *Stress, Appraisal and Coping*. New York: Springer.

ACCIDENT PREVENTION

In 2004 over 100 people died in Iceland due to external factors, injuries or poisoning[36]. Deaths due to injury are only part of a larger picture, as there are believed to be about 30 cases of injury or poisoning requiring admission to hospital, while another 300 attend hospital emergency departments, and yet others have to deal with the consequences of accidents, or



Source: Clinical Pyramid for Injuries, WHO Europe, 2000

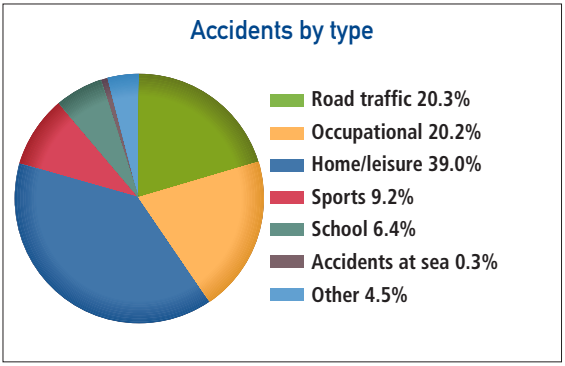
seek professional help at healthcare centres or from their own physician[37]. These indications, together with the number of accidents recorded in Iceland, lead to the conclusion that about 3,000 people are admitted to hospital due to accidents, and 30,000 seek help from emergency departments or other emergency care. Little is known of the numbers who, in addition to this, deal themselves with the consequences of accidents or seek other help.

An accident register, maintained by the Directorate of Health, was established in 2001, and the first formal statistics from the register of accidents were published in 2002. Accidents are an issue which involves many groups in society, and hence the register of accidents is based upon inter-disciplinary collaboration, and contributions by many bodies to the registration. More bodies are constantly being added to those who register accidents, and the objective is to achieve consistent accident registration for the entire country. In 2005 a total of 31,737 accidents were recorded in the register:[38] the majority were road traffic accidents, occupational accidents, and home/leisure accidents.

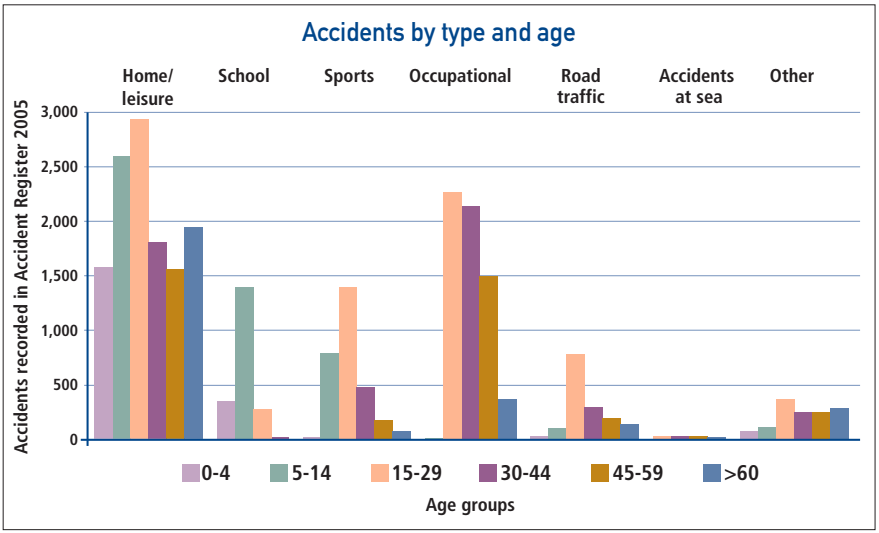
[36] www.hagstofan.is. Downloaded 20.7.06 from: http://www.hagstofan.is/?pageid=627&src=/temp/mannfjoldi/faeddir.asp

[37] Sethi, D., Racioppi, F., Baumgarten, I., and Vida, P. (2006). *Injuries and violence in Europe: why they matter and what can be done.* Denmark: WHO Europe.

[38] Statistics from 2005 register of accidents. Downloaded 24. 7.06 from: http://www.landlaeknir.is/template1.asp?PageID=1098.



If the type of accident, and the age of the person injured, are examined, it transpires that home/leisure accidents are the commonest accidents in all age groups except the group aged 30-44, for which accidents at work are the commonest. Preventive measures are under the aegis of a number of bodies: the Occupational Safety and Health Administration is responsible for preventive measures in the field of occupational accidents, and the Road Traffic Directorate in the field of road traffic accidents. The Public Health Institute will, in addition to collaboration with these bodies and others, pursue preventive efforts with respect to home and leisure accidents, accidents in school and sporting accidents.



Source: Accidents recorded 2005 on Accident Register. In addition, 67 occupational accidents are recorded where age is not specified. The age groups are of variable size: the classification is the same as is used by the WHO.

Objectives and approaches

The objective of the National Health Plan in the field of accident prevention is to reduce the number of accidents and accidental deaths by 25% in the period 2001-2010, to reduce accidents to children and accidental deaths of children by 25%, and to reduce the incidence of hip and spinal fractures by 25%.

Objective: Fewer accidents in Iceland				
Indicator	Status	Measured by	PHI Objectives 2010	National Health Plan to 2010
Annual fatalities due to external causes, injury or poisoning per 100,000 population	40.5	Statistics Iceland (average 2000-2004)	< 33	25% reduction 1991-1995 (33)
Annual fatalities due to external causes, injury or poisoning per 100,000, 17 and younger	7.2	Statistics Iceland (average 2000-2004)	< 6	25% reduction 1991-1995 (9.5)
Annual recorded home/leisure accidents per 100,000	4.132	Accident Register* 2005	25% reduction	25% reduction
Annual sporting accidents to those 19 and younger, per 100,000	2.916	Accident Register 2005	25% reduction	25% reduction
Annual accidents at school to those 19 and younger, per 100,000	2.281	Accident Register 2005	25% reduction	25% reduction
Accidental injuries to those 65 and older, per 100,000	629	Report on accidents to the elderly 2003	25% reduction	25% reduction
Hip/spinal fractures to those 65 and older, per 100,000	44	Report on accidents to the elderly 2003	25% reduction	25% reduction
Pupils in grades 6, 8 and 10 who have been injured once or more in the past 12 months and consulted a physician or nurse	52.9%	HBSC, 2006	< 52%	Not applicable

* The number of bodies which register accidents on the Accident Register is constantly increasing. Thus comparisons between years must take account of increased registration.

Data-gathering and processing

The aim is to improve the registration of accidents and processing of data from the register, in collaboration with the Accident Prevention Board, Directorate of Health etc., in order that further, specialised data may be extracted from the register. The aim is to consider in more detail the seriousness and category of the following types of accident:

- home and leisure accidents
- sporting accidents
- accidents in school
- accidents to the elderly

Safe Community

Safe Community is a programme connected with the World Health Organisation. The Public Health Institute plans to become involved in the programme, in collaboration with interested local governments, and in due course to adapt it to Icelandic conditions.

Safety rules for preschools and primary schools

The Public Heath Institute, in collaboration with the Environmental and Health Agency and others, plans to publish guidelines on children's safety in preschool and primary school, together with fuller information for school management on measures to improve safety and reduce the risk of accidents.

Safety rules and standards

The Public Health Institute is a participant in committee work for the Ministry of Education on the creation of safety rules for sports structures.

Education of parents of infants

The Public Health Institute has, in collaboration with the Antenatal Care Centre, the National University Hospital and healthcare centres, prepared educational material for parents and healthcare staff, on ensuring the safety of young children in the home. Parents receive copies of the literature at baby health checks.

Education in School

The Public Health Institute is working to improve education on accidents and injuries within the schools community. This education effort is combined with other Public Health Institute programmes, such as *Education in School* (see p. 75).
Courses will be held, for instance, for school nurses, and parents of schoolchildren will receive educational literature on accident prevention.

Collaboration

In order to promote still further work which aims to enhance the safety of children in any way, collaboration with the Consumers' Spokesman and Children's Ombudsman will be increased. More collaboration is foreseen with the sports movement, on accident prevention in sports for all age groups. The Public Health Institute collaborates with many other bodies on accident prevention, such as the Icelandic Association of Search and Rescue, the Directorate of Health, the Occupational Safety and Health Administration and the Road Traffic Directorate.

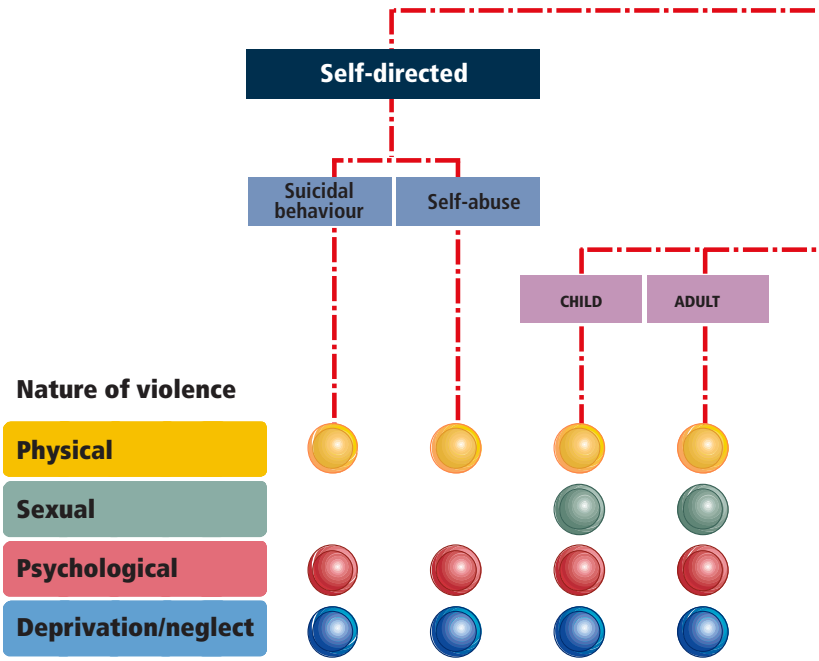
Prevention of accidents to the elderly

A possible method of reducing the number of accidents suffered by the elderly is to encourage them to take more exercise and thus enhance their physical fitness. The Public Health Institute will seek to encourage more elderly people to exercise, and will work in close collaboration with the Ministry of Health, the Association of Senior Citizens, the healthcare system and the sports movement. Together with this, and taking account of the high incidence of accidents to the elderly, emphasis will be placed upon accident prevention for the elderly. *Healthy Ageing* is a collaborative programme in several countries, backed by the European Union. Iceland is not formally a participant in the programme, but the Public Health Institute has affiliated itself to the programme, so that the results may be applied in Iceland.

Violence

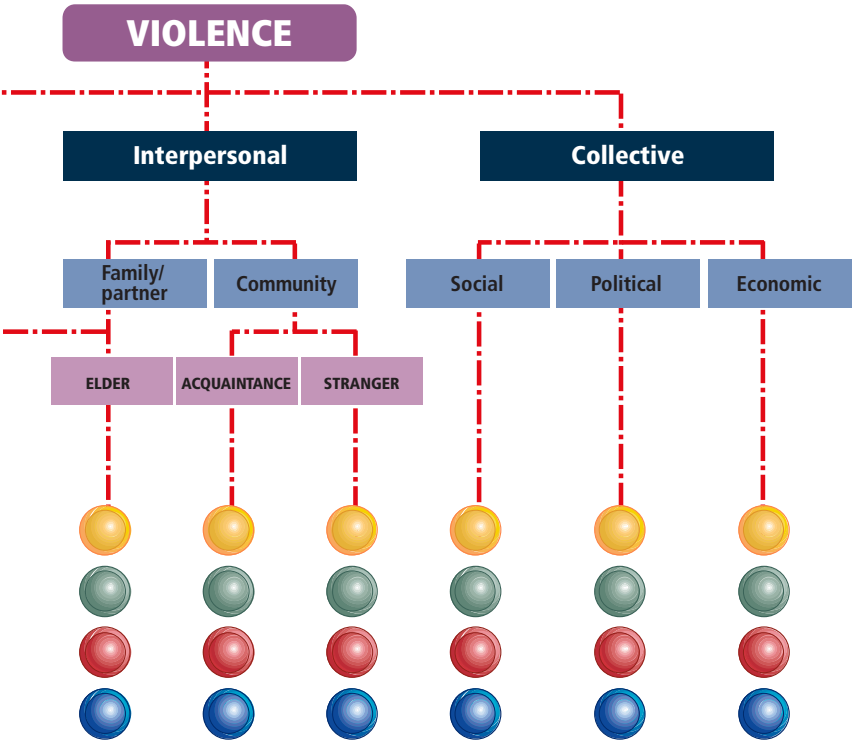
Violence has diverse causes and consequences, but is generally classified in three categories[39]: self-directed, interpersonal and collective violence. Violence also manifests itself in various forms: the World Health Organisation has defined a typology of violence in four classes: physical, sexual and psychological violence, and deprivation/neglect.
The WHO report contains a diagram of the typology of violence (see below).

It is important that preventive measures against violence be effective and coordinated. By means of organised preventive work, and greater awareness, it is possible to prevent violence and reduce its extent, just as the incidence of accidents can be reduced. The Public Health Institute will exert itself for preventive measures against violence to be given more priority in society.



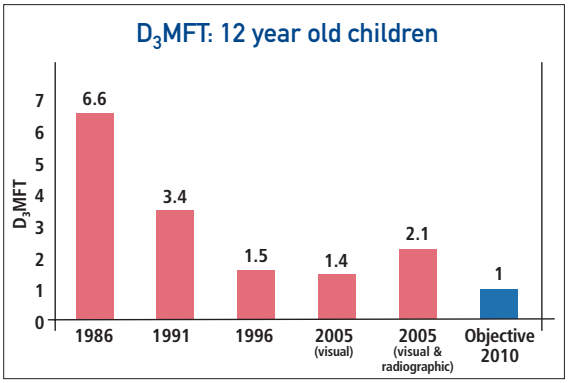
[39] Sethi, D., Racioppi, F., Baumgarten, I., og Vida, P. (2006). *Injuries and violence in Europe: why they matter and what can be done.* Copenhagen: WHO Regional Office for Europe.

The programme *Ábyrgð – öllum í hag* (Responsibility – in Everyone's Interest) is intended to promote responsibility, collaboration and debate, and coordinate efforts by many parties. The objective of the programme is to prevent or reduce the incidence of incidents relating to violence and abuse of alcohol on licensed premises, and to reduce the serving of alcohol to those who are already intoxicated, or under age. The programme also has the aim of enhancing the ability and skills of staff to prevent violence, and to handle incidents of violence appropriately. (See further on p. 38)



Source: Krug. E., et al. (http://whqlibdoc.who.int/hq/2002/9241545615.pdf)

DENTAL HEALTH



The incidence of dental decay in Icelandic children and youngsters declined very rapidly in the period 1986-1996, while this positive trend has slowed considerably in the past decade[40]. Today Icelanders may have a realistic expectation of retaining their own teeth through their lives. According to the objectives of the National Health Plan to 2010, the aim is that 12-year-old children have an average of not more than one decayed, filled or missing adult tooth (DMFT ≤1.0). In 2005 clear signs suggest that the positive trend from the 1986-96 period has reversed. In the Icelandic Oral Health Study (Munnís) in 2005 both visual and radiographic detection of caries were used. The D_3MFT value for the visual examination is 1.4 but with additional information from radiographic examination the value rises to 2.1. Given the present status, measures are required in order for the objective to be achieved. The incidence of enamel erosion is increasing: 15% of 12-year-old children and 30% of 15-year-olds have enamel erosion in at least one tooth[41].

General dentistry is performed exclusively by dentists in private practice, while certain social groups receive subsidised dental care, with variable contributions from public funds.
Over one-third of children and youngsters (aged 3 to 18) who have social security coverage and are resident in Iceland do not attend regular annual dental checks with a dentist[42].

The Public Health Institute's measures on dental health for the period until 2010 aim to promote awareness of dental health, and enhance dental health, in Iceland. Special emphasis is placed upon dental health of children and youngsters, and other special groups, in collaboration with educational and health authorities.

[40] Public Health Institute (2006). *Munnís – Rannsókn á munnheilsu Íslendinga* [The Icelandic Oral Health Study]- report in preparation.
[41] Public Health Institute (2006). *Munnís – Rannsókn á munnheilsu Íslendinga* [The Icelandic Oral Health Study]- report in preparation.
[42] Parliamentary document 1177 in case 545 – children's visits to dentists. Downloaded 6.6.06 from: www.althingi.is.

Objectives and approaches

Objective: reduce incidence of dental decay and enamel erosion				
Indicator	Status	Measured by	PHI objectives 2010	National Health Plan to 2010
Incidence of tooth decay (D_3MFT* age 12)	2.1	MUNNÍS, 2005	≤ 1	≤ 1
Enamel erosion in at least one tooth at age 15	30%	MUNNÍS, 2005	≤ 25%	Not specified

* D_3MFT: Decayed, Missing, Filled Teeth

Access to dental health services

The Public Health Institute will, in collaboration with the Ministry of Health, the Directorate of Health, the Dental Association, Healthcare system and other relevant parties, seek means of improving access to dental care, regardless of economic and social status. Emphasis is placed upon regular monitoring by dentists, and upon children going to the dentist for the first time before the age of three years.

- **Enhanced knowledge of dental protection**

The Public Health Institute is in professional collaboration with educational and health professions on promulgating knowledge of dental protection to pupils/students at all educational levels: preschool, primary and secondary school, and university level. Emphasis is also placed upon parents receiving educational literature, e.g. in collaboration with school healthcare services (see the Six Hs of Health, p.76).

- **Annual Dental Health Week**

The Public Health Institute organises a Dental Health Week in the first week of February each year. The institute works with the relevant stakeholders.

- **Water – the most refreshing drink**

Good access should be provided to fresh drinking water, in as many places as possible. Lower prices for bottled water could encourage more consumption of water, instead of sugary drinks.

Dental health – special groups

Elderly people in Iceland now increasingly have their own teeth[43]. In 2000, 17% of Icelanders aged 65 and older had at least ten upper and ten lower teeth[44]. The objective of the National Health Plan is that this proportion rise to 50% by 2010.

Objective: Enhance consciousness of dental health and improve dental health in Iceland				
Indicator	Status	Measured by	PHI objectives 2010	National Health Plan until 2010
People aged 65 and older with at least 10 upper and 10 lower teeth	17%	GA 2000*	50%	50%
Oral and dental health of special groups (disabled/ill/aged)	Not known	MUNNÍS**	No data available	

* Data collected by Guðjón Axelsson 2000, report 2004.
** Phase 5 of the MUNNÍS study aims to gather information on these matters.

• Dental health care as part of holistic services to special groups

It is important that the Public Health Institute, together with the Ministry of Health, Directorate of Health, Dental Association, healthcare services and other relevant bodies, seek means to deal with dental health problems of special groups, placing special emphasis on access and care.

• Increased weight of dental protection in care and health services

It is necessary for health personnel other than dentists and dental technicians to have the knowledge and skills to assist special groups with regard to difficulties in cleaning teeth and dentures. The Public Health Institute is working with the Centre for Oral Health to prepare educational material for health personnel on oral care and dental protection.

[43] Axelsson, G., and Helgadóttir, S. (2004). Breytingar á tannheilsu Íslendinga 1985-2000. Fjórði áfangi: Tannheilsa 65 ára og eldri Íslendinga árið 2000. [Changes in dental health of Icelanders 1985-2000. Phase 4: Dental health of Icelanders 65 and older in 2000] Reykjavík: Háskólaútgáfan.
[44] Axelsson, G., and Helgadóttir, S. (2004). Breytingar á tannheilsu Íslendinga 1985-2000. Fjórði áfangi: Tannheilsa 65 ára og eldri Íslendinga árið 2000. [Changes in dental health of Icelanders 1985-2000. Phase 4: Dental health of Icelanders 65 and older in 2000] Reykjavík: Háskólaútgáfan.

Data collection

• Research on oral health in Iceland – MUNNÍS

A plan for research on the oral health of Icelanders has been made, on the initiative of the Ministry of Health and Social Security. This will be a research programme in five stages: the objective of the first stage is to gather information on the oral health of Icelandic children and teenagers (aged 6, 12 and 15). The objective of stages two to four is to gather information on the oral health of people aged 18-85 years, while the final stage aims to gather information on the oral health of special groups, such as those who are disabled, ill, or very old. The *Munnís* programme is to be carried out by the Public Health Institute and the Centre for Oral Health, while the Ministry of Health and the University of Iceland participate in the project.

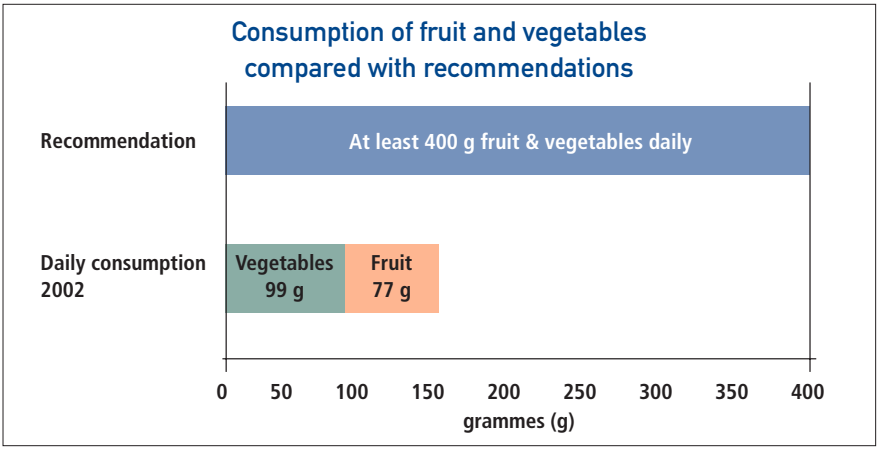
• Other studies of oral health in Iceland

In general health studies carried out by the Public Health Institute, such as *Heilsa og líðan Íslendinga* (Health and Wellbeing of Icelanders) and HBSC, dental health will be among the health factors assessed.

NUTRITION

The Icelandic diet has changed considerably in recent years[45]. An example of the trend to healthier foods is that consumption of fruit and vegetables has increased a good deal, and consumption of saturated fats has dropped. This is a factor in lower blood cholesterol, and redoing the risk of cardiovascular disease, Consumption of soft drinks has, on the other hand, risen, especially among boys. The diet of the vast majority of people contains all the necessary vitamins, with the exception of vitamin D, which occurs in few common foods. People are thus encouraged to take cod-liver oil or another source of vitamin D.

Consumption of folic acid, calcium, iron, iodine and vitamin E is also below recommended dosages for certain groups. But the crucial issue with regard to nutrition which threatens the health of Icelanders at present is concerned with excessive consumption and obesity.



[45] Public Health Institute (2003). *Landskönnun á mataræði 2002*. Reykjavík: Lýðheilsustöð.

While consumption of fruit and vegetables has increased, it is still low vis-à-vis recommended amount, i.e. five servings of fruit/vegetables/juice per day for adults, including at least 200g of vegetables and 200g of fruit, not counting potatoes. Surveys indicate that about half the population eat fruit once or more a day, and a similar proportion eat vegetables once or more a day.
While overall fat consumption has been reduced, so that it is close to recommended levels, saturated fats still account for about 16% of energy consumed, while the recommended level is not more than 10%. About 18% of the energy consumed by youngsters aged 15-19 derives from added sugar, while the recommended level is not more than 10%. Young people's fish consumption is minimal, or rather less than one meal a week, while it is recommended that fish be eaten as a main meal at least twice a week. Salt consumption is too high, or 7g for women and 10g for men, while it is recommended that they should not consume more than 6g and 7g respectively.

Many diverse factors affect people's diet and its healthiness, e.g. availability of food in schools and at workplaces, price, education, knowledge and marketing of food. If the intention is to promote healthier diet, so that the healthy choice becomes the easy choice, it is important to take account of the principal determinants, and ensure the best possible participation in the effort. In this context it is important to prepare an overall action plan in accord with the resolutions of the World Health Organisation[46 47].

The main objectives of the nutrition department within the Public Health Institute are to influence the nation's food habits towards a healthier way, i.e. closer to the national recommendations on diet and intake of nutrients. Special emphasis is laid on increasing vegetable, fruit and fish consumption, and on decreasing intake of salt and saturated fat. These measures are to be achieved by increasing education in nutrition and by making access to healthy foods easier, and thereby making healthy choices easier. The Public Health Institute of Iceland carries out national food surveys and data are gathered on consumption and sales of food.

46 WHO (2004). *Global Strategy on diet, physical activity and health.* Geneva: WHO.
47 WHO (2000). *Development of the first food and nutrition action plan for the WHO European region.* Copenhagen: WHO Regional Office for Europe.

Objectives and approaches

Objective: Icelandic diet to progress closer to recommendations				
Indicator	Status	Measured by	PHI objectives 2010	National Health Plan to 2010
Fruit/vegetable consumption, age 15-80 (average)	175g	National Survey, 2002**	at least 400 g/day	Recommendations
Fruit/vegetable consumption age 9 and 15 (average)	130g	UNR, 2003 2004***	at least 400 g/day	Recommendations
Fish as main meal, age 15-19 (average)	< Once a week	National Survey, 2002	at least twice a week	Not specified
Fish as main meal, age 9 and 15 (average)	1.5 times a week	UNR, 2003-04	at least twice a week	Not specified
Added sugar as proportion of total energy consumption, age 15-19	18%	National Survey, 2002	< 10%	Not specified
Added sugar as proportion of total energy consumption, age 9 and 15	15%	UNR, 2003-04	< 10%	Not specified
Saturated fats as proportion of total energy consumption, age 15-80	16%	National Survey, 2002	< 10%	Not specified
Saturated fats as proportion of total energy consumption, age 9 and 15	15%	UNR, 2003-04	< 10%	Not specified
Salt consumption, women aged 15-80	7g	National Survey, 2002	6g	Not specified
Salt consumption, men aged 15-80	10g	National Survey, 2002	7g	Not specified
Proportion of those aged 15-80 who receive ≥RDD**** of vitamin D from their food	22%	National Survey, 2002	RDD	Not specified
Proportion of 15-year-olds who receive ≥RDD**** of vitamin D from their food	5%	UNR, 2003-04	RDD	Not specified
Proportion of 9-year-olds who receive ≥RDD**** of vitamin D from their food	20%	UNR, 2003-04	RDD	Not specified

* Recommendations on diet and nutrition are prepared by the Nutrition Council and the Public Health Institute
** National Survey of Diet. Public Health Institute/Nutrition Council
*** UNR. Survey of diet of children aged 9 and 15, 2003-2004. Unit for Nutrition Research, University of Iceland/National University Hospital 2006
****RDD: recommended daily dosage

Enhanced knowledge of nutrition

By publication of educational material, the Public Health Institute seeks to pass knowledge of healthy diet on to students at all educational levels. This includes, for instance, the *Food Circle*, and encouragement to eat fruit and vegetables: five portions per day. Education material is also prepared for children and their parents, in connection with school healthcare (see the Six Hs of Health, p.76).

In connection with the programme *Allt hefur áhrif – einkum við sjálf!* (Everything affects us – especially ourselves! see p. 72), school staff and parents are e.g. offered lectures on healthy diet.

The Public Health Institute finds it important that teachers, and others who work with children and youngsters, have well-grounded knowledge of nutrition. Hence the Institute wishes to encourage the inclusion of nutrition in teacher training. By the same token, it is important to enhance general knowledge of nutrition in the health professions, and the Public Health Institute will make its contribution.

By means of publishing and distributing educational material the Public Health Institute disseminates knowledge to various groups in society, either on its own or in collaboration with others, e.g. the healthcare system and the Environmental and Food Agency. Examples of information booklets are *Tekið í taumana* (Getting a Grip), *Ef kólesterólið mælist of hátt* (If your cholesterol is too high), *Mataræði á meðgöngu* (Diet during Pregnancy) and *Næring ungbarna* (Nutrition for Infants).

Improved access to healthy food and drink

• School meals

It is important that all children should have access to healthy food in school. With this in mind, the Institute has published handbooks for kitchens in preschool and primary/lower-secondary school (age 6-16), with guidance on composition and healthiness of foods, making up menus, purchasing, hygiene etc. As part of the programme *Allt hefur áhrif – einkum við sjálf!* (Everything affects us – especially ourselves! see p.72), staff of school kitchens and school management are offered a course, in which the handbook is used as a teaching aid. Rules on the quality, healthiness and serving of school meals are conducive to equality, and serve to ensure the quality of the food offered. The Public Health Institute seeks to inform government and stakeholders on the importance of these factors.

• Workplace canteens

It is important that working people have access to healthy food in the workplace, including fruit and vegetables. The Public Health Institute will urge employers to improve the range of healthy food and access to it, using educational material of various kinds. The Institute plans to prepare a handbook for canteens on healthy food in the workplace.

• **Senior citizens**
Senior citizens must be offered healthy foods, either at institutions, or sent to them at home. The Public Health Institute wishes, in collaboration with the appropriate bodies, to promote provision of such services, through advice and education. Special attention must be given to preventing malnutrition in this group; there is a considerable risk that elderly people who are unable to prepare their own food will have an inadequate and monotonous diet.

• **Drinking water**
In order to encourage more drinking of water instead of sugary drinks, it is important that fresh drinking water be readily accessible in schools, workplaces and elsewhere (see Dental Health, p. 52).

• **Availability of healthy foods**
Emphasis will be placed upon collaboration with the food industry, in order to promote better availability of healthy foods. Collaboration with the Federation of Industry would also be promising, with a view to promoting further adoption of healthy policies within food production companies, so that healthiness will be given priority in development of new food products.

The Public Health Institute will also seek to collaborate with the Association of Restaurateurs, with a view to increasing availability of healthy meals at restaurants.

The Public Health Institute urges stakeholders, such as government, industry and the commercial sector, to work together, so that food pricing and range available will be conducive to consumption of healthier foods.

Data collection on diet

National surveys on diet in age groups aged 15-80 are to be carried out every four to five years.

The principal objectives of National Survey of Diet:

- To study how healthy the Icelandic diet is, and the changes which have taken place in the diet of the nation and specific groups since the last survey.
- To create an empirical basis for consideration of proposals for addition of supplements to food products.
- To create a scientific basis for research in the field of nutrition.

The Public Health Institute compiles statistics each year on the availability and sales of food, which are published on the Institute's website. The information is also published in a Nordic statistical handbook. The objective is to monitor the range of food available in the long term.

PHYSICAL ACTIVITY

Ever more studies confirm that regular physical activity is a crucial factor in the health and wellbeing of people of all ages. Those who are regularly active do not only reduce their risk of non-communicable diseases, such as cardiovascular disease, cancer, diabetes, skeletal problems etc. They also improve their chance of living an independent, healthy and happy life for longer. Physical activity has also proved an effective and economical form of treatment: according to a European report of the World Health Organisation (2005), physical activity is one of the public-health resources which is deemed the most cost-effective[48].

Physical activity recommendations:

- Adults should achieve a total of at least 30 minutes of moderate* or vigorous** physical activity each day.
- Children and adolescents should achieve a total of at least 60 minutes of moderate* or vigorous** physical activity each day.

* Moderate physical activity, e.g. brisk walk, gardening, housework, swimming, cycling
** Vigorous physical activity, e.g. mountain walking, jogging, most competitive sports

The findings of the 2002 *Eurobarometer* study indicated that two-thirds of the adult population of the European Union are not physically active enough to maintain their health[49]. At present limited data are available on physical activity levels of Icelanders, and hence it is hard to discern trends in recent years and decades. It has also proved difficult to make comparisons, as measurement tools have been evolving, as have criteria for desirable levels of physical activity.

Data are not available on how many adult Icelanders meet current recommendations. A survey on physical activity in Iceland in 2000 revealed that over half of Icelanders achieved the recommended physical activity at the time[50]. Findings of group studies by *Hjartavernd* (Icelandic Heart Association) indicate that physical activity during leisure time increased considerably during the period 1970-2000[51]. There are various indications, however, that the lifestyle of Icelanders became increasingly sedentary during that period. For instance, obesity has increased, and car ownership has risen rapidly: in the period 1996-2003 the number of privately-owned vehicles per thousand population rose by 33% in Reykjavík[52].

48 WHO Europe (2006). *The European health report 2005: Public health action for healthier children and populations*. Copenhagen: WHO Regional Office for Europe.
49 European Commission (2003). *Physical activity*. Brussels: European Commission.
50 Þórarinn Sveinsson and Svandís Sigurðardóttir (2000). *Könnun á þreki, heilsu og hreyfingu Íslendinga. [Survey of health, fitness and physical activity among Icelanders].*
51 Hjartavernd/Icelandic Heart Association (2004). *Hreyfðu þig fyrir hjartað* [Be Physically Active for your Heart] (information booklet).
52 Hjalti J. Guðmundsson (2004). *Umhverfisvísar Reykjavíkurborgar 2003 – Samgöngur í brennidepli* [Environmental indicators for the city of Reykjavík 2003 – Focus on Transport] (report). City of Reykjavík Environmental Health and Protection Office.
53 Sigríður L. Guðmundsdóttir, Díana Óskarsdóttir, Leifur Franzson, Ólafur S. Indriðason and Gunnar Sigurðsson (2004). *Samband líkamlegrar þjálfunar við þyngdarstuðul, fitumassa og gripstyrk í íslensku þýði.* [The relationship between physical activity, body mass index, body composition and grip strength in an Icelandic population]. *Læknablaðið*, 90, 479-486.

A recent survey of physical activity of Reykjavík residents (aged 30-85) revealed that one in five men and one in four women were not active during leisure time[53].

About 26% of pupils in grade 6 (aged 12) meet the physical activity recommendations, 19% in grade 8 (aged 14) and just under 14% in grade 10 (aged 16)[54]. Data on physical activity of boys and girls in these age groups reveal that 23% of boys say that they meet the recommendations, and 16% of girls. About half the pupils in these age groups normally walk or cycle to school[55]. Both boys and girls are more physically active on working days than at weekends[56]. Girls participate less in organised sports activities than boys, and they drop out at a younger age[57]. An increasingly sedentary lifestyle, not least among children and youngsters, e.g. using computers and watching TV/video, is a source for concern. This is supported by the fact that pupils in grade 6, 8 and 10 spend an average of 5.4 hours daily sitting in front of a screen (TV, video, video games and computers)[58].

Many bodies have contributed over the years to promoting more physical activity in Iceland, such as the educational system, the sporting movement, the fitness sector and various professional groups. The Public Health Institute's measures with regard to physical activity focus on reducing sedentary pursuits and encouraging more Icelanders of all ages to meet physical activity recommendations.
Success is predicated upon effective interdisciplinary collaboration at all levels between government and stakeholders, with regard to needs analysis, policy formation and actions.

54 Þóroddur Bjarnason, Stefán Hrafn Jónsson, Kjartan Ólafsson, Andrea Hjálmsdóttir and Aðalsteinn Ólafsson (2006). *Heilsa og lífskjör skólanema 2006: Landshlutaskýrsla*. [Health Behaviour in School-aged Children 2006: Regional Report] Akureyri/Reykjavík: University of Akureyri/Public Health Institute.

55 Public Health Institute (2006). *Allt hefur áhrif – einkum við sjálf: Stöðumat í upphafi verkefnis*. [Everything affects us – especially ourselves! Assessment of status at commencement of programme] Reykjavík: Public Health Institute.

56 Erlingur Johannsson, Sigurbjorn Arni Arngrimsson, Inga Thorsdottir, Thorarinn Sveinsson (2006). *Increased prevalence of obesity and pattern of physical activity among Icelandic children* (abstract). Nordic Obesity Meeting 2006.

57 Álfgeir L. Kristjánsson, Silja B. Baldursdóttir, Inga D. Sigfúsdóttir, Jón Sigfússon (2005). *Ungt fólk 2004. Menntun, menning, tómstundir, íþróttaiðkun og framtíðarsýn íslenskra ungmenna*. Rannsóknir meðal nemenda í framhaldsskólum á Íslandi 2004 og 2000. [Young people 2004. Education, culture, leisure pursuits, sports and future vision of young Icelanders. Studies of upper-secondary-school students in Iceland 2000 and 2004] Rannsóknir og greining.

58 Þóroddur Bjarnason, Stefán Hrafn Jónsson, Kjartan Ólafsson, Andrea Hjálmsdóttir and Aðalsteinn Ólafsson (2006). *Heilsa og lífskjör skólanema 2006: Landshlutaskýrsla*. [Health Behaviour in School-aged Children 2006: Regional Report] Akureyri/Reykjavík: University of Akureyri/Public Health Institute.

Objectives and approaches

Objective: Icelanders to be more physically active				
Indicator	Status	Measured by	PHI objectives 2010	National Health Plan to 2010
People aged 18-79 who meet PA recommendations	Unknown	Health and Wellbeing of Icelanders, 2007*	For consideration when data are available	More exercise
Pupils in grade 6 who are active at least 60 mins. every day	26%	HBSC, 2006**	> 26%	More exercise
Pupils in grade 8 who are active at least 60 mins. every day	19%	HBSC, 2006	> 19%	More exercise
Pupils in grade 10 who are active at least 60 mins. every day	14%	HBSC, 2006	> 14%	More exercise
Pupils in grades 6, 8 and 10 who spend 4 or more hours per day sitting in front of a screen	67%	HBSC, 2006	< 50%	More exercise

*The Health and Wellbeing of Icelanders survey is due to be carried out in 2007.
**HBSC, Health Behaviour in School-aged Children. see www.publichealth.is

Data collection

The Public Health Institute carries out regular surveys of physical activity taken by adults and schoolchildren in Iceland. The *Heilsa og líðan Íslendinga* (Health and Wellbeing of Icelanders) survey covers age groups 18-79 years, while the HBSC survey covers pupils in grades 6, 8 and 10 in compulsory education (see p. 20).

The findings of these surveys, and others in the field, will be combined to form a body of data in one place on physical activity, e.g. on possible benefits, physical activity levels, determinants and health-promotion programmes which have yielded results.

Policy formation

In a draft of the WHO framework for more physically active Europe the importance of making holistic national action plan for physical activity is emphasized[59]. It is important to create a consistent physical activity policy and action plan for Iceland, taking account of the work which has already been carried out. This is predicated upon collaboration between many parties, and upon funding being allocated to the work.

[59] WHO Europe (2006). Working paper: *Steps towards a more physically active Europe.* Lubljana: WHO Europe.

Conditions conducive to physical activity

Conditions, environment, availability and access to services and social support are factors which have great influence on people's daily physical activity. An environment conducive to physical activity is one in which physical activity is an easy option in daily life or as exercise. Increasing numbers of studies support the notion that people who live in such an environment are likely to be more physically active than others[60]. The WHO framework for more physically active Europe indicates, however, that conditions of daily life, including at work, at school, in urban planning, transport, and in some cases conditions for leisure activities, are less conducive to physical activity than in the past, with respect to development of density, urban planning, foot- and cycle-paths, school grounds, sports structures, green zones and various services[61].

The programme *Allt hefur áhrif – einkum við sjálf!* ! (Everything affects us – especially ourselves! see p.72) seeks to influence conditions for physical activity and good nutrition. Among other things, checklists have been compiled to assist local governments which participate in the programme in assessing the status of various factors that influence physical activity. In general terms, it is important to encourage good availability and access for both free play and organised physical activity, regardless of age, gender, physical and mental condition, and financial status.

Education and encouragement

• Physical activity recommendations

The Public Health Institute will, in collaboration with other bodies, revise the current recommendations on physical activity, which will be developed in detail and then published. This will be followed by a systematic publicity effort, using e.g. the *Physical Activity Circle*. The effectiveness of this publicity effort is to be assessed.

• Physical Activity Circle

The *Physical Activity Circle*, first published in 2005, is a graphic approach to increasing physical activity in daily life. It will be used to enhance knowledge of the physical activity recommendations, and to encourage people to be more active.

• Education in schools

It is important that teachers and others working with children and youngsters have well-grounded knowledge of the importance of physical activity. In connection with the programme *Allt hefur áhrif – einkum við sjálf!* (Everything affects us – especially ourselves! see p. 72), parents and school staff are offered, for instance, lectures on physical activity. The Public Health Institute is also in collaboration with school healthcare services on the *Six Hs of Health*

[60] Active Living Research (2005). *Active Living Research Briefing* (revised March 2005). Downloaded from: http://www.activelivingresearch.org/downloads/briefing0305.pdf.

[61] Barbara McCann (2004). *Designing for Active Recreation Research Summary* (revised February 2005). Downloaded from: http://www.activelivingresearch.org/downloads/recreationrevised021105.pdf.

programme which focuses *inter alia* on physical activity, and its importance for children's wellbeing (see p. 76).

• **Handbooks**
The intention is to publish handbooks containing guidance on how it is possible to increase daily physical activity in pre-schools and compulsory schools, in addition to the obligatory school physical education programme. In collaboration with the Directorate of Health, publication of guidelines for health personnel is planned, on physical activity as a preventive method and a treatment.

• **Educational material on physical activity**
The intention is to prepare, in collaboration with other bodies, education material on physical activity for women during pregnancy and after childbirth. This is to include advice for parents on monitoring and stimulating their children's motor development. Other plans include the preparation, in collaboration with other bodies, of educational material to promote more physical activity in the workplace, and more physical activity in the family.

• **Stretch Break program**
Stretch Break for Kids, a computer program for children on ergonomic stretching exercises, has been translated into Icelandic by the Public Health Institute. The program is installed on the child's computer, and regularly reminds him/her to stand up and stretch. The program is available free of charge on the Public Health Institute website.

• **It All Counts**
The intention is to launch a new campaign of education and encouragement with the slogan *Allt telur* (It All Counts). The programme is based upon use of pedometers to count how many steps people take over a certain period, e.g. during one day. The aim is to increase physical activity in daily life, and make it easier for people to monitor their activity over the day, e.g. to achieve the recommended minimum amount of physical activity.

• **Global Move for Health Day**
The Public Health Institute is an active participant in Global Move for Health Day on 10 May each year. The World Health Organisation proposes a theme for the Move for Health Day each year, and activities in Iceland take account of this.

• **Collaborative programmes with the sport movement**
One of the bodies with which the Public Health Institute collaborates is the National Olympic and Sports Association of Iceland (ÍSÍ). There will be continuing emphasis on campaigns organised by the ÍSÍ, such as *Hjólað í vinnuna* (Cycle to Work) and the Women's Run. Collaborative programmes are envisaged on physical activity for certain social groups, such as older people.

BODY WEIGHT AND BODY COMPOSITION

It is important to consider the question of normal and desirable body weight. With respect to health, it is neither desirable to be too thin, nor too fat. The likelihood of disease and health problems is least for those whose body weight is normal[62]. Body composition is generally measured using the Body Mass Index or BMI: weight/height² (kg/m²). It should be pointed out that BMI can give misleading figures for some individuals, as it is based upon body weight, and not the proportion of fat on the body. Thus the BMI does not distinguish between fat and muscle. Hence a slim, muscular person may find him/herself categorised as "overweight." The BMI is, however, particularly helpful in assessing the relationship between body weight and public health, as within groups there is a strong correlation between BMI and body fat.

Overweight and obesity have been increasing among both children and adults in Iceland: in 2002 about 57% of males and 40% of females aged 15-80 were over normal weight[63]. In 2004 about 23% of nine-year-old children were over normal weight[64]. Those who are considerably overweight are more likely to develop diseases, such as Type II diabetes, cardiovascular disease, some forms of cancer, gallstone problems, weaknesses in the skeletal system, depression and other ailments, than those who are of normal weight.

Women are more likely than men to be unhappy about their weight. Concerns about weight increase during adolescence. Thus 32% of girls in grade 6 (aged 12) feel they should lose weight, while in grade 10 the proportion reaches 57%. According to data from the Centre for Child Health Services, 17% of 15-year-old girls in the capital area are over normal weight. Hence it is clear that a large proportion of girls who are of normal weight believe they need to lose weight. Young boys, on the other hand, are more likely to feel they need to gain weight: 9% of boys in grade 6, and 19% in grade 10[65]. Similarly, one in three women of normal weight is unhappy with her weight, or is trying to lose weight. The most discontent is felt by women who have gained weight in the preceding year[66].

[62] WHO (1998). *Obesity: Preventing and managing the global epidemic.* Geneva: WHO.
[63] Public Health Institute (2003). *Landskönnun á mataræði 2002.* [National Survey of Diet 2002]. Reykjavík: Public Health Institute.
[64] Centre for Child Health Services (2004). Mælingar úr skólaheilsugæslunni í Reykjavík 2004. [Statistics from School Health Care in Reykjavík 2004]
[65] University of Akureyri and Public Health Institute (2006). *Heilsa og lífskjör skólanema 2006: Landshlutaskýrsla* [Health Behaviour in School-aged Children 2006: Regional Report]. Akureyri/Reykjavík: University of Akureyri/Public Health Institute.
[66] Olafsdottir, A.S., Thorgeirsdottir, H., and Steingrimsdottir, L. (2006). Discontentment with body weight among normal weight women (abstract). Nordic Obesity Meeting 2006.

Objectives and approaches

Objective: trends in overweight and obesity to be mitigated				
Indicator	Status	Measured by	PHI objectives 2010	National Health Plan until 2010
9-year-olds who are overweight (BMI ≥ 19.1)	23%	CCHS*, 2004	< 20%	Not specified
9-year-olds who are obese (BMI ≥ 22.8)	5%	CCHS*, 2004	< 4%	Not specified
People 20 and older who are overweight (BMI ≥ 25)	56%	National Survey 2002	No increase	Not specified
People 20 and older who are obese (BMI ≥ 30)	16%	National Survey 2002	No increase	Not specified
Girls in grade 10 of lowest weight (BMI ≤ 18.6) who think they need to lose weight	23%	HBSC, 2006***	Reduction	Not specified

* CCHS: Centre for Child Health Services, ÍSKRÁ.
** BMI: Body Mass Index, [weight/height^2 (kg/m^2)].
***HBSC: Health Behaviour in School-aged Children, see www.publichealth.is

Preventive measures in the fields of nutrition, exercise and mental health are conducive to achieving these objectives: see the relevant fields and the programmes: *Allt hefur áhrif – einkum við sjálf!* (Everything affects us – especially ourselves!) p.72, the *Six Hs of Health* p. 76, and *Education in School* p. 75.

Interdisciplinary projects

Everything affects us – especially ourselves!
Health-Promoting Schools
Education in School

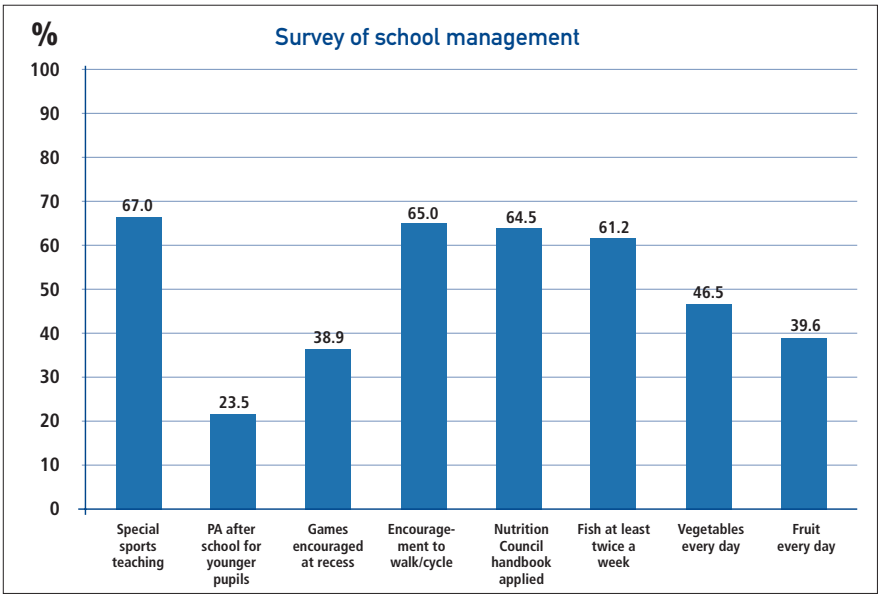
Interdisciplinary projects

Everything affects us – especially ourselves!

Allt hefur áhrif – einkum við sjálf! (Everything affects us – especially ourselves!) is a joint development project run by the Public Health Institute and 25 local governments. The project highlights the importance of nutrition and exercise for mental and physical wellbeing. The project was formally launched in the autumn of 2005; the first phase will end in 2007, the second in 2011.

The goal of the project is to promote healthy lifestyles for children and their families, by emphasising increased physical activity and improved diet. Various factors will be evaluated which relate to children's physical activity and nutrition, with respect to their mental and physical wellbeing. The formulation of objectives focuses on participating local governments, as well as primary/lower-secondary schools, preschools and parents in those communities.

School is an excellent forum for health promotion efforts with children and youngsters, as all children of compulsory school age can thus be reached. The school community influences the health and wellbeing of the pupils. Therefore it is of great importance that conditions in the school is conducive to children's health and wellbeing. One of the surveys carried out as part of the project concerned various matters related to physical activity and nutrition for children of compulsory school age. The following graphs shows some examples of the findings:



Objectives and approaches

Objective: Encourage healthy lifestyle for youngsters and their families through improved diet and increased physical activity				
Indicator	Status	Measured by	PHI objectives 2007	PHI objectives 2010
Local governments with policy/action plan on lifestyle of children/ youngsters with emphasis on increased PA and improved diet	0%	Public Health Institute 2005*	80%	90%
Primary/lower-secondary schools which completely or largely follow PHI recommendations on nutrition for schoolchildren	65%	Public Health Institute 2005*	75%	85%
Parents who evaluate their child's PA to be too little or far too little	25%	Public Health Institute 2005*	15%	10%

* Survey of principals of primary/lower-secondary schools and preschools and of parents of pupils in grade 6 in academic year 2004-2005

The project focuses on two risk factors in people's lifestyle, i.e. lack of physical activity and poor diet. The programme's approach is to reduce the risks arising from these factors; in all preventive and health-promotion work, it is vital to maintain a holistic approach, applying diverse measures. Account will be taken of social and cultural factors, for children as well as adults. Each local government formulates its own policy and action plan on children's lifestyle, focussing on increased physical activity and improved diet. Each local government has a steering committee to supervise the project in the community.

The Public Health Institute holds lectures in the participating communities on the importance of physical activity and nutrition for mental and physical wellbeing; lectures are held for school and preschool staff and parents' organisations. Courses are also available for kitchen staff of schools and preschools. Lectures are based upon the Public Health Institute's handbooks for preschool and school canteens.

Once a year the Public Health Institute holds a joint meeting for the participating local governments, at which they can exchange experiences of the project in their own community. Thus the project evolves, and the ideology can spread to other communities which are not formal participants in the project.

Evaluation of outcome
The University of Akureyri Research Institute evaluates the outcome of the programme, in collaboration with the Public Health Institute Research and Development Division. Status was assessed at the commencement of the *Allt hefur áhrif – einkum við sjálf!* (Everything affects us – especially ourselves!) project, using four surveys which will be repeated every four years. The first findings of the surveys were published in January 2006. The surveys are:

1. A survey of all principals of primary/lower-secondary schools on the school's policy and children's conditions.
2. Survey of preschool principals throughout the country on the school's policy and children's conditions.
3. Survey of parents of 11-year-old children on their views on children's diet and health.
4. Survey of children and youngsters in grades 6, 8 and 10 of compulsory schooling (aged 12, 14 and 16), on leisure pursuits, wellbeing, physical activity and nutrition.

In addition to the publication of overall findings from the four surveys, all the participating local governments will receive the findings of the first two surveys for their own community, in comparison with the national and regional findings. The overall findings are accessible on the Public Health Institute website.

Health-Promoting Schools

The European Network of Health-Promoting Schools is a collaborative programme of the World Health Organisation, the Council of Europe and the European Union. Iceland became a party to the programme in May 1999, when participation had received the formal approval of educational and health authorities. The aim of the programme is to provide support for primary/lower-secondary schools and preschools in formulating a holistic health-promotion policy. The idea is to enhance knowledge of the importance of the school as a forum for promoting health of children and teenagers.

The Health-Promoting Schools programme involves the following aspects: health education and links with school healthcare services, physical activity, participation by parents and other members of the household, a healthy and safe school environment, health promotion for staff, and school meals. A steering committee appointed by the Public Health Institute is developing a checklist on the above issues.

Education in School

A special programme within the Public Health Institute, Education in School, has the objective of promoting more, and systematic, preventive and health promotion work in preschools and primary and secondary schools. The objective of such work is to strengthen pupils' sense of self and their confidence, so that they adopt a lifestyle conducive to physical and mental wellbeing, e.g. choosing healthy foods, regular physical activity and outdoor activities, and rejecting tobacco, alcohol and other substances.

The Education in School programme is pursued in collaboration with many other bodies. Emphasis is placed upon increasing further collaboration with schools, at all educational levels. For the best possible results, a need assessment of health education and preventive work in primary and secondary school is necessary; additionally it must be ascertained and recorded who teaches the pupils about health promotion and prevention.

The findings of a recent summary of papers on health promotion and prevention in schools, school have been encouraged to apply a holistic approach with less emphasis on lectures[67]. The Public Health Institute works in accord with the guidelines of WHO on health promotion and prevention in schools. The emphasis is upon finding ways to teach a healthy lifestyle, and training people to apply these methods. Emphasis is also placed upon environmental and social issues, and upon establishing links with the home and immediate family. The following list of areas of emphasis has been issued for schools:

1. Policy formation.
2. Environment.
3. Social environment.
4. Interaction with the home and relatives.
5. Health promotion for pupils, lifestyle and prevention.
6. Health services.

[67] Stewart-Brown, S (2006). *What is the evidence on school health promotion in improving health or preventing disease and, specifically, what is the effectiveness of the health promoting schools approach?* Copenhagen: WHO Regional Office for Europe.

The principal objectives of the Public Health Institute school education programme are:

- to establish collaboration with all preschools in Iceland, and encourage them to work in accord with the guidelines of the Public Health Institute on healthy lifestyle,
- that holistic educational material on prevention and health promotion be available for all levels of primary/lower-secondary school,
- to establish formal collaboration with high schools, and to encourage them to make health promotion and prevention a part of the school's activities,
- to establish collaboration with university-level institutions in Iceland, and to encourage the university communities to take conscious account of the students' health.

Collaboration with the healthcare sector on health education in primary/lower-secondary school

Collaboration has commenced with the Centre for Child Health Services and school healthcare services on health education for pupils in compulsory schooling. The focus is on *6 H heilsunnar* (Six Hs of Health), i.e. ***h****víld* (rest) – ***h****reyfing* (physical activity) – ***h****ollur matur* (healthy food) – ***h****reinlæti* (hygiene) – ***h****amingja* (happiness) – ***h****ugrekki* (courage), together with sexual health. The idea of the *Six Hs of Health* is to combine several messages on health and make them more memorable.

All the different fields of the Public Health Institute which are relevant to the *Six Hs of Health* are involved in the programme. The collaboration means that a consistent overall approach can be taken to the different aspects of health education. The collaboration should also ensure that all children of compulsory school age and their parents receive health education. Children are to work on study projects and receive instruction on healthy lifestyle from the beginning of their schooling in grade 1 until they graduate from grade 10. Pupils also bring home a newsletter for their parents on what they have learned at school, and encouragement for a healthy lifestyle.

School nurses will carry out health education, which will be standardised nationally. Teaching methods and materials will be adapted to the age and development of the children. Special emphasis will be placed upon pupils learning to make their own decisions, building up a positive self-image, setting their own objectives, learning to stay in control when problems arise, and interacting effectively with others. In health education for each year-group, the following factors will be well-defined: objectives, focus, time-frame (i.e. number of teaching sessions per year), teaching guidelines, method, follow-up to the education, and record-keeping. Records will be kept on the school healthcare central database (ÍSKRÁ). The health and wellbeing of schoolchildren is monitored by HBSC survey, carried out every four years (most recently in 2006).

Special measures

In general, it is not until the last few years of compulsory schooling that a certain proportion of pupils begin to exhibit risk behaviour, e.g. use of tobacco, alcohol and other substances. In order to counteract this, special measures have been introduced.

Tobacco

Education in schools on the perils of smoking is mandated by law. The Public Health Institute makes its contribution to this education e.g. by providing educational material, support, and training for school staff.

Smokefree Class is a project aimed at pupils in grades 7 and 8. The project has operated for several years, with good results. Pupils join forces to form a smokefree class; the objective is to apply positive peer pressure to encourage pupils to be non-smokers.

Education on smoking for grades 8, 9 and 10 uses the teaching material *Vertu frjáls reyklaus* (Be Smoke Free). This material will be supplemented by supplementary material on the Public Health Institute website for teachers. As the *Smokefree Class* project is a highly effective anti-smoking aid in grades 7 and 8, various measures will be used to support anti-smoking education for older pupils as well.

Alcohol and other substances

Each year the Public Health Institute allocates grants to preventive programmes for primary and secondary school. Many of these programmes involve visits to schools by the organisers of the programmes, who provide education on the harmfulness of alcohol and other substances, and urge pupils to say *No*.

The Public Health Institute is also a more active participant in various programmes, such as *Flott án fíknar* (Smart, Drug Free). This programme, aimed at primary and secondary schools, has the objective of supporting youngsters and their parents against substance abuse. The programme aims to be conducive to creating a positive youth culture, so that young people will not start using tobacco, drugs or other substances, and will not drink alcohol until they are of an age to do so legally (age 20).

Children's mental health
In the autumn of 2006, the *Zippy's Friends* programme was introduced in many primary schools. This is a life skills programme in which children are trained to deal with problems that arise in daily life, and also to help those who have problems (see p. 43).

High schools
Work is in progress on developing greater collaboration with prevention officers in high schools. In collaboration with stakeholders, teaching material will be prepared for preventive work and health promotion, in which a holistic approach will be taken to factors that affect health, such as physical activity, diet, mental health, sexual health, and use of tobacco, alcohol and other substances.
In anti-smoking education, special emphasis will be placed upon counteracting the growing use of smokeless tobacco products by high-school students. Those students who wish to give up tobacco will also be offered assistance, *inter alia* via an interactive website to be established in 2007.

PRINCIPLES OF THE PUBLIC HEALTH INSTITUTE'S PERSONNEL

RESPECT

We respect and trust each other, listen to others, and respect different viewpoints and opinions.

COLLABORATION

We work together within the Public Health Institute and with others, as this is a prerequisite for the success of our efforts.

PUBLIC HEALTH INSTITUTE OF ICELAND

KNOWLEDGE

We accumulate knowledge and apply it to our work. We do this by

- employing well-qualified people.
- pursuing ongoing education and lifelong learning.
- promoting research.
- promulgating information and new knowledge.

ACHIEVEMENT

We achieve results by

- evaluating the outcome of programmes
- carrying out opinion polls regarding the Public Health Institute, its fields of work and individual programmes
- regular monitoring of national health and lifestyle

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