Country report Finland – June 2018

Report by **Seppo Lehto** MD, PhD, FESC, Cardiologist
Adjunct Professor, University of Eastern Finland, Chief of Health Services
Varkaus Hospital, Unit of Kuopio University Hospital, Finland

National CVD Prevention Coordinator for Finland

Prepared for the EAPC "Country of the Month" initiative

For more information about the European Association of Preventive Cardiology (EAPC), visit our wepage

Health carel Risk factors l Prevention methods l Prevention activities l Cardiac Rehabilitation l Future

Acknowledgement

This report was prepared by:

- **Seppo Lehto**, MD, PhD, FESC, Cardiologist, Adjunct Professor, University of Eastern Finland, Chief of Health Services Varkaus Hospital, Unit of Kuopio University Hospital, Finland, National CVD Prevention Coordinator for Finland
- **Veikko Salomaa**, M.D., PhD, Research Professor, emeritus THL-National Institute for Health and Welfare, Finland
- **Antero Kesäniemi**, M.D., Professor of Medicine, emeritus University of Oulu, Senior Adviser Oulu University Hospital, Finland
- **Anna-Mari Hekkala**, M.D., PhD., Cardiologist, Medical Director of the Finnish Heart Association

I. Structure of Health care

There are 5 480 000 citizens living in Finland. Life expectancy at birth reached 81,6 years in 2015. During the last 40 years, the average life expectancy has improved by 11.6 years in men and by 9.2 years in women. Of this improvement, the reduction in cardiovascular disease mortality has contributed 5 years in men and 4.5 years in women (Salomaa et al 2016). Still, it has been estimated that more than a quarter (28%) of the overall burden of diseases in Finland could be attributed to behavioural risk factors.

Finland's health care system is complex and decentralised. Care is delivered in municipal, occupational or private facilities. Over 300 municipalities are responsible for the provision of basic services. They fund and organise (often jointly) the provision of primary care, and form 20 hospital districts. At the national level, the Ministry of Social Affairs and Health is responsible for developing and implementing health reforms and policies. Funding for health care comes through municipalities with taxation right and the statutory National Health Insurance (NHI) scheme, run by the Social Insurance Institution and accountable to Parliament.

The NHI is responsible for funding outpatient medications, health care-related travel costs, as well as sickness and maternity allowances. In addition, it effectively subsidizes occupational health care, as in Finland employers are obligated to organise and provide health services for their employees, and the NHI covers about half of employers' health costs.

Primary care offers multiple services (including prevention and outpatient treatment, dental care, maternity and child health) in health centres and occupational health units. Secondary care (including specialised outpatient care, inpatient care and day surgery) is mainly provided by hospitals organised by municipality-owned hospital districts. Tertiary care is delivered in five university hospitals (in Helsinki, Turku, Tampere, Kuopio and Oulu). Patients need a referral to access specialist care, except for emergency cases. There are only few private hospitals in Finland, but private providers of specialist outpatient care are much more common. One recognised issue in health care is the insufficient coordination and communication between primary and secondary care.

The ratio of nurses to population is the second highest in the EU after Denmark, and substantially higher than the EU average (14,6 nurses per 1000 population in 2014), while the ratio of doctors is below the EU average (3,8 per 1000 population in 2016).

Unmet needs for medical care are higher in Finland than the EU average. Most of these unmet needs are related to waiting times, especially among low-income people and unemployed, who have no access to occupational health care.

Health spending per capita in Finland has gone up over the past 10 years and is slightly above the EU average (€ 2981 in 2015). This accounts for 9.4% of Finland's gross domestic product (GDP), slightly below the EU average 9.9%. Public funding accounts for 74% of all health spending in Finland, with most of the remaining spending paid out of pocket by households. A wide range of health services and goods is publicly covered, but with user fees applied to most services and goods, notably for outpatient pharmaceutical drugs and dental care.

Cardiology in Finland

In 2017, there were only 282 cardiologists in Finland, which means 51 cardiologists per million inhabitants. About 30 % of cardiologists are women. Coronary angiographies and percutaneous interventions are performed in 23 hospitals. Five of them are university hospitals and others are regional hospitals. Cardiac surgery is performed only in university hospitals, and cardiac transplants as well as surgery of congenital heart defects are centralised in the Helsinki University Hospital.

CVD prevalence and mortality

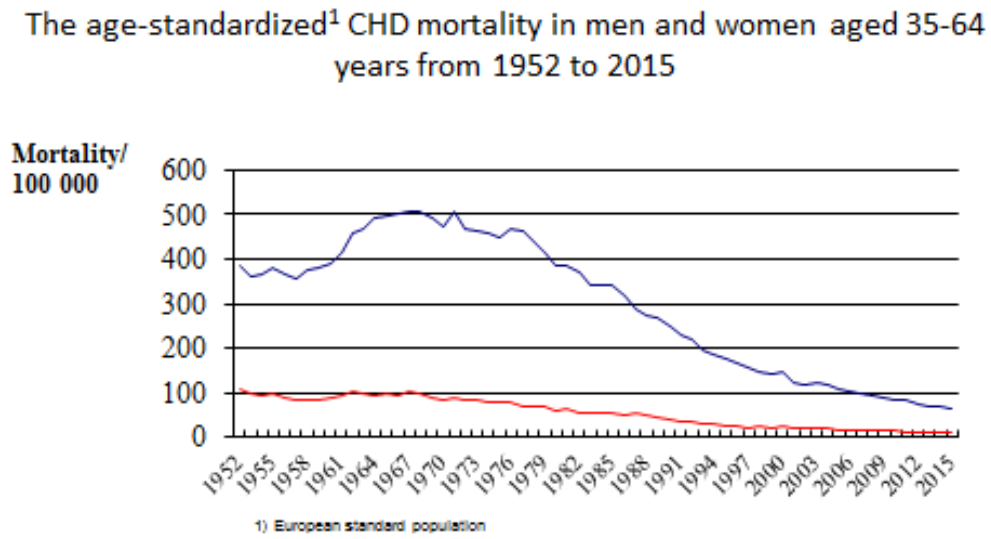
Finland has experienced a huge change in coronary heart disease (CHD) incidence and mortality over the past 35 years. In the late 1960s, CHD mortality in Finland was the highest in the world and was particularly high among working aged men in the eastern part of the country. In 1972, the North Karelia Project was launched aiming at reducing the levels of the three main cardiovascular risk factors: smoking, high serum total cholesterol level and blood pressure levels. The project focused on behavioural change,

and systematic monitoring of risk factors in the population was developed. Over the past decades, mortality rate has decreased by more than 80% in the working aged population (Fig. 1), which is clear evidence that lifestyle interventions can prevent the disease.

Although the progress has been remarkable, the prevalence and mortality of cardiovascular diseases in Finland is still higher compared to other Nordic countries, as well as Southern European countries. Based on the Health 2000 survey, the prevalence of CHD in Finnish population aged >30 years is 9.4% among men and 5.4% among women.

In Finland, 186 100 patients had a diagnosis of atherosclerotic cardiovascular disease (ASCVD) in 2016 according to the medication reimbursement database of the Social Insurance Institution of Finland (KELA).

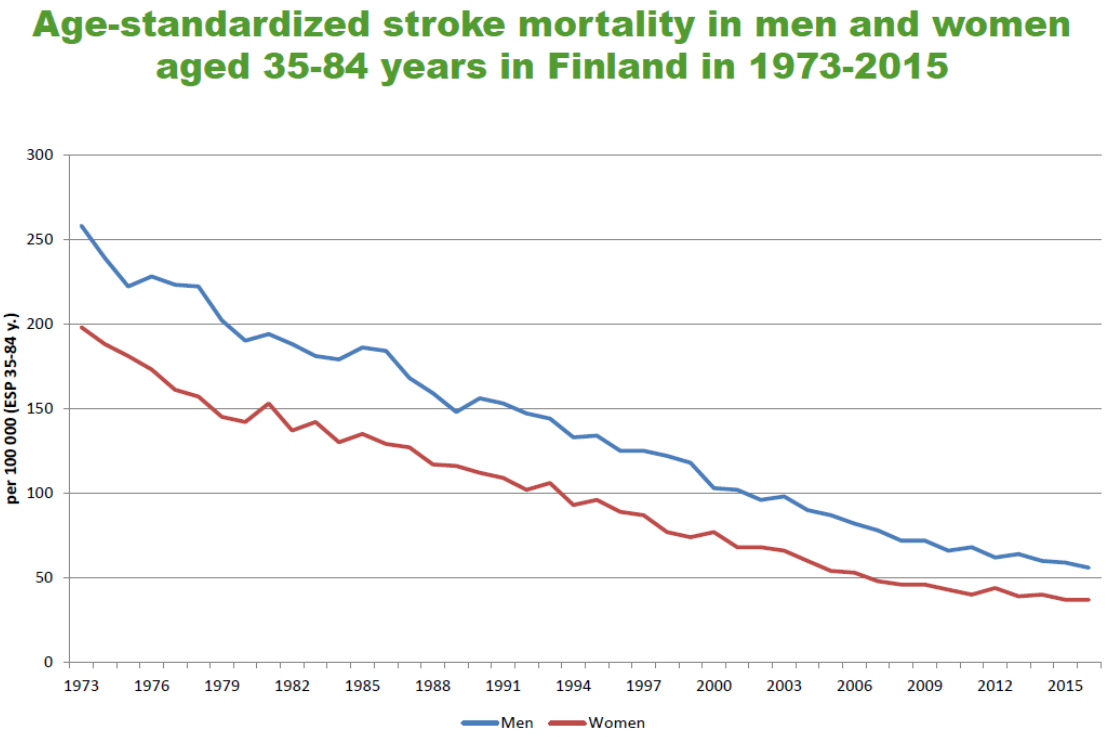
Fig 1:



Source: Data: National Causes-of-Death Register, Statistics Finland; Age-standardization and figure: National Institute for Health and Welfare, Helsinki, Finland.

The age-standardised stroke mortality in persons aged 35-84 years has also declined by more than 70% from the early 1970s to 2015 (Fig. 2). In the Health 2000 survey, the prevalence of stroke among Finns aged ≥30 years was 2.3% in men and 1.3% in women.

Fig. 2:



Source: Cardiovascular Disease Register, National Institute for Health and Welfare, Helsinki, Finland. www.thl.fi/cvdr/

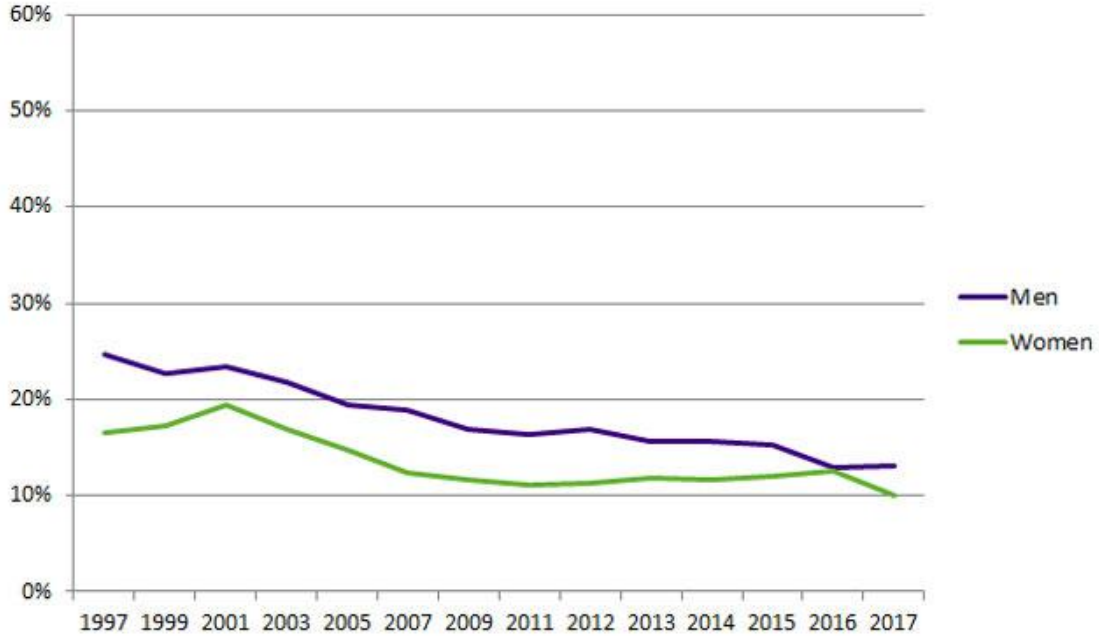
II. Risk factor statistics

Cardiovascular risk factor levels in Finnish population have been followed up with regular health examination surveys, organised by the National Institute for Health and Welfare and carried out every five years since 1972 (Borodulin et al. 2014). The latest one in this survey series was carried out in 2017 and some of its findings are shown below (Koponen P et al 2018).

Smoking and other tobacco products

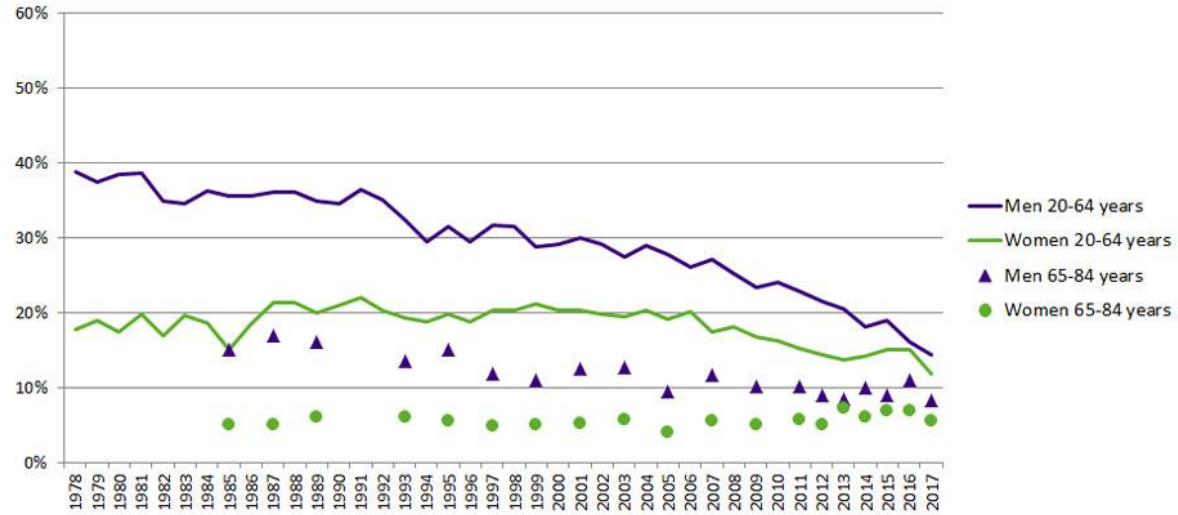
In Finland, smoking has decreased remarkably during recent decades, and smoking rates are now among the lowest in Europe. The prevalence of daily smoking was 13% for men and 10% for women among adult population in 2017 (Fig 3).

Fig. 3: The prevalence of daily smoking



Source: National Institute for Heath and Welfare

Fig. 4: Daily smoking among 20-84-year olds by sex 1997-2017.

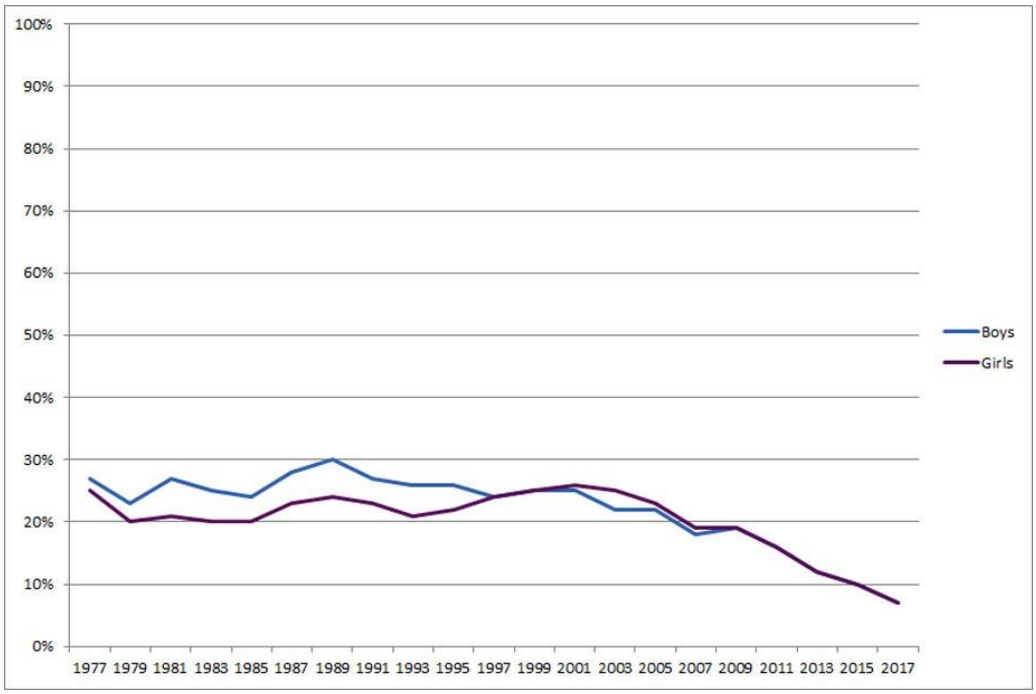


Source: National Institute for Health and Welfare

The differences in smoking prevalence are considerable among different socioeconomic groups, both in men and women. For low educated, the prevalence was 17% and for high educated 6% in 2017.

According to the latest Adolescent Health and Lifestyle Survey (2017), 7% of boys and girls aged 14-18 years smoked daily. The smoking prevalence among youth has declined remarkably (Fig 5).

Fig 5: Daily smoking among boys and girls in 1977-2017.



Source: Adolescent Health and Lifestyle Survey 2017

It is forbidden to sell snus in Finland, but it is imported by individuals. The use of snus is low. In 2014 2% of men used it daily and 3% occasionally. The use of snus was most common among men aged 25-34 years. Only 0.4% of women used snus in 2014. Regrettably, the use of snus has increased among adolescents, especially among boys. In 2015, 4% of boys aged 16 years were daily users.

In Finland the sale of e-cigarettes is permitted under the Tobacco Act. Marketing of e-cigarettes is prohibited. Occasional or daily use of e-cigarettes among men was 3.3% and among women 2.6% in 2014. The use of e-cigarettes was more common among smokers than non-smokers. However, the use of e-cigarettes has become more common among adolescences. Among 16- and 18-year old boys, 40% and 46%, respectively, have at least tried e-cigarettes.

13% of daily smokers used e-cigarettes in 2014 (Vardavas et al 2015) .

In Finland, 15% of coronary patients smoked cigarettes after a cardiac event, and 53% of those smoking at the time of event were persistent smokers (Kotseva K et al 2015).

High blood pressure

In the recent FinHealth 2017 survey the average blood pressure in adults aged $\geq$ 30 years was 136.5/81.4 mmHg in males, and 132.9/78.1 mmHg in females. 58% of men and 48 % of women had blood pressure over 140/90 mmHg, but only half of those were on medication. A small reduction of blood pressure values was observed compared to the previous surveys and, importantly, the trend has not turned to an increase.

Only half of Finnish coronary patients who are on medication reached the recommended target levels (Kotseva K et al 2015).

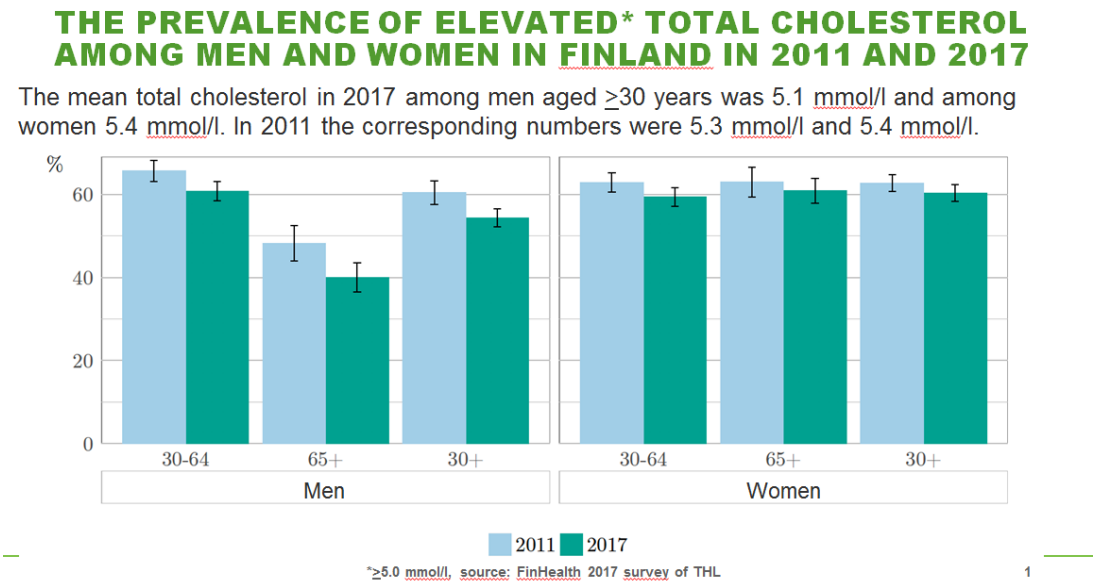
Diabetes

Diabetes has been an increasing public health problem in Finland as well as in many other European countries. The most recent data from the FinHealth 2017 survey show that 15% of men and 9% of women aged $\geq$ 30 years had prevalent diabetes. However, compared to the earlier 2011 survey, the prevalence of abnormal hemoglobin A1c values had not increased anymore.

High serum cholesterol

In the FinHealth 2017 survey, 60% of women and 54 % of men at the age group 30-65 years had high serum cholesterol (total cholesterol $\geq$ 5 mmol/l or LDL-cholesterol $\geq$ 3 mmol/l). High cholesterol values have been decreasing since 2012 – in women from 63 % to 60 % and in men from 61 % to 54 % showing that the increasing trend observed between 2007 and 2012 has been temporary, and has again turned to a decrease. (Fig 6)

Fig.6: The prevalence of elevated total cholesterol in Finland



Source: FinHealth 2017 survey of THL

Obesity

Obesity is still a major problem. The recent FinHealth 2017 survey shows that the prevalence of obesity in the age group 18-64 years old has increased 3,2% in men and 3,4% in women compared to the previous survey in 2011. More than half of adult people are overweight (body mass index (BMI) over 25 kg/m^2), and more than every fourth Finn is obese (BMI over 30 kg/m^2). The mean BMI in working aged men is 27.8 kg/m^2 and in women 27.2 kg/m^2. Obesity is more common in Finland compared to other Nordic countries.

Physical inactivity

Physical activity has become increasingly popular as a hobby in the last decades. In 2017, 73% of working-aged men, and 71% of working-aged women did some leisure-time physical activity. The figures have been slightly increasing over the past years, especially in men. Physical activity while commuting (more than 15 minutes daily) is more common in women (one third of working women) than in men (one fifth). Commuting exercise is common in youngest male but decreases with aging.

Positively, screen-time sitting has been decreasing, especially in young men. In general, one third of men and women spent more than three hours daily sitting at screen. Screen-time sitting is much more common in elderly (48% of men and 52% of women).

Diet

The National FINDIET Surveys conducted by The National Institute for Health and Welfare (THL) has followed the dietary habits and nutrient intake of the adult Finnish population since 1982. The latest data represented here was collected in 2012.

According to the survey, diets of almost all participants included grain products, dietary fat, meat dishes, milk and dairy products. On average, 80% of men and 95% of women ate vegetables and root vegetables. The daily intake of vegetables, root vegetables, legumes, fruits, berries or juices was on average just over 400 g among women and slightly less than 400 g among men. Overall, women's diet contained a significantly higher proportion of fruit and vegetables than that of men.

The percentage contribution of fat to the total energy intake was 36% in working aged men and women. The respective percentage for saturated fatty acids in men and women was 14% and for elderly men and women 13%. Most of the saturated fat consumed was so-called hidden fat, derived from milk products, meat products, bakery products etc. Mean daily salt intake was 8.9 g in working aged men and 6.5 g in women, which was higher than recommended. The intake of folate and iron fell below the recommended levels. The main sources of vitamin D were fish and dietary fats and milk products fortified with vitamin D.

According to the 2012 survey, the previous improvements in the dietary habits of the Finnish adult population concerning the quality of fat and salt intake have been put on hold. The proportion of fat in energy intake has increased through increased intake of saturated fat but also through increased intake of unsaturated fat. Intake of salt has increased slightly and is still quite far above the recommended intake levels. There is a further need to increase fiber intake and to cut down the intake of sucrose. Positive changes in the diet of the Finnish adult population are increased consumption of vegetables and vegetable oils. A diet comprised of more whole grain cereals, fish, rapeseed oil or other vegetable oils, vegetables, fruit, and berries, and less consumption of foods containing high levels of sucrose and saturated fats would help to achieve better diet.

Alcohol

The consumption of alcohol in 2016 was 10.8 liter (100% alcohol) per person aged over 15 years. Beer is the most popular beverage. Alcohol-related problems and deaths in Finland are much higher than in most other Nordic and EU countries.

References:

Salomaa V, Pietilä A, Peltonen M, Kuulasmaa K. Changes in CVD Incidence and Mortality Rates, and Life Expectancy: North Karelia and National.Glob Heart. 2016 Jun;11(2):201-5. doi: 10.1016/j.gheart.2016.04.005. Review.PMID:27242087

Koponen P, Borodulin K, Lundqvist A, Sääksjärvi K, Koskinen S, toim. Terveys, toimintakyky ja hyvinvointi Suomessa – FinTerveys 2017 -tutkimus. Terveyden ja hyvinvoinnin laitos (THL), Raportti 4/2018, http://urn.fi/URN:ISBN:978-952-343-105-8).

Borodulin K, Vartiainen E, Peltonen M, Jousilahti P, Juolevi A, Laatikainen T, Männistö S, Salomaa V, Sundvall J, Puska P. Forty-year trends in cardiovascular ris factors in Finland. Eur J Pub Health 2014;25(3):539-546.

Jousilahti P, Laatikainen T, Peltonen M, Borodulin K, Mannisto S, Jula A, Salomaa V, Harald K, Puska P, Vartiainen E. Primary prevention and risk factor reduction in coronary

heart disease mortality among working aged men and women in eastern Finland over 40 years: population based observational study. BMJ 2016;352:i721.

Vartiainen E, Laatikainen T, Tapanainen H, Puska P. Changes in serum cholesterol and diet in North Carelia and all Finland. Global Heart 2016;11(2):179-84.

Laatikainen T, Nissinen A, Kastarinen M, Jula A, Tuomilehto J. Blood pressure, sodium intake, and hypertension control: Lessons from the North Carelia Project (Rev.). 2016;11(2):191-9.

Mannisto S, Laatikainen T, Helakorpi S, Valsta LM. Monitoring diet and diet-related chronic disease risk factors in Finland. Pub Health Nutrition 2010; 13(6A):907-14.

Seiluri T, Lahelma E, Rahkonen O, Lallukka T. Changes in socio-economic differences in food habits over time. Pub Health Nutrition 2011;14(11):1919-26.

Helldan A, Raulio S, Kosola M, Tapanainen H, Ovaskainen M-L , Virtanen S. Finravinto 2012 -tutkimus – The National FINDIET 2012 Survey. ISBN 978-952-245-950-3. Report 16/2013. Helsinki, Finland 2013.

Vardavas, Constantine I. & Filippidis, Filippos T. & Agaku, Isreal T. Determinants and prevalence of e-cigarette use throughout the European Union: a secondary analysis of 26 566 youth and adults from 27 Countries. Tobacco Control 24 (2015): 5, 442–448.

Kotseva K, Wood D, De Bacquer D et al. Euroaspire IV. A European Society of Cardiology survey on the lifestyle, risk factor and therapeutic management of coronary patients from 24 European countries. European Journal of Preventive Cardiology Cardiology Survey 2015;1-13.)

III. Main actors and Prevention methods

The Finnish Government and municipalities

The Ministry of Social Affairs and Health is responsible for developing and implementing health reforms and policies. Over 300 municipalities are responsible for basic services, such as local health centers. Together they form 20 hospital districts.

The National Institute for Health and Welfare (THL) is a Finnish research and expert agency that provides information on health and welfare for decision-making and activities in the field. More than 800 articles by THL are published in scientific journals each year. Articles published by THL are highly rated by the scientific community.

The Finnish Medical Society Duodecim is Finland's largest scientific association. It exists to develop the professional skills and clinical practice of doctors through continuing education, publications and research grants. The Finnish evidenced-based medicine guidelines are published by Duodecim. Established in 1881, Duodecim's membership today comprises more than 20 000 doctors and medical students.

The Academy of Finland funds innovative research aiming at significant scientific breakthroughs. One example of the ongoing projects in the field of prevention is called STOP DIABETES -project. **Focus on Prevention declaration**, published by a distinguished working group in 2017, was organized by the Academy and Duodecim.

The Finnish Society of Cardiology was founded in 1967. There are currently around 814 members of which one third are cardiologists, and the rest of members are doctors with special interest to cardiology (cardiac surgeons, anesthesiologists, paediatric cardiologists, specialists in internal medicine, etc.) and other professionals with an interest in cardiovascular medicine. There are 11 working groups within the Cardiac Society, one of them is The Cardiac Prevention and Rehabilitation group, led by Docent Seppo Lehto.

The Finnish Heart Association is the oldest heart patient organisation in Europe, founded already in 1955. The Finnish Heart Association consists of regional and local heart societies. The Association aims at supporting primary and secondary prevention by influencing on decision making at different levels, by its own actions and by working together with public healthcare. The present Sectary General is Mrs. Tuija Brax.

IV. Main Prevention activities

Finland has joined the World Health Organization's Global Strategy on Diet, Physical Activity and Health, and participates actively in the Prevention and Control of non-communicable diseases (NCDs). There are several campaigns ongoing, in order to achieve these goals.

Diet and obesity

The National Nutrition Council of Finland has already since 1954 monitored the nutrition and health of Finnish people and issued nutritional recommendations aimed at improving their status. Initially the Council focused on eliminating nutritional deficiencies. In the recent years the main challenge has changed into reducing health problems caused by the overabundant consumption of food or food of the wrong type. The greatest challenges are associated with the prevalence of overweight and type 2 diabetes in both adults and children. The prevention on cardiovascular diseases is also still one of the most important objectives. The National Nutrition Council is an expert body under the Ministry of Agriculture and Forestry. The main aims are to revise general Finnish nutrition recommendations on the basis of the Nordic nutrition recommendations, and to take initiatives and provide statements as well as expert opinions on issues related to nutrition. The recommendations are renewed every eight years. In January 2018, the national nutritional recommendations for children were also published.

The Nutrition Commitment is a Finnish operating model, which helps and encourages food business operators and stakeholders to improve the nutritional quality of the Finnish diet and to encourage nutritionally responsible practices. The vision is that in 2020, everybody in Finland can have a diet that is in accordance with the food based dietary guidelines.

The Heart Symbol, a system including a front-of-page logo was developed and launched jointly by Finnish Heart Association and Finnish Diabetes Association in the year 2000. The Heart Symbol tells the consumer that the product marked with this symbol is a better choice in its product group regarding fat and sodium. In some products, also sugar and fibre contents are taken into account. The criteria for the symbol are based on the Finnish nutrition recommendations. The Heart Symbol is very well known. According to the latest survey, brand awareness was 81,9% among population. Total amount of different products is over 1200, and restaurants serving Heart Symbol meals are over 300.

The Finnish Heart Association has developed a program called "**Smart family**" to promote the health of families with children. The Smart Family method can be used with families as part of counselling at maternity and child welfare clinics and in elementary school healthcare across Finland. Almost all Finnish municipalities use this method, which is based on international and national recommendations. The tool offers healthcare professionals an opportunity to observe the health habits of families in a way that activates the family.

At Finnish schools and educational institutions, students are offered a free, versatile and balanced meal every day. The Finnish National Board of Education has made a brochure

about the school meal system in Finland, including **recommendations for school meals**.

The National Obesity Programme 2012-2018, co-ordinated by The National Institute for Health and Welfare, aims at achieving a downward trend in the obesity in order to improve health and welfare. The programme targets are attained primarily by means of nutrition and physical activity. Key actors and partners include municipalities, health services, schools, child day care, sports, community planning, the defence forces, public health organisations, the food industry, the trade, catering service providers, research institutes as well as media.

All five Finnish University Hospitals have created together a shared internet page, which is part of the just released digital service called "Virtual Hospital". This part is called "The Weight Control House", which is one of the most popular sites of the service.

Tobacco

Finland has been a pioneer in tobacco policy since 1976, when the Tobacco Act was introduced in the Finnish Parliament. The latest renewal of the Tobacco Act was made in May 2016. The purpose of the Tobacco Act is now to end the use of tobacco and nicotine products. The aim is to reach a tobacco and nicotine free Finland by 2030. (Finlex: Tobacco Act)

Smoking has been prohibited in restaurants since 2007. Cigarette packages are covered with pictorial health warnings. Tobacco products have not been allowed to be presented in shops since 2012 and selling to minors is naturally prohibited. There is a possibility for condominiums to restrict smoking on the balconies by law. Smoking is also prohibited in private cars when children are present.

Flavors, such as menthol, which might hide the taste of tobacco, will be prohibited by 2020.
Smoking is prohibited in workplaces. In addition, many corporations have made many supporting actions. An example UPM, which is one of the largest forest-based bioindustry companies in the world, ended smoking in all UPM sites in Finland in 2013. All smoking points were also removed. For helping their workers, the occupational health unit offered supporting actions, even free medication for weaning from the addiction to tobacco.

E-cigarettes will be treated as regular cigarettes. It is forbidden to sell snus in Finland.
Along with many restrictions, it is also important to continue health education, which is an important part of the Tobacco Act. Health education is fulfilled effectively by health care professionals, organisations, schools and media.

Alcohol

Regrettably, in December 2017 the Finnish Parliament reformed the Alcohol Act in an unfavorable way. Against the advice by the Social and Health Committee, alcohol sales were liberated. It is now allowed to sell 5,5% alcohol products in local stores, gas stations and kiosks. It is predicted, that the total alcohol consumption will rise in Finland, and as a result, the amount of alcohol based diseases and mortality will increase.

Physical activity

Many organisations are working together for helping people to understand the importance of regular exercise. One of them is UKK Institute (named after former Finnish President Urho Kaleva Kekkonen), whose aim is to promote physical activity through research, training and communication. The other organisation with its more than 80 000 members is Suomen Latu, the Outdoor Association of Finland which is a promoter of outdoor activities.

The Ministry of Social Affairs and Health released a report "On the move – national strategy for physical activity promoting health and wellbeing" in 2013. The four key messages were: reducing sitting in daily life, increasing physical activity in the course of life, highlighting physical activity as a vital element in enhancing health, prevention and treatment of diseases and in rehabilitation, and strengthening the status of physical activity in Finnish society. The Ministry of Education and Culture has just released the Report on Sports Policy (2018).

National Guidelines on Physical Activity were published in January 2016. This document collects guidelines on both primary and secondary prevention. The Physiotherapy guidelines include the physical rehabilitation of coronary artery disease patient.

References

https://www.evira.fi/en/foodstuff/healthy-diet/nutrition-commitment/

https://www.sydanmerkki.fi/en/

https://thl.fi/en/web/thlfi-en/research-and-expertwork/projects-and-programmes/the-national-obesity-programme-2012-2015

https://thl.fi/en/web/alcohol-tobacco-and-addictions/tobacco/electronic-cigarettes

http://www.finlex.fi/en/laki/kaannokset/1976/en19760693

V. Cardiac Rehabilitation (CR)

There are several ways to accomplish cardiac rehabilitation in Finland. The Social Insurance Institution organises courses, which are totally reimbursed for patients. For this type of rehabilitation, a referral is mandatory.

The Finnish Heart Association has developed a group-based rehabilitation program called TULPPA ("a clot" in English). The Association offers education for local professionals and produces the material for patients. The program is carried out by local professionals at heath centers. This means that the patients can participate for free, and without a special referral. This rehabilitation is outpatient -type and consists of 10-12 meetings with one follow-up meeting after 6 months. Unfortunately, this operating model is not in use in every part of the country at the moment.

The regional units of the Heart Association are also organising rehabilitation courses, typically during weekends. These courses are funded by the Funding Centre for Social Welfare and Health Organizations (STEA), who in turn delivers the funding from the gaming revenue of Veikkaus Oy.

There are many private providers for physical rehabilitation of coronary artery disease patients. The selection varies locally. Patients pay for these programs by themselves. Some local units of the Finnish Heart Association also organise physical rehabilitation, at low cost.

Along with individual management and rehabilitation groups, internet-based systems like chat-service are being developed.

Cardiac rehabilitation should be recommended for every patient. Unfortunately, because of the lack of coordination between secondary and primary care, many patients are "lost" after discharge, and they are never introduced to rehabilitation programmes unless they happen to be active individuals by themselves. It is estimated, that only about 10% of patients do attend cardiac rehabilitation.

The Finnish health care system is under a huge reform, and one aim is to include cardiac rehabilitation as a mandatory part of the health care chain of cardiac patients. However, there are many questions to be solved; the coordination of the rehabilitation being one of them

VI. The Future

Wide-ranging health care reforms are being proposed in Finland. The aims are to improve the equity, access and effectiveness of health and social care services while ensuring efficiency gains and containing costs. The main changes include transferring responsibility for the organisation and provision of health and social care services from municipalities to 18 regional governments (counties), expected to be established in 2020. Financing would still be fulfilled by general taxation, but the system will be changed from multi-payer towards single-payer system. Providing competition, extending freedom of choice, strengthening service integration and continuity of care, and centralising emergency care and certain specialist services are also actions that are expected to curb the expenditure growth. The proposed timelines for implementing these reforms have been postponed several times, given the complexities of the changes involved.

One important challenge is to strengthen access to and efficiency in primary care and promote greater coordination among primary care providers and hospitals. To promote greater care coordination, Finland has invested substantially in eHealth. It introduced a nationwide harmonised electronic patient record, the national Patient Data Repository (referred to as KANTA). This information system includes all public and private health care providers, electronic prescription and a health portal allowing citizens to review their own information.

Many behavioural risk factors are much more prevalent among populations with lower income or education. Smoking is almost twice as high among population with the lowest level of education. The obesity rate is over 50% higher as well compared to those with the highest level of education. This higher prevalence of risk factors among disadvantaged groups contributes greatly to disparities in health status. More tools are needed in order to diminish this social inequality in health.