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Science & Technology in childhood Obesity Policy**



Science and Technology in  
childhood Obesity Policy

# Science & Technology in childhood Obesity Policy

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## D:11.7 Practice abstracts

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### Dissemination Level

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## 1 Introduction

This document is a compilation of the second batch of Practice Abstracts for the STOP Project.

Practice abstracts are a requirement of all Horizon 2020 funded projects. They aim to provide the end-users of the project with short and concise practice information. The individual abstracts are meant to outline the main findings of a specific aspect of the project and make it easy to share our findings with those who will apply them. Within the context of the STOP Project, end-users include health professionals such as scientists, public health workers, health promotion specialists and public health nutritionist or fitness industry workers; policymakers and non-governmental organisations; and the public including parents, adolescents and young people.

The practice abstracts will be shared at the EU-level following the “EIP common format” which is made available on the EIP-AGRI website. All partners from the Consortium are involved and contribute to the production of these abstracts. Each abstract includes a short and understandable title, a succinct summary of the issue tackled as well as a presentation of the main outcomes and recommendations on a selected topic. When available, these will be shared in English as well as the language of the partner or work package in charge of a specific practice abstract.

The first batch of practice abstracts were submitted in 2020.

## 2 Practice Abstracts

### 2.1 Practice abstract 1

Title: Assessment of the potential impacts of new fiscal policies on added sugar in Europe\*

\*Practice abstract available in French on the EIP-Agri website

Short summary for practitioners:

The consumption of added sugars by children in the Western world contributes to more than 10% of the total daily energy intake recommended by the World Health Organization. The excessive consumption of added sugars is associated with obesity and type 2 diabetes. To address these public health issues, public health authorities have implemented or envisage to tax food products that contribute the most to the sugar intake of children and adolescents. The main objective of this study was to assess and compare the effects of several hypothetical tax designs on individuals' sugar purchases from non-alcoholic beverages and biscuits.

To achieve our main objective, we used grocery purchase data recorded by French, Spanish, and UK households in 2017. We evaluated the potential effects of each soft drink tax in force in France, the UK and Catalonia (Spain). For the biscuits market, we have proposed tax designs replicating the three soft drink tax designs implemented in the UK, France, and Catalonia, but tailored to the distribution of the sugar content and prices of biscuits observed in each of the three markets. All simulated taxes had a tiered design based on product sugar concentration.

We found that raising the tax rates reduced sugar purchases. These reductions were larger among more price-sensitive households and are even more important as the proportion of purchases of products taxed at each threshold is high. These results highlight the potential public health benefit of taxing 'unhealthy' food categories consumed in excess, particularly where households are the most price sensitive. This work also showed that it is important to carefully choose the levels of tax



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For more information, visit [www.stopchildobesity.eu](http://www.stopchildobesity.eu)

## 2.2 Practice abstract 2

### Title:

Prenatal exposure to antibiotics and risk of childhood overweight or obesity\*

\*Practice Abstract also available in Spanish on the EIP-Agri website

### Short summary for practitioners:

Infant antibiotic use has been modestly associated with childhood overweight or obesity, while evidence on prenatal exposures remains less clear. It is speculated that antibiotic exposure during pregnancy may alter the development of the microbiome, which may inflict lifelong metabolic consequences. To date, few studies have been published on this topic, yielding mixed results according to the period of exposure, number of courses, and type of antibiotic. We aimed to summarise evidence on exposure to antibiotics during pregnancy and subsequent childhood overweight or obesity to clarify this association.

We conducted a systematic review of observational studies published up to December 2019. Ten studies were relevant and included in the analysis. We did not observe a clear pattern of association between prenatal antibiotic use and childhood overweight/obesity. There were suggestive associations for repeated exposures (3 or more courses) and those taking place during the second trimester of gestation, which were also pointed out in our study. In most studies, however, confounding by underlying infections cannot be ruled out. Overall, current data do not conclusively support that prenatal exposure to antibiotics is a risk factor for childhood obesity/overweight. Further studies, controlling for underlying infections and exploring the association according to frequency, period (both prenatal and intrapartum) and type of antibiotic, are needed to clarify this association.

Learn more [here](#).

## 2.3 Practice abstract 3

### Title:

Consumption of ultra-processed food is associated with dietary nutrient profiles linked with obesity in children aged 2 to 19 years: evidence from 8 countries

### Short summary for practitioners:

Ultra-processed foods (UPFs) are formulations of food substances with little if any whole food, which typically contains added flavours, colours, and other cosmetic additives. They are particularly high in energy density and free sugars, and low in dietary fibre—dietary characteristics of public health concern that are linked to obesity.

In the current study, data from nationally representative dietary surveys conducted between 2004-2014 was used to assess the association between UPF consumption and dietary nutrient profiles associated with obesity of children and adolescents between 2-19 years old.



Across all age groups, UPFs accounted for 18% and 25% of all calories consumed by Brazilian and Colombian children, and between 27% - 44% of calories in Argentinian, Mexican, and Chilean children. For children in non-Latin American countries (Australia, the UK, and the US), 47% to 68% of all calories came from UPF in all age groups. An increase in UPF was associated with increases in energy density and free sugars and decreases in fibre. However, no significant associations with UPF consumption were observed for free sugars in Colombian pre-schoolers or fibre among British pre-school children.

Results have implications for obesity prevention and treatment efforts. They reinforce the importance of promoting the consumption of minimally processed foods and limiting UPFs among children. Behaviour-change counselling for children could incorporate skills to identify UPFs and understand the consequences of their consumption. Mutually reinforcing policies that disincentivise UPF within the food system and the food environment, with particular emphasis on the school food environments, are needed.

[Read more.](#)

## 2.4 Practice abstract 4

### Title:

Identifying barriers and facilitators to childhood obesity prevention and treatment: Lessons learned.

### Short summary for practitioners:

Many healthcare professionals find it difficult to discuss and manage children's excess weight. Considering this, we conducted two qualitative evaluations with healthcare professionals (paediatricians, specialist doctors, dieticians, and nurses) from Romania and Spain, to further explore the barriers and facilitators to childhood obesity prevention and treatment.

Healthcare professionals perceived that excess weight in children was difficult for families to notice and act upon, suggesting this was a key reason for families' low levels of engagement with childhood obesity interventions. Furthermore, healthcare professionals observed that families felt motivated to begin treatment when children faced obesity-related stigma or experienced comorbidities. Many of the healthcare professionals interviewed were unsure about childhood obesity referral processes and did not know who had the main responsibility for childhood obesity management. Regardless they were aware that good communication skills were essential for effective childhood obesity treatment. Beyond the individual-level factors, there are systemic factors that hinder childhood obesity treatment, including unstructured referral systems and insufficient allocation of clinical time.

We highlight three considerations for practitioners and stakeholders moving forward:

1. To increase families' engagement with childhood obesity treatment, regional and national stakeholders should invest in public health education about childhood obesity.
2. An overall gentle approach in communication is key to treating children with obesity and building trust with their caregivers.
3. Health care professionals need continuing education on how to discuss childhood obesity with families and how to refer children for specialist treatment.

For more information, visit [www.stopchildobesity.eu](http://www.stopchildobesity.eu)



Title:

Parents' experiences of discussing their preschool-age child's weight in primary care.

Short summary for practitioners:

Primary care settings are key to initiating childhood obesity interventions. Drawing on interviews with 17 parents who took part in a randomised controlled trial for childhood obesity in Stockholm County, Sweden, we explored how parents of young children experienced weight-related conversations with paediatric nurses.

Parents identified weight-related conversations as difficult but important catalysts for lifestyle changes. Parents felt empowered when nurses used a responsive communication style and non-blaming language, with a focus on healthy habits rather than weight. However, when nurses provided generic advice and used alarmist or judgmental language, parents felt disempowered. Parents' reactions to weight-related conversations with nurses were important, as these conversations led to lifestyle changes that entailed emotional and social challenges.

Based on these findings, we recommend that communication skills training, with a focus on childhood obesity, be offered to all paediatric clinicians.

We have also developed the following practical recommendations for paediatric clinicians:

- Structure the conversation as a dialogue: begin by asking parents how they feel about their child's growth and development, and tailor the conversation to their perceptions and understandings. Invite parents to ask questions.
- Consider each family's position: ask parents what they think, how they feel, and how they would like to proceed. Work with their responses to offer personalised advice with a focus on health and wellbeing.
- Use positive language and encouragement: emphasise what parents can do to introduce lifestyle changes, seek further support, and improve their child's weight status and future health.

## 2.6 Practice abstract 6

Title:

School based physical activity programs for the prevention of obesity in children\*

\*Practice abstract also available in Croatian on the EIP-Agri website

Short summary for practitioners:

Alongside building a healthy and balanced diet, the promotion of physical activity (PA) is the cornerstone of obesity prevention strategies. At the same time, schools enable universal reach and represent an ideal setting to target. We conducted a systematic search of the literature to examine the effects of interventions set in schools that targeted sedentary behaviours, PA, or physical fitness on primary prevention of obesity in 6- to 12-year-old children.

Based on 146 studies we found that school-based PA interventions produce small shifts at the population level that can incur significant public health benefits by reducing weight gain in healthy weight children. Equally, these programmes appear to be very safe, with low injury rates being reported. The most effective approach includes combining episodes of PA with educational content to increase knowledge and change attitudes about PA. Programmes that span over at least one



year, include a diet component, involve parents, improve physical fitness, and extend to the home and community setting appear to be the most promising approach. However, raising awareness about the downsides of sedentary behaviour in addition to promoting PA does not provide additional benefits for obesity prevention.

Nevertheless, given the unprecedented increase in exposure to screens faced by children, it is of paramount importance to invest in new, more effective strategies for controlling the time children spend in front of screens. Preliminary evidence points to some inequalities, i.e., lower effectiveness of school based physical activity programs in the prevention of obesity among socially deprived children. Still, as parents of this group of children are very hard to reach, schools should be a focus of public health policies aimed at reducing health inequalities.

For more information, visit [www.stopchildobesity.eu](http://www.stopchildobesity.eu)

## 2.7 Practice abstract 7

### Title:

Setting up the building blocks for an accountability framework

### Short summary for practitioners:

As an intrinsic component of the STOP project, stakeholder engagement with shared decision-making aims to bridge the gap between research, translation, and implementation of new evidence in real-world practice settings. While there is an increasing appetite for a variety of stakeholders to engage in the topic of childhood obesity, it is essential to recognise that some inherent challenges to the stakeholder engagement process exist. To ensure that the work and objectives of the different stakeholders' work is steered towards improving population's health and wellbeing, we need to establish and enforce clear accountability mechanisms while strengthening capacities for engagement and promoting effective participation and joint implementation of priority development actions by different stakeholder groups. Specifically, accountability systems can:

- Be helpful to promote evidence-based outcomes and clarify the necessary tools and processes to support the implementation, management, and evaluation of initiatives.
- Help safeguard against conflicts of interest and ensure the relevant stakeholders hold themselves and others responsible for progress, or lack thereof.

To ensure the positive engagement of stakeholders and their positive influence on public health, three central mechanisms can be identified:

1. Actively engage stakeholders early and across different phases of the research project.
2. Focus on the relationships between different stakeholder groups and establish collaborative and sustained relationships between them.
3. Encourage early and close engagement of the decisionmakers, while acknowledging that differences in power dynamics between and across stakeholder groups might exist.

For more information, visit [www.stopchildobesity.eu](http://www.stopchildobesity.eu)

## 2.8 Practice abstract 8

### Title:

A multicriteria food reformulation approach for children aged 7-12 years old to make a healthier product while maintaining sensory perception and liking: A case study on cookies





### Short summary for practitioners:

In Europe, over 10% of children aged 5-19 are now living with overweight and obesity. Food reformulation is one lever to move toward offering children healthier food. Although faced with many challenges, we aimed to consider food reformulation as a holistic approach and to propose a multicriteria approach to develop healthier chocolate-chip cookies for children, while maintaining sensory perception and liking.

First, we studied the recipe diversity of commercial cookies in France, considering nutrition, composition, economic, water content, and sensory information to identify key opportunities for reformulation. Then, sensory-led formulation of cookies was proposed, based on a mixture design including four key ingredients (sugar, fat, chocolate-chips, oat bran), combined with baking degree factor. Thirty reformulated cookies were thus developed and characterised on multiple criteria, including in vitro glycaemic index or texture evolution. In addition, children's perception, satiation, and liking were evaluated for four of these reformulated cookies. This work led to sensory modelling and recipe optimisation, allowing the creation of healthier recipes with a positive impact on liking and health.

As a main result, this approach led us to propose a possible reduction of the kcal (-5.9%), sugar (-15.9%), fat (-24.7%), and chocolate-chip (-20%) per cookie and increase in oat bran (+49.2%), with also improvement of the calculated glycaemic index (-8.2%). A sustained level of satisfaction was confirmed by children. This multicriteria food reformulation approach might reinforce food reformulation as a promising tool to improve the healthiness of children's diets.

For more information, visit [www.stopchildobesity.eu](http://www.stopchildobesity.eu)

## **2.9 Practice abstract 9**

### Title:

Evaluation of policy implementation across 11 European countries (Food-EPI results)

### Short summary for practitioners:

Food environments influence people's diets. They represent the link between the food system and the population as the physical, economic, policy, and sociocultural surroundings, opportunities, and conditions that influence people's food choices and nutritional status. Government policies have great potential to create healthy food environments to promote healthy diets. We evaluated food environment policy implementation by national governments in European countries and identified priority actions to create healthy food environments.

The study was conducted in eleven European countries: Estonia, Finland, Germany, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Slovenia, and Spain. Finland had the highest percentage (32%) of policies shaping food environments with a high level of implementation compared to international best practices. Slovenia, Italy, and Poland had the highest percentage of policies rated at very low implementation (42%, 42%, and 36% respectively). Policies related to food provision, marketing, retail, funding, monitoring, and health in all policies were identified by experts as the most important gaps across the eleven European countries. In all countries actions in the food prices and food provision policy domains featured among the top five priorities. National expert panels recommended immediate action to:

1. Set standards which limit nutrients of concern in processed foods
2. Improve of school food environments (i.e., implementation of nutrition standards)





3. Subsidise fruit and vegetable subsidies (i.e., a VAT exemption of 0% on fresh fruits and vegetables)
4. Tax unhealthy foods and beverages (i.e., sugar sweetened beverages)
5. Regulate unhealthy food marketing to children. Also, experts recommended the EU to require member states to implement restrictions or bans on (online) marketing on such foods to children and adolescents up to 19 years old.

For more information, visit [www.stopchildobesity.eu](http://www.stopchildobesity.eu)

## 2.10 Practice abstract 10

### Title:

A quasi-experimental field study in Slovenia: which interventions work to improve school food environments?

### Short summary for practitioners:

Schools can be a key setting to implement measures to address childhood obesity. Most European children spend a significant amount of time at school and consume many of their daily calories there. Currently, however, the meals and snacks that school cafeterias offer to kids are unhealthy and contain few fruits and vegetables. A field study (quasi-experimental) is currently underway at two Slovenian schools (one control: one test) to identify optimal ways to encourage and make it easier for children to eat healthier snacks and more vegetables. The design takes a four-pronged approach targeting children, their parents, cafeteria staff, and teachers.

Children in the test school will participate in a MasterChef-style competition for snack-making and bring home recipe cards to their parents. Parents will also receive weekly electronic newsletters with additional recipes and other tips for healthy eating. Cafeteria staff will start serving more salads and attractive vegetables, and as the MasterChef competition progresses, start including winning snack recipes on trays. Teachers have been encouraged to ask children to eat their lunches during a COVID-shortened lunch break rather than playing and socialising. None of these interventions will occur at the control school.

Pre-and post-measurements will take place at both schools, and it is hoped that the results from the test school will show attitudinal improvements over the control school. That is, we hope that children in the test school will have more positive attitudes to healthy snacks and eating more vegetables. Findings from this study will inform public health policies related to school-based interventions to improve children's dietary intake.

For more information, visit [www.stopchildobesity.eu](http://www.stopchildobesity.eu)

## 2.11 Practice abstract 11

### Title:

The cost-effectiveness and role of physical education on the prevention and treatment of childhood obesity \*

\*Practice abstract also available in Slovenian on the EIP-Agri website



### Short summary for practitioners:

School-based physical activity interventions have been verified as an effective strategy in the primary prevention of childhood obesity and Physical Education (PE) is the cornerstone of physical activity policies in schools. We calculated the costs and effects of a real-world, nationwide, physical activity intervention that delivered 2-3 extra hours of PE to 6-14-year-old Slovenian children over 8 years. In addition, we examined the barriers to transferability of PE to 5 different settings across Europe (Estonia, Finland, Italy, Portugal, and Spain). We found that additional PE contributes to a smaller increase in Body Mass Index (BMI) at a cost between €123.97 and €773.82 per BMI unit reduced. In parallel with the growing effects on weight, the cost-effectiveness of treating obesity increased considerably after 2 years of participation, reaching optimal levels after 4 years in girls and 5 years in boys and amounting to about €680.33 for one case of obesity averted. Taking into consideration the long-term economic impact of obesity, simulations showed that 5-years of additional PE would provide return on costs after less than 2 months and that all programmes lasting over 2 years would become cost-saving in less than a year. The most prevalent barriers to implementing additional PE are lack of sustainable funding, low perceived importance of PE in the educational system, and inadequate infrastructure for physical activity in schools. Other potentially important barriers include high school workload and the lack of human resources. This research confirms that strategies to improve the quality and provision of PE should be prioritised as a cost-effective solution to improving the health and wellbeing of children across Europe.

For more information, visit [www.stopchildobesity.eu](http://www.stopchildobesity.eu)

## **2.12 Practice abstract 12**

### Title:

Policy brief - Nudges to promote healthy eating in schools

### Short summary for practitioners:

Nudges are small, subtle changes to the physical and social environment that alter the prevailing choice architecture and the context in which decisions are made.

Evidence shows that the implementation of nudge-based interventions can contribute to improving the school food environment and facilitating the selection and consumption of food and beverages that contribute to a healthy diet in children. With or without intervention, there is a prevailing choice architecture already in place. On this basis and given the relatively low cost of implementation, nudges within school food settings to support healthy eating should be instigated to complement other efforts such as school food and nutrition policies and food procurement for healthy diets.

As part of the efforts to support children's nutrition, there is now the opportunity to use nudges for promoting healthy dietary practices in schools and build nutrition-friendly choice architecture in schools across the globe. This policy brief summarises the rationale and evidence around nudges for promoting healthy eating in school settings. It aims to increase awareness of the opportunities for nudges in a school food setting and proposes action points for decision-makers to implement nudges for healthier eating in schools.

For more information, visit [www.stopchildobesity.eu](http://www.stopchildobesity.eu)



## 2.13 Practice abstract 13

### Title:

Policy Brief - Protecting children from the harmful impact of food marketing

### Short summary for practitioners:

To mitigate the harmful impact of food marketing on children, governments are called upon to implement comprehensive policy approaches to restrict the marketing of foods that contribute to an unhealthy diet, to reduce children's exposure to such marketing, and to reduce the power of such marketing, offering the best possible protection to all children. Comprehensive policy approaches have the potential to be sufficiently broad to restrict all forms of food marketing to which children are exposed, including cross-border marketing. Given the increasing concern of digital marketing, and in line with the general comment on children's rights concerning the digital environment, policies to protect children from the harmful impact of food marketing should also include digital marketing restrictions.

This policy brief provides policy-makers and programme managers, health professionals, and advocates with information and policy options to increase the protection of children from the harmful impact of food marketing by reducing the power of, and exposure to children of, such marketing practices.

For more information, visit [www.stopchildobesity.eu](http://www.stopchildobesity.eu)

## 2.14 Practice abstract 14

### Title:

Policy brief - Fiscal policies to promote healthy diets

### Short summary for practitioners:

Price and affordability are two key aspects of food environments that influence dietary decisions, with changes in price influencing consumer demand for many foods and beverages. Based on this rationale, and increasing evidence of their effectiveness, the use of fiscal policies that influence the relative price of foods and beverages (e.g., taxes on foods and beverages that are high in fat, sugars, and/or salt and subsidies on foods that contribute to a healthy diet) has been repeatedly recommended as a policy option to promote healthy diets.

To incentivise the consumption of healthier options and disincentivise the consumption of less healthy options, governments are called upon to implement fiscal policies that promote healthy diets. Policy design elements, such as tax or subsidy bases and rates and tax types, should be carefully considered in the development of fiscal policies to ensure such policies are as effective as possible in promoting healthy diets.

For more information, visit [www.stopchildobesity.eu](http://www.stopchildobesity.eu)

## 2.15 Practice abstract 15

### Title:

Policy brief - Promoting physical activity through schools

### Short summary for practitioners:



Scientific Evidence in  
Childhood Obesity Policy

Integrating physical activity into primary and secondary schools is important so that all children and young people can be physically active regularly, which will contribute to preventing the increasing public health problem of childhood obesity. This policy brief outlines six evidence-based domains for promoting physical activity in schools: 1) Quality physical education; 2) Active travel to and from school; 3) Active before- and after-school programmes; 4) Opportunities during recess to encourage physical activity; 5) Active classrooms, and 6) Inclusive approaches to physical activity.

This policy brief supports school policymakers, planners, and potentially school principals and describes how the school environment can be used to develop, implement, and evaluate whole-of-school strategies that promote physical activity and reduce sedentary behaviour among children and young people. A whole-of-school approach needs to partner with parents and the community to ensure that safe and accessible physical activity opportunities are extended to all children.

For more information, visit [www.stopchildobesity.eu](http://www.stopchildobesity.eu)