This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 774548.

EC Framework Programme for Research and Innovation

Horizon 2020

H2020-SFS-2017-2-RIA-774548-STOP:

Science & Technology in childhood Obesity Policy

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Start date of project: 1st June 2018 Duration: 54 months

D11.5 Evidence of scientific output

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Version: Version 3

Preparation date: 13/04/2023

Science and Technology in childhood Obesity Policy

Abbreviation	Definition
W P	Work Package

Dissemination Level

PU	Public	☒
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Science and Technology in childhood Obesity Policy

Table of contents

1. Introduction

The STOP project (2018-2022) generated scientifically sound, novel and policy relevant evidence on the factors that have contributed to the spread of childhood obesity in European countries and on the effects of alternative technological and organisational solutions to address the problem.

The STOP project was structured around ten work packages. WP2 to WP10 were research themes. WP1 was project management and WP11 was dissemination (figure 1).

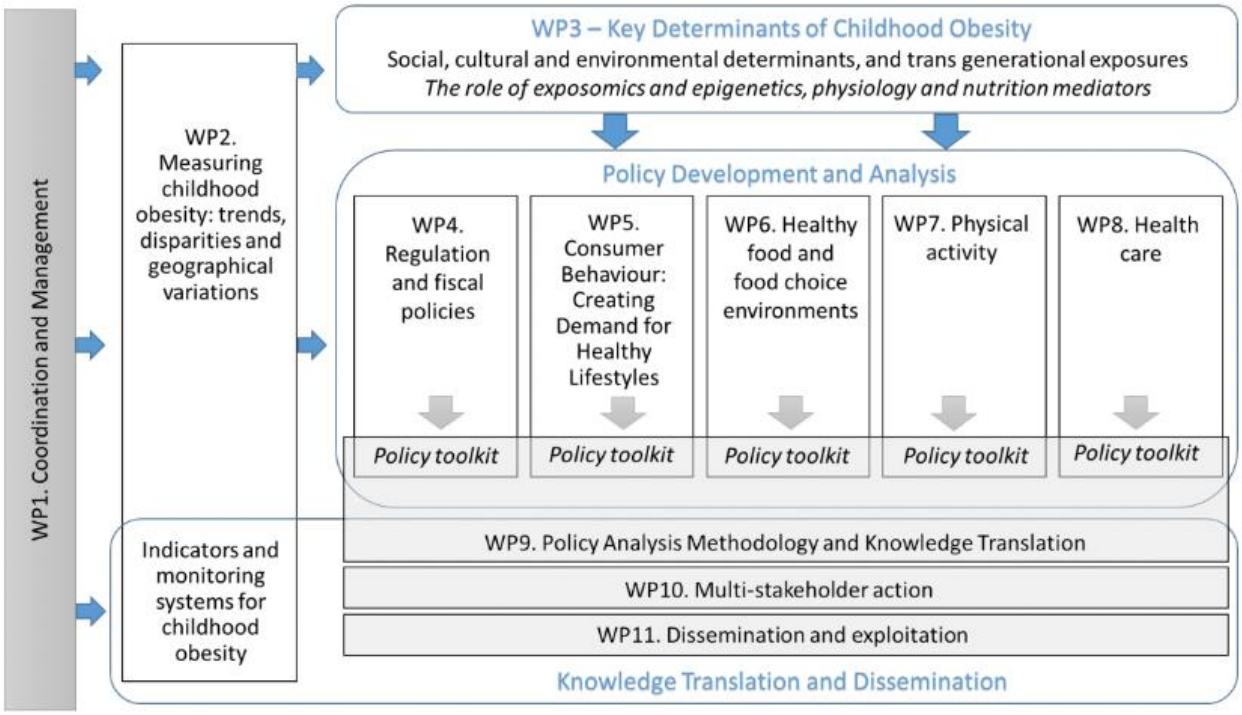

Figure 1. STOP Work package structure and main links between WPs

Deliverable 11.5 provides evidence of the scientific output of the STOP project, focusing on the scientific publications. The internal procedures relating to publication proposals and processes are described in Deliverables D11.1 (DEC Strategy) and Deliverable D11.6 (IP Strategy). A public list of publications is maintained by the project and publications are listed on the project website once they are published.

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2. Scientific Publications

Below we list the scientific publications that have been published by the STOP Project, organised by year and work package. At the end a list of further publications which are under review or due for submission are also listed. This list is correct as of 13th April 2023. A complete and updated list can be found at http://www.stopchildobesity.eu/stop-publications/.

Special issue 1

Special issue 1, published in 2021 in Obesity Reviews, included a series of systematic reviews from work packages 4-8.

Chambers, T, Sassi, F. Supplement: policies for preventing and treating obesity in childhood. *Obesity Reviews*, Vol. 22, Issue 2 (February 2021)

- Branca, F., Chambers, T., Sassi, F. How to tackle childhood obesity? Evidence and policy implications from a STOP series of systematic reviews. *Obesity Reviews*. 2021. 22(2) doi: 10.1111/obr.13181.

- Lobstein, T. Neveux, M., Brown, T. et al. Social disparities in obesity treatment for children age 3-10 years: A systematic review. *Obesity Reviews*. 2021. 22(2) doi: 10.1111/obr.13153

- Podnar, H., Jurić, P., Karuc, J. et al. Comparative effectiveness of school-based interventions targeting physical activity, physical fitness or sedentary behaviour on obesity prevention in 6- to 12-year-old children: A systematic review and meta-analysis. *Obesity Reviews*. 2021. 22(2) https://doi.org/10.1111/obr.13160

- Gressier M, Swinburn B, Frost G. What is the impact of food reformulation on individuals' behaviour, nutrition intakes and health status? A systematic review of empirical evidence. *Obesity Reviews.* 2021. 22(2) doi: 10.1111/obr.13139

- Chambers, T., Segal, A., Sassi, F. Interventions using behavioural insights to influence children's diet-related outcomes: A systematic review. *Obesity Reviews*. 2021. 22(2) https://doi.org/10.1111/obr.13152

- Pineda, E., Bascunan, J., Sassi, F. Improving the school food environment for the prevention of childhood obesity: What works and what doesn't. *Obesity Reviews*. 2021. 22(2) https://doi.org/10.1111/obr.13176.

Special issue 2

Special issue 2, published in 2022 in Obesity Reviews, focused on the determinants of childhood obesity. This special issue was an ancillary endeavour to the STOP project requiring no additional STOP funding. It involved a number of STOP investigators and external collaborators who came together and authored papers based on by-products of the research undertaken in STOP. This is reflected in the acknowledgments of each paper. The papers included in this special issue are listed below:

Tur A J, Sassi F, Martinez, A J Special Issue: Determinants of Childhood Obesity*. Obesity Reviews*, Vol. 23, Issue 1 (January 2022)

- Tur JA, Martinez JA. Guide and advances on childhood obesity determinants: Setting the research agenda. *Obesity Reviews*. 2022;23(S1). doi:10.1111/obr.13379.

- Martín-Calvo N, Goni L, Tur JA, Martínez JA. Low birth weight and small for gestational age are associated with complications of childhood and adolescence obesity: Systematic review and meta-analysis. *Obesity Reviews*. 2022;23(S1). doi:10.1111/obr.13380.
- Solans M, Barceló M.A, Morales-Suárez-Varela M et al. Prenatal exposure to antibiotics and risk of childhood overweight or obesity: A systematic review and meta-analysis. *Obesity Reviews.* 2022;23 (S1) doi:10.1111/obr.13381.
- Stratakis, N. Rock S, La Merrill M.A, Saez M et al. Prenatal exposure to persistent organic pollutants and childhood obesity: A systematic review and meta-analysis of human studies. *Obesity Reviews*. 2022;23 (S1) doi: 10.1111/obr.13383.
- Lassale C, Fitó M, Morales-Suárez-Varela M, Moya A, Gómez SF, Schröder H. Mediterranean diet and adiposity in children and adolescents: A systematic review. Obesity Reviews. 2022;23(S1). doi:10.1111/obr.13381.
- Babio N, Becerra-Tomás N, Nishi SK, et al. Total dairy consumption in relation to overweight and obesity in children and adolescents: A systematic review and meta-analysis. *Obesity Reviews*. 2022;23(S1). doi:10.1111/obr.13400
- Neri D, Steele EM, Khandpur N, et al. Ultra processed food consumption and dietary nutrient profiles associated with obesity: A multicountry study of children and adolescents. *Obesity Reviews*. 2022;23(S1). doi:10.1111/obr.13387.
- de Cuevillas B, Milagro FI, Tur JA, et al. Faecal microbiota relationships with childhood obesity: A scoping comprehensive review. *Obesity Reviews*. 2022;23(S1). doi:10.1111/obr.13394.
- Handakas E, Lau CH, Alfano R, et al. A systematic review of metabolomic studies of childhood obesity: State of the evidence for metabolic determinants and consequences. Obesity Reviews. 2022;23(S1). doi:10.1111/obr.13384.
- Malacarne D, Handakas E, Robinson O, et al. The built environment as determinant of childhood obesity: A systematic literature review. *Obesity Reviews*. 2022;23(S1). doi:10.1111/obr.13385.
- Alfano R, Robinson O, Handakas E, Nawrot TS, Vineis P, Plusquin M. Perspectives and challenges of epigenetic determinants of childhood obesity: A systematic review. *Obesity Reviews.* 2022;23(S1). doi:10.1111/obr.13389.
- Martinez JA, Sassi F, Moreno LA, Tur JA. Position guidelines and evidence base concerning determinants of childhood obesity with a European perspective. *Obesity Reviews*. 2022;23(S1). doi:10.1111/obr.13391.

2023

WP2

- NCD-RisC (2023) Diminishing benefits of urban living for children and adolescents' growth and development. *Nature*. 615, 874-883. https://doi.org/10.1038/s41586-023-05772-8

Wp3

- Alfano, R; Zugna, D; Barros, H; et al. Cord blood epigenome-wide meta-analysis in six European-based child cohorts identifies signatures linked to rapid weight growth. *BMC Medicine*. 17. 1741-7015. DOI: 10.1186/s12916-022-02685-7

WP7

- Jurić P, Jurak G, Morrison SA et al. Effectiveness of a population-scaled, school-based physical activity intervention for the prevention of childhood obesity. *Obesity.* 2023; 31(3); 811-822. DOI: 10.1002/oby.23695

2022

WP2

- Sares-Jäske L, Grönqvist A, Mäki P, Tolonen H, Laatikainen T. Family socioeconomic status and childhood adiposity in Europe - A scoping review. *Prev Med (Baltim)*. 2022;160. doi:10.1016/j.ypmed.2022.107095.
- Paalanen, L, Levälahti, E, Mäki, P, Tolonen, H, Sassi F, Ezzati M, and Laatikainen T. Association of socioeconomic position and childhood obesity In Finland: a register-based study. BMJ Open. 2022. 12:e068748. doi: 10.1136/bmjopen-2022-068748

WP3

- Handakas E, Chang K, Khandpur N, et al. Metabolic profiles of ultra-processed food consumption and their role in obesity risk in British children. *Clinical Nutrition*. Published online September 2022. doi:10.1016/j.clnu.2022.09.002 ..
- Fernández-Barrés S, Robinson O, Fossati S, et al. Urban environment and health behaviours in children from six European countries. *Environ Int*. 2022;165. doi:10.1016/j.envint.2022.107319.
- Rosella A, Plusquin M, Robinson O et al. Cord blood metabolites and rapid postnatal growth as multiple mediators in the prenatal propensity to childhood overweight. *International Journal of Obesity*. 2022: 46 (7). doi: 10.1038/s41366-022-01108-0
- Stratakis N, Siskos A P, Papdopoulou E, et al. Urinary metabolic biomarkers of diet quality in European children are associated with metabolic health. *eLife*. 2022. 11 doi: 10.7554/eLife.71332

WP4

- Pineda E, Poelman, M P, Aaspollu A et al. Policy implementation and priorities to create healthy food environments using the Healthy Food Policy Index (Food-EPI): A pooled levelled analyses across eleven countries. The Lancet Regional Health Europe. 2022:23. DOI: https://doi.org/10.1016/j.lanepe.2022.100522h
- Zaçe D, di Pilla A, Silano M, et al. Implementation level of best practice policies by Italian Government for healthier food environments: Healthy Food Environment Policy Index (Food-EPI). *Ann Ist Super Sanita*. 2022;58(1):55-66. doi:10.4415/ANN_22_01_08.

WP6

- Van Dam I, Vandevijvere S. Benchmarking the nutrition-related commitments and practices of major French food companies. *BMC Public Health*. 2022;22(1). doi:10.1186/s12889-022-13780-y.
- Van Dam I, Guillon E, Robinson E, Allais O, Sacks G, Vandevijvere S. Assessment of the Commitments and Performance of the European Food Industry to Improve Population Nutrition. *Int J Public Health*. 2022;67. doi:10.3389/ijph.2022.1604116.
- Van Dam I, Reimes N, Vandevijvere S. Benchmarking the nutrition-related commitments and practices of major Belgian food companies. *International Journal of Behavioural Nutrition and Physical Activity*. 2022:19. doi: 10.1186/s12966-022-01269-1

WP8

- Nowicka P, Ek A, Jurca-Simina IE, et al. Explaining the complex impact of the Covid-19 pandemic on children with overweight and obesity: a comparative ecological analysis of parents' perceptions in three countries. *BMC Public Health*. 2022;22(1). doi:10.1186/s12889-022-13351-1.

- Eli K, Neovius C, Nordin K, Brissman M, Ek A. Parents' experiences following conversations about their young child's weight in the primary health care setting: a study within the STOP project. *BMC Public Health*. 2022;22(1). doi:10.1186/s12889-022-13803-8.

2021

WP1

- Brinsden, H., Neveux, M. The STOP Project: Developing a multidisciplinary evidence-base for effective and sustainable policies to prevent and manage childhood obesity. *Europe and Food. (2021) See here:* https://www.barillacfn.com/m/publications/europe-and-food.pdf

WP3

- Handakas E, Keski-Rahknonen P, Chatzi L et al. Cord blood metabolic signatures predictive of childhood overweight and rapid growth. *International Journal of Obesity*. 2021: 45. DOI 10.1038/s41366-021-00888-1

- Robinson O, Carter A R, Ala-Korpela M et al. Metabolic profiles of socio-economic position: A multi-cohort analysis. *International Journal of Epidemiology*. 2021:50(3). doi: 10.1093/ije/dyaa188

- Chang K, Khandpur N, Neri D, et al. Association between childhood consumption of ultraprocess food and adiposity trajectoris in the Avon Longitudinal Study of Parents and Children Birth Cohort. JAMA Pediatrics. 2021: 175(9). Doi: 10.1001/jamapediatrics.2021.1573

WP6

- Van Dam I, Wood B, Sacks G, Allais O, Vandevijvere S. A detailed mapping of the food industry in the European single market: similarities and differences in market structure across countries and sectors. *International Journal of Behavioural Nutrition and Physical Activity*. 2021;18(1). doi:10.1186/s12966-021-01117-8.

WP8

- Serban CL, Putnoky S, Ek A, Eli K, Nowicka P, Chirita-Emandi A. Making Childhood Obesity a Priority: A Qualitative Study of Healthcare Professionals' Perspectives on Facilitating Communication and Improving Treatment. *Front Public Health*. 2021;9. doi:10.3389/fpubh.2021.652491.

- Argelich E, Alemany ME, Amengual-Miralles B, et al. Paediatric teams in front of childhood obesity: A qualitative study within the STOP project. *Anales de Pediatría (English Edition)*. 2021;95(3):174-185. doi:10.1016/j.anpede.2020.11.004.

WP9

- Rasella D. Developing an Integrated Microsimulation Model for the Impact of Fiscal Policies on Child Health in Europe: The Example of Childhood Obesity in Italy. *BMC Medicine*. 2021. 19. https://doi.org/10.1186/s12916-021-02155-6.

2020

WP2

- Rodriguez-Martinez A, Zhou B, Sophiea M. K. et al. Height and body-mass index trajectories of school-aged children and adolescents from 1985 to 2019 in 200 countries and territories: a pooled analysis of 2181 population-based studies with 65 million participants. *The Lancet*. 2020;396(10261):1511-1524. doi:10.1016/S0140-6736(20)31859-6

- Pizzi C, Richiardi M, Charles MA, et al. Measuring child socio-economic position in birth cohort research: The development of a novel standardized household income indicator. *Int J Environ Res Public Health*. 2020;17(5). doi:10.3390/ijerph17051700.

WP3

- Alfano R, Chadeau-Hyama M, Ghatouse A. et al. A multi-omic analysis of birthweight in newborn cord blood reveals new underlying mechanisms related to cholesterol metabolism. *Metabolism*. 2020. 110. doi: 10.1016/j.metabol.2020.154292

- Isaevska E, Popovic M, Pizzi C, et al. Maternal antibiotic use and vaginal infections in the third trimester of pregnancy and the risk of obesity in preschool children. *Pediatr Obes*. 2020;15(8). doi:10.1111/ijpo.12632.

- Cox B, Luyten LJ, Dockx Y, et al. Association Between Maternal Prepregnancy Body Mass Index and Anthropometric Parameters, Blood Pressure, and Retinal Microvasculature in Children Aged 4 to 6 Years. *JAMA Netw Open*. 2020;3(5):e204662. doi:10.1001/jamanetworkopen.2020.4662.

WP4

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- Lobstein T, Neveux M, Landon J. Costs, equity and acceptability of three policies to prevention obesity: A narrative review to support policy development. *Obesity Science & Practice*. 2020. 10; 6(5) doi: 10.1002/osp4.423

WP6

- Gressier M, Sassi F, Frost G. Healthy foods and healthy diets. How government policies can steer food reformulation. *Nutrients*. 2020;12(7):1-9. doi:10.3390/nu12071992.

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2019

WP 3

- Reimann B, Janssen BG, Alfano R, et al. The cord blood insulin and mitochondrial DNA content related methylome. *Front Genet*. 2019;10(APR). doi:10.3389/fgene.2019.00325
- Clemente, DBP, Matire, L, Bustamante, M et al. Obesity is associated with shorter telomeres in 8 year-old children. Scientific reports. 2019. 9(18739). DOI: 10.1038/s41598-019-55283-8

WP 8

- Sjunnestrand M, Nordin K, Eli K, Nowicka P, Ek A. Planting a seed-Child health care nurses' perceptions of speaking to parents about overweight and obesity: A qualitative study within the STOP project. *BMC Public Health*. 2019;19(1). doi:10.1186/s12889-019-7852-4

- Ek A, Delisle Nyström C, Chirita-Emandi A, et al. A randomized controlled trial for overweight and obesity in pre-schoolers: The More and Less Europe study - An intervention within the STOP project. *BMC Public Health*. 2019;19(1). doi:10.1186/s12889-019-7161-y

Pending publications 'under review'

WP4

- Pineda et al. Policy implementation and priorities to create healthy food environments in Spain applying the Healthy Food Environment Policy Index. Gazeta Sanitaria

- Allais, O et al. Assessments of the potential impacts of new fiscal policies on added sugar in Europe.

WP5

- You Are What You Drink: A Case Study of The Drink Up Campaign. Journal of Business & Economic Policy.

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

WP6

- Van Dam et al. Market concentration and the healthiness of packaged food and non-alcoholic beverage sales across the European single market. Public Health Nutrition.

- Allais, O., Enderli, G., Sassi, F., and Soler, L.G. Effective policies to promote sugar reduction in soft drinks: lessons from a comparison of six European countries.

- Allais, O et al. To what extent does a voluntary policy aiming at reducing the sugar content of products improve the nutrient composition of products? A case study on dairy products.

WP7

- Grašič K. et al. Decline in physical fitness and increase of obesity in children following COVID-19 mitigation measures.

3. Conclusion

The STOP project has produced (to date) over 50 publications across the work packages, including two special issues in *Obesity Reviews*.