POLICY BRIEF
9/2020

VALTIONEUVOSTON
SELVITYS- JA TUTKIMUSTOIMINTA

Perspectives into topical issues in society and ways to support political decision-making

Future savings are accomplished today – focus on food environment of children and adolescents

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The food environment of children and adolescents is shaped by adults and they are responsible for the dietary habits it brings about

Food environments are defined as the collective physical, economic, policy and sociocultural surroundings, opportunities and conditions that influence people's food and beverage choices and nutritional status. The food environment should make it easy and appealing for every child, adolescent and family to make food choices of high nutritional quality and to adopt dietary habits supportive of wellbeing and health. We have the information and tools necessary to promote the food environment of children and adolescents. What we need now is action to put these into practice.

The project, implemented within the Government's analysis, assessment and research activities, outlined the current status of the food environment of Finnish children and adolescents and actions implemented to improve it, developed methods to monitor the nutrition of children and adolescents and to assess the cost impacts of food environment policy actions, and prepared policy recommendations for shaping a healthy food environment.

- The current food environment does not protect children from energy-dense foods of poor nutritional quality or messages encouraging the consumption of such foods, nor does it support health-promoting choices like it could – and should.
- Digital tools can be used effectively to monitor the nutrition of children and adolescents, and the monitoring data can be drawn on for individual lifestyle counselling and knowledge-based management both regionally and nationally.
- Health economics modelling allows assessment of the cost impacts of actions addressing the food environment. Societal investments in the prevention of obesity can deliver up to a seven-fold return on investment.
- Adults can impact on the food environment of children and adolescents and take action to make food choices conducive to growth, wellbeing and health affordable, effortless and pleasing for all children and adolescents irrespective of socioeconomic background.

This publication is part of the implementation of the Government Plan for Analysis, Assessment and Research. (www.tietokayttoon.fi/en) The content is the responsibility of the producers of the information and does not necessarily represent the view of the Government.

A FOOD ENVIRONMENT SUPPORTIVE OF HEALTH MAKES SMART CHOICES AFFORDABLE, EFFORTLESS AND ATTRACTIVE FOR EVERYONE

The food environment affects decisions on food and eating, and it may either promote or hamper smart food choices. Repeated choices become customs which define overall eating habits and diet.

Unhealthy dietary habits and food of poor nutritional value form a significant independent risk factor for illness and premature death. In 2017, around 11% of all functional life-years lost due to illness and around 20% of all deaths in the adult population of Finland were due to unhealthy dietary habits, such as scant fruit and vegetable consumption and excessive salt and sugar intake (1, 2).

Food of poor nutritional value is especially harmful to children and adolescents who are still growing and developing. Overweight and obesity are among the most adverse consequences of poor nutrition and they have become an important public health issue also among children and adolescents. A diet conducive to weight gain provides a considerable amount of energy, yet the intake of nutrients vital to health may remain low. This results in a deterioration of nutrition status. Nutrition challenges reported among children and adolescents in Finland include a higher than recommended intake of saturated fats, salt and added sugar and conversely, a lower than recommended intake of fibre, unsaturated fats, vitamin D and iron (3–7). Childhood obesity increases the risk of lifestyle-related diseases (8-11) and it is associated with diminished quality of life and perceived health (12, 13).

Dietary habits begin to form already in the womb. After birth, diet and eating habits as well as attitudes towards food and eating are constructed on the basis of influences received first at home and subsequently in early childhood care and education, school and other living environments. The system of maternity and child health clinics and school healthcare as well as early care and education (ECEC) and schools are tasked with providing support to families in food education and the adoption of smart dietary habits.

The food environment also comprises the food industry, food services providers and retailers, which ultimately determine which foods and meals are available; how, where and when they are provided; how aggressively and in which channels these are marketed; and how much they cost. The messages relating to food and eating conveyed by marketing and the media affect the minds, attitudes and actions of children, adolescents and families. Decision-makers have the power to take or not take decisions that can influence the food environment and thus also the nutrition of children and adolescents.

Finland’s healthcare expenditure in 2017 totalled EUR 20.6 billion (14). While no research data has been published in Finland on the economic impacts of childhood obesity, international studies have found childhood overweight and obesity to increase the use of healthcare services and the costs of healthcare in adulthood (15–19). The productivity costs relating to reduced capacity to function and work as a result of obesity are moreover estimated to exceed the costs of treatment many times over (20). Based on international estimates, investment in the prevention of obesity could deliver a return many times over the original outlay (21).

Datasets and methods

The project was implemented by a multidisciplinary research group from VTT Technical Research Centre of Finland and the University of Eastern Finland drawing on expertise in the fields of nutrition, medicine, health economics, organisational research and computer science.

The current status of the food environment of children was outlined by means of stakeholder analysis, themed interviews of identified key actors, workshops and literature review. The set of indicators and operating model developed to assess and monitor the nutrition of children are mainly based on the most recent Finnish nutrition recommendations and the findings of three Finnish long-running and extensive studies on the associations between nutrition factors and chronic disease risk factors (Physical Activity and Nutrition in Children, PANIC; Special Turku Coronary Risk Factor Intervention Project, STRIP; and Cardiovascular Risk in Young Finns, LASERI). The development of the calculation model for assessing cost impacts was based on a health economics analysis and the policy actions examined were determined on the basis of the OECD report (21). The work on the policy recommendations made use of the datasets accumulated at the outlining stage, research literature and assessments of the cost impacts of the actions.

Findings and conclusions

Food environment of children and adolescents in Finland: current status, actors and future vision

- Children have the right to the best possible health as well as particular protection and care. These rights are recognised by all UN contracting states.

- Evidence-based recommendations, tools and operating models for numerous actors of the food environment are available for promoting children's food environment, nutrition and food education, but these have been introduced to a varying extent. Regulatory potential, such as taxation and marketing guidance, is not fully utilised to enhance the food environment.

- No up-to-date and inclusive data on the dietary habits, nutrient intake and relationship to food of children and adolescents in Finland is available.

- The key actors in the food environment of children and adolescents in Finland are families; early childhood education and care and schools as well as their food services; maternity and child health clinics and school healthcare; the food industry, food service providers and retail; marketing and the media; and decision-makers. All actors interact with and influence each other.

- Guardians play a key role in building the food environment of children and adolescents, and their actions may influence the other actors. The guardians' nutrition awareness and cooking skills, psychosocial and financial resources, and the hustle and bustle of everyday family life all play a role in the food environment of the home. These factors relating to guardians put children on an unequal footing.

- Children and families have the right under law to obtain the necessary health counselling services, yet the dietary counselling resources of public healthcare are insufficient for the task. In order to ensure the standard of dietary counselling,

professionals should be provided with ongoing support in maintaining their expertise in dietary and lifestyle counselling.

- The recommended meal and food education provision in early childhood education and care and at schools is accomplished varyingly despite mass catering being a prime tool to narrow the gaps arising from socioeconomic background.

- The food offering on the market is wider than ever, yet the range of products consistent with recommendations in terms of nutrition quality is limited. The product ranges of supermarkets and restaurants are determined on the basis of sales, while consumer choices are mainly governed by price and taste. Responsible nutrition actors – commercial ones included – should cater for the healthy nutrition of children and adolescents in their offering and communications alike.

- Digital services have made food and eating-related communications ubiquitous. It is challenging for children in particular to identify commercial communications in the flood of information. While legislation and recommendations on the marketing of food provide guidelines on the identifiability of marketing to children and compliance with fair trading practices, they take no stand on the quality of the foods marketed to children and adolescents.

- A makeover of the food environment in a healthier direction is hampered by administrative silos and political differences. If change is to be accomplished, decision-makers must understand the effect of the food environment on choice of food, consumption and health so that a supra-administrative political strategic intent to create a food environment supportive of the health of children and adolescents can be adopted.

Figure 1 presents a vision for a food environment supportive of the health of children and adolescents.

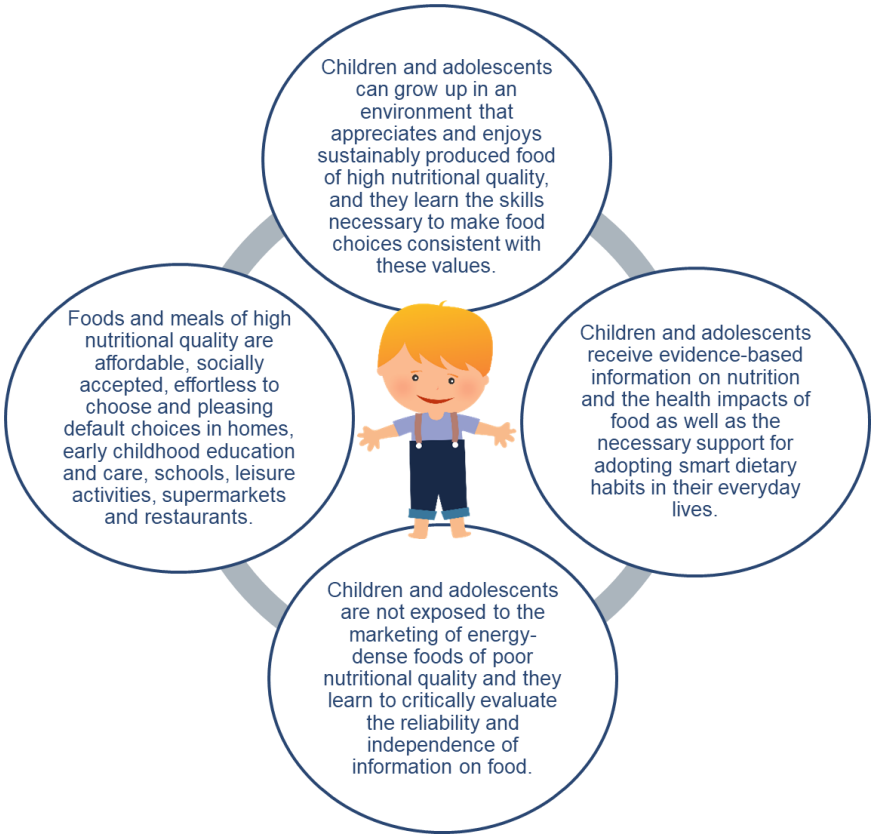

Figure 1. Vision for a food environment supportive of the health of children and adolescents

Tools for monitoring the nutrition of children and adolescents

The nutrition of children and adolescents in Finland is not as systematically monitored as that of adults. Information is needed on children and adolescents' dietary habits, food and nutrient intake and relationship to food and eating to allow the timely implementation of actions to promote these and the prompt assessment of impacts of the actions implemented. Nutrition data should be collected at regular intervals from all children and adolescents in certain age groups.

The project developed a digital tool and operating model to enable the easier and more cost-effective measuring and monitoring in healthcare of the key elements of the nutrition of children and adolescents. The tool and approach were tested on a small scale in the context of school entry medical examinations and fourth-year medical examinations at maternity and child health clinics. The tool and model will be validated and tested among a larger group of children to allow their wider adoption, which in turn would allow families to be provided with individualised feedback on the dietary habits of children and adolescents. Those at risk of chronic diseases and in need of nutritional counselling could also better be identified in healthcare. Further evolution of the national Kanta service, as well as regional biobanks and data pools, would allow the data on the nutrition of children and adolescents accumulated in school healthcare and maternity and child health clinics to be combined with other healthcare data obtained from a variety of sources, which is supportive of research and knowledge-based management.

Actions to improve the food environment of children and adolescents can deliver significant savings

The project modelled the cost impacts, in the Finnish frame of refence, of five child and adolescent food environment policy actions determined by the OECD. The actions modelled were: 1) food labelling (directed at children aged 5 and over), 2) menu labelling (aged 5 and over), 3) physical activity and diet schemes at schools (aged 8 and over), 4) regulation of marketing of food to children (aged 5–12 or over 12), and 5) new technologies such as mobile apps (aged 12 and over). The long-term potential for savings deliverable by these policy actions, based on the models, is summarised in **Figure 2**. The horizontal blue dash line depicts the break-even point where the savings accruing from the implementation of the policy action may be expected to have covered the investment required for its implementation and after which the policy action starts to deliver actual savings.

Policy actions in the food environment of children and adolescents can deliver significant savings in health expenditure in the long term.

The investment required to introduce menu labelling, for example, could be recouped in less than ten years. This same policy action could potentially, in the long term, deliver savings of more than EUR 120 million in healthcare expenditure. The OECD effectiveness estimates, viewed in the Finnish perspective, demonstrate that policy actions in the food environment of children and adolescents can deliver significant savings in health expenditure.

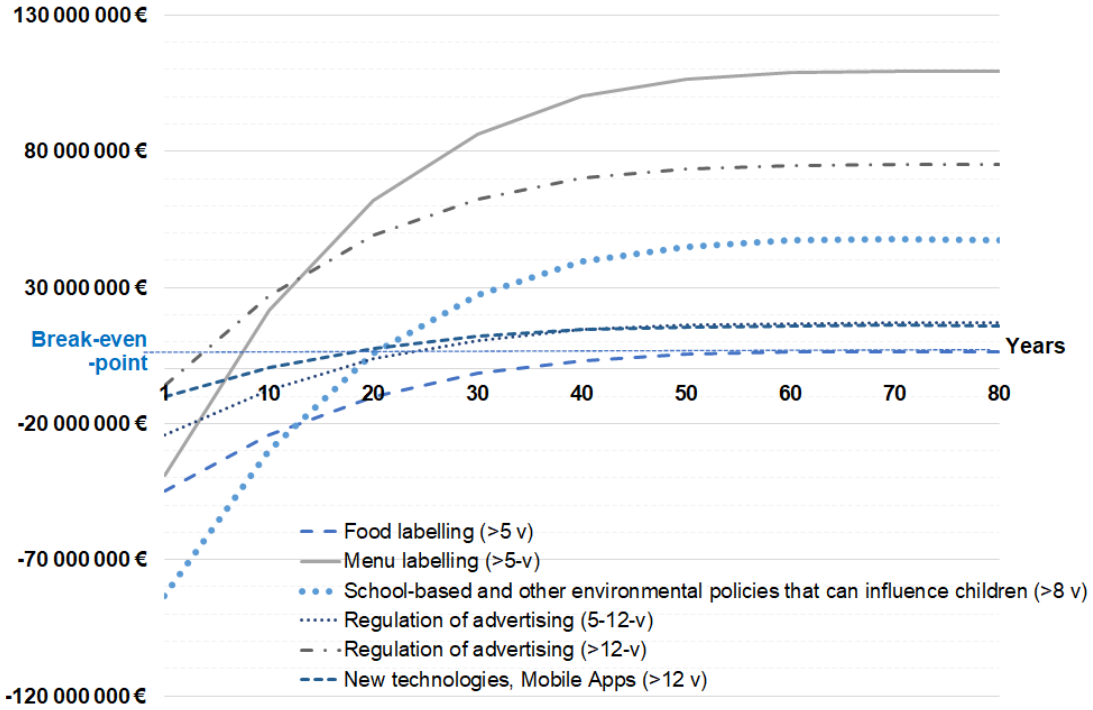

Figure 2. Potential long-term savings in healthcare expenses, assessed in the Finnish frame of reference, accruing from the child and adolescent food environment policy recommendations of the OECD report (21).

Policy recommendations for building a food environment supportive of the health and wellbeing of children and adolescents

The focus in improving the food environment of children and adolescents should be on actions which reach the entire population and the effectiveness of which to a lesser extent depends on the skills, knowledge and active reflection of individuals. Such actions can reduce health inequality. **Table 1** provides a summary of the eleven sets of policy recommendations prepared within the project that can help move towards a food environment that is supportive of the health and wellbeing of children and adolescents. The first two sets of recommendations are intended as an aid in the implementation, monitoring and effectiveness assessment of actions to improve the food environment. The remaining sets of recommendations focus on improving the food environment *per se*. More detailed descriptions as well as the reasoning behind the recommendations are provided in the final project report (see **Further reading**).

Table 1. Summary of sets of policy recommendations proposed to build a food environment supportive of the wellbeing and health of children and adolescents

Policy recommendation	Description	Parties responsible
Action to aid the implementation, monitoring and assessment of policy recommendations to improve the food environment		
1. Nutrition profile	Utilising nutrition profiles to guide policy actions, such as health-based taxation, marketing to children and procurement of food services	Ministry of Finance, Ministry of Transport and Communications, local government decision-makers, procuring entities
2. Child and adolescent nutrition monitoring	Launching comprehensive and regular monitoring of the nutrition of children and adolescents	Ministry of Social Affairs and Health, research institutes, local government decision-makers, basic healthcare
Action to improve the food environment		
3. Price guidance	Using health-based taxation to guide food choices	Ministry of Finance
4. Guidance of marketing	Protecting children and adolescents from the marketing of foods of poor nutritional quality by means of regulation and updated recommendations	Ministry of Transport and Communications, Ministry of Economic Affairs and Employment, Consumer Ombudsman, research institutes
5. Guidance of selections and displays	Focusing on the selection, visibility and ease of choice of options of high nutritional quality in supermarkets and food services by means of an implementation programme of the nutrition commitment approach and by preparing recommendations for a choice environment that nudges towards smarter choices	Ministry of Social Affairs and Health, Ministry of Agriculture and Forestry, National Nutrition Council, food industry, food service providers, retail
6. Ensuring nutritional quality of meals served in ECEC and schools	Incorporating a nutritional quality module in Oiva food control inspections, adopting the nutritional quality criteria of recommendations (22–24) to guide procurement in food services, and utilising the EU school scheme (25) in the procurement of dairy products, fruit and vegetables	Ministry of Agriculture and Forestry, Finnish Food Authority, local government decision-makers, procuring entities, ECEC organisers, schools
7. Other provision of food in schools	Ensuring the nutritional quality of foods and snacks sold in schools	Local government decision-makers, schools
8. Provision of food in leisure activities and the immediate environs of schools	Attending to the nutritional quality of the food offerings in municipal leisure settings and the immediate environs of schools	Local government decision-makers
9. Nutrition labelling	Supporting smart food choices with labelling on the nutritional quality of the food	Ministry of Social Affairs and Health, Ministry of Agriculture and Forestry, National Nutrition Council
10. Food education	Ensuring the standard of food education in early childhood education and care and in schools by strengthening instruction in food education in the basic and continuing education of ECEC instructors, teachers and food service workers, and by recording food education objectives in local curricula and municipal wellbeing plans as well as objective achievement in the wellbeing reports of municipalities	Ministry of Education and Culture, Finnish National Agency for Education, higher education institutions, vocational education institutions, local government decision-makers
11. Inter-administrative approach and nutrition guidance in municipalities	Improving inter-administrative cooperation and the availability of nutrition guidance in municipalities by organising regional planning, coordination and monitoring of the promotion of food environment and nutrition promotion, and by strengthening instruction in nutrition in the basic and continuing education of healthcare professionals.	Local government decision-makers, Ministry of Education and Culture, Finnish National Agency for Education, higher education institutions

Further reading

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Further information: **https://www3.uef.fi/en/web/biomedicine/timo-lakka-group**
Physical Activity and Nutrition in Children (PANIC) study: **www.panicstudy.fi**
Stop Diabetes (StopDia) study: **https://www3.uef.fi/en/web/stopdia**

The project *From a world of temptations to a healthy food environment for children – driven by inter-administrative approaches (TERRA)* is part of the implementation of the 2019 Government plan for analysis, assessment and research.

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