



Sugar-sweetened beverage consumption among adolescents in the European Countries

Reducing adolescents' consumption of sugar-sweetened beverage (SSB) consumption is a public health priority in the European countries. The observed cross-country differences in prevalence and trends in SSB consumption may be explained by heterogeneity in implemented policy actions targeting adolescents. Implemented interventions should be evaluated in a national context as well as in an international comparative perspective.

Background

WHO recommends children and adults to restrict consumption of free sugars to less than 10% of total daily energy intake (and preferably less than 5%) (1). High sugar intake during childhood and adolescence may contribute to excessive weight gain (2,3), dental caries (4) and increased cardiometabolic risk (3). Several reviews conclude that intakes of total and added sugars are high in many European countries, especially in children, and point to sugar-sweetened beverages (SSB) as a major contributor to added sugar intakes (5,6). Reducing young people's SSB consumption is thus a public health priority in the European Countries. In this work, monitoring children and adolescents' SSB consumption in the context of implemented policy actions are considered key elements.

Prevalence and trends in SSB consumption

The WHO Europe Childhood Surveillance Initiative (COSI) provides parental reported data on children's (age 6-9 years old) SSB consumption, using data collected in several countries in the European region. The most recently published COSI data (2015/2017) indicate that children's SSB consumption varies greatly across the European regions, with proportion of children consuming SSBs every day ranging from 0.4 % in Ireland to 15.2 in Montenegro (7). Overall, SSB consumption seems to be higher among children living in Southern and Eastern, compared to Northern, European countries.

The Health Behavior in School-aged Children (HBSC) study is a WHO collaborative cross-national study and provides self-reported survey data on health and health behaviors, and their social environments, among boys and girls aged 11, 13 and 15 years old, from more than 50 countries. Data from the most

recent HBSC survey (2017/2018) (8) indicate that adolescents SSB consumption varies greatly across the European countries, ranging from 2% in Finland (11 and 13-year-old girls) to 37% in North Macedonia (15 year-old boys). Overall, SSB consumption was highest in Belgium (French) (29%), North Macedonia (29%) and Albania (28%), and lowest in the Nordic countries

Socioeconomic differences in SSB consumption

A study based on COSI data (2015/2017) suggest that children with lower parental education, as well as children living in families perceiving financial strain, are more likely to consume SSB on everyday basis (9). The socioeconomic patterns seem to be quite consistent across the European regions.

As shown in the international HBSC report (8), adolescents' SSB consumption is associated with socioeconomic differences in less than half of the HBSC countries for boys, and almost two thirds for girls, and with the largest overall socioeconomic differences reported in Belgium. In most countries where socioeconomic differences were present, higher consumption was reported among the lowest socioeconomic groups. Some countries showed the opposite pattern for both boys (Georgia, the Republic of Moldova and Ukraine) and girls (the Republic of Moldova and the Russian Federation), where higher socioeconomic groups were more likely to report daily intake of SSB.

Trends of decline in SSB consumption

Despite heterogeneity in SSB consumption across the European countries, an encouraging trend of declined intake is observed in all European regions. During the 2002– 2018, a decline in the proportion of daily SSB consumers was reported in Western and



Southern (10) as well as Eastern (11) European countries. In Western/Southern Europe, the sharpest decline (relative reduction) was seen in Ireland, going from 37.4 to 5.7%, followed by England and Norway (10). Declines were observed also in Eastern European countries, with the largest reduction seen in Slovenia and the Russian Federation (11). In most Western/Southern countries, decline in SSB consumption were seen across socioeconomic groups (10). In the Eastern European countries, sharper decline was seen in higher versus lower socioeconomic groups, with widening differences seen in several countries (11).

Policy actions targeting SSB consumption

In its reports “Ending childhood obesity” (12) and “Closing the gap in a generation” (13), WHO recommends a large set of actions to reduce SSB consumption and associated inequalities. Some examples are school-based nutrition education programs and food policies (e.g., reduced availability of SSBs and facilitated access to water), who are shown to be effective (14), particularly when they are combined with other policies (14, 15). Other population-based interventions, such as media campaigns, traffic-light-labelling, sugar tax or taxation of SSBs, are recommended as they are suggested to reduce SSB consumption (15,16). An increasingly number of countries have put structural public health measures targeting SSB consumption on their policy agenda. Still, the extent of implemented policies varies greatly across the European countries, which may explain the observed heterogeneity in young people’s SSB consumption

Action needs

Evaluation of policy actions at national level, as well as international comparisons of structural policy measures, may provide a better understanding of prevalence and trends in SSB consumption in the respective countries. Attention should be devoted to the countries who over the last decades have experienced the sharpest decline in SSB consumption (e.g., Ireland, England and Norway), and to countries who despite low prevalence, experienced further reduction in SSB consumption. Likewise, a better understanding of the policy context in which extensive SSB consumption develops is needed. Detailed information on implemented national policy actions are accessible in the NOURISHING database (17). Furthermore, ongoing work (part of the CO-CREATE project) with benchmarking national policy actions, as well as developing a policy index for nutrition policies, may be valuable tool in this work. Lastly, population level interventions addressing adolescents’ SSB consumption should be accompanied by studies using appropriate study designs, with a particular focus on the longterm effect on SSB consumption as well as associated health and health inequalities.

ABOUT: CO-CREATE is led by the Norwegian Institute of Public Health and brings together 14 international research and advocacy organisations to work with young people to create, inform and promote policies for obesity prevention .

www.co-create.eu



[@cocreate_eu](https://www.instagram.com/cocreate_eu)



[@EU_COCREATE](https://twitter.com/EU_COCREATE)

References

1. WHO. Guideline: Sugars intake for adults and children. Geneva: World Health Organization; 2015.
2. Luger M, Lafontan M, Bes-Rastrollo M, et al. Sugar-Sweetened Beverages and Weight Gain in Children and Adults: A Systematic Review from 2013 to 2015 and a Comparison with Previous Studies. *Obes Facts*. 2017;10(6):674-83.
3. Vos MB, Kaar JL, Welsh JA, et al. Added Sugars and Cardiovascular Disease Risk in Children: A Scientific Statement From the American Heart Association. *Circulation*. 2017;135(19):e101-14.
4. Moynihan PJ, Kelly SA (2014) Effect on caries of restricting sugars intake: systematic review to inform WHO guidelines. *J Dent Res* 93(1):818. <https://doi.org/10.1177/0022034513508954>
5. Azais-Braesco V, Sluik D, Maillot M, et al. A review of total & added sugar intakes and dietary sources in Europe. *Nutr J*. 2017;16(1):6.
6. Flodgren GM, Helleve A, Lobstein et al. Primary prevention of overweight and obesity in adolescents: An overview of systematic reviews. *Obes Rev*. 2020 Nov;21(11):e13102. doi:10.1111/obr.13102 Epub 2020 Jul 16. PMID: 32677208.
7. Williams, J., Buoncristiano, M., Nardone et al. A Snapshot of European Children's Eating Habits: Results from the Fourth Round of the WHO European Childhood Obesity Surveillance Initiative (COSI). *Nutrients*, 2020, 12(8), 2481. <https://doi.org/10.3390/nu12082481>
8. Inchley J CD, Budisavljevic S, Torsheim T, et al., editors. Spotlight on adolescent health and wellbeing. Findings from the 2017/2018 Health Behaviour in School-aged Children (HBSC) survey in Europe and Canada. International report. Volume 1. Key findings. Copenhagen: WHO Regional Office for Europe; 2020. Contract No. Licence: CC BY-NC-SA 3.0 IGO.
9. Fisman AS, Buoncristiano M, Williams J. et al. Socioeconomic differences in food habits among 10-9-year-old children from 23 countries. *WHO European Childhood Obesity Surveillance Initiative (COSI 2015/2017)*. *Obes Rev*. 2021 Nov;22(Suppl 6):e13211. doi:10.1111/obr.13211 Epub 2021 Jul 7. PMID: 34235830.
10. Chatelan A, Rouché M, Dzielska A, et al. Time trends in consumption of sugar-sweetened beverages and related socioeconomic differences among adolescents in Eastern Europe: signs of a nutrition transition? *Am J Clin Nutr*. 2021 Oct 4;114(4):1476-1485. doi:10.1093/ajcn/nqab175. PMID: 34086855.
11. Chatelan A, Rouché M, Dzielska A et al. Time trends in consumption of sugar-sweetened beverages and related socioeconomic differences among adolescents in Eastern Europe: signs of a nutrition transition? *Am J Clin Nutr*. 2021 Oct 4;114(4):1476-1485. doi:10.1093/ajcn/nqab175. PMID: 34086855.
12. WHO (2016). Ending childhood obesity. Geneva, World Health Organization. ISBN 978 92 4 151006 6
13. CSDH (2008). Closing the gap in a generation: health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health. Geneva, World Health Organization.
14. Avery A, Bostock L, McCullough F. A systematic review investigating interventions that can help reduce consumption of sugar-sweetened beverages in children leading to changes in body fatness. *J Hum Nutr Diet*. 2015 Jan;28 Suppl 1(Suppl 1):52-64. doi: 10.1111/jhn.12267 Epub 2014 Sep 19. PMID: 25233843; PMCID: PMC4309175
15. von Philipsborn P, Stratil JM, Burns J, Busert LK, Pfadenhauer LM, Polus S, Holzapfel CHauner H, Rehfues E. Environmental interventions to reduce the consumption of sugar-sweetened beverages and their effects on health. *Cochrane Database of Systematic Reviews* 2019, Issue 6. Art. No.: CD012292. DOI: 10.1002/14651858.CD012292.pub2. Accessed 21 April 2022.
16. World Cancer Research Fund International (2018). Building momentum: lessons on implementing a robust sugar sweetened beverage tax. Available at www.wcrf.org/buildingmomentum
17. www.wcrf.org/policy/policy-databases/nourishingframework

ABOUT: CO-CREATE is led by the Norwegian Institute of Public Health and brings together 14 international research and advocacy organisations to work with young people to create, inform and promote policies for obesity prevention.

www.co-create.eu

 [@cocreate_eu](https://www.instagram.com/cocreate_eu)

 [@EU_COCREATE](https://twitter.com/EU_COCREATE)