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# BMJ Paediatrics Open

## Advertising, obesity and child health: the case of Spain

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**TITLE:****Advertising, obesity and child health: the case of Spain****Authors: Gómez SF<sup>1,2</sup>; Rajmil L<sup>3\*</sup>**

1. Gasol Foundation, Sant Boi de Llobregat, Spain

2. GREpS, Health Education Research Group, Nursing and Physiotherapy Department, University of Lleida, Lleida, Spain

3. MD, MPH, PhD. Pediatrician and Public Health Specialist. Retired.

\*Correspondence to: Dr. Luis Rajmil. E-mail: [12455lrr@comb.cat](mailto:12455lrr@comb.cat)

A new Bill has recently been proposed in Spain addressed to regulate the advertising of unhealthy foods and beverages (F&B) aimed at children under 16y.<sup>1</sup>

Childhood and adolescent overweight and obesity represent one of the most important health risks worldwide. Spain is one of the European and worldwide countries with a highest prevalence of childhood and adolescent excessive weight (overweight + obesity), despite the measures adopted to date to try to control it. Four out of ten schoolchildren (6 to 9y) present excessive weight, being overweight more prevalent in girls, while obesity is more prevalent in boys.<sup>2</sup>

Obesity has a multicausal origin related to social determinants, the structural environment, lifestyles and/or genetics. Among the social determinants, the family income, the level of maternal education or the family's social class are the most relevant. In the case of children 4-14y from low-income families, obesity is double, 23.2%, than for those living in high income families, 11.9%. The epidemic in Spain is more frequent in schools located in districts with greater child poverty. In spite of several interventions promoted at a different levels, between 2011 and 2019 it has been possible to reduce excess weight by only 3.9% in those aged 6-9y, which has gone from 44.5% to 40.6%.<sup>2</sup> The reduction is mainly attributable to overweight and not to obesity. The situation may have gotten worse as a result of the COVID-19 pandemic.

The child and adolescent population with excess weight can have significant repercussions in adulthood, and is associated with a shorter life expectancy and a quality of life deterioration along the life course.

The obesogenic environment promotes excess weight gain in the population, facilitating more sedentary behaviors, less physical activity, unbalance sleep and mood, and unhealthy eating, from the consumption of calorie dense, nutrient poor, and high in added saturated fat and/or trans fat, sugar, or sodium (HFSS).

Advertising aimed at children and adolescents has an important influence on the consumption of HFSS F&B. Advertising can promote more positive attitudes, increased taste and consumption preferences and greater consumption of unhealthy F&B, and on the other hand a lower consumption of healthy foods overall in the diet, leading to an increase in body weight.<sup>3</sup> Children exposed to food advertising on TV and advergames consumed between 53.2 and 60 kcal more than children exposed to nonfood advertising, with an impact on body mass index (BMI).<sup>4</sup>

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3 European Governments are increasingly implementing statutory policies that restrict HFSS F&B  
4 marketing to children. Policies show variability regarding the F&B they include in the restriction,  
5 which ages are protected, and which communication channels and marketing techniques are  
6 covered. Nevertheless, the intake of unhealthy F&B continues to increase being marketing  
7 techniques one of the associated factors. If not, why unhealthy F&B industry invest large  
8 quantities of budget to reach children through attractive advertisements and marketing  
9 strategies?  
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11  
12 Eleven evaluations of policies in 4 countries found small or no policy-related reductions in  
13 unhealthy F&B advertising, in part because marketing shifted to other channels or venues.<sup>5</sup>  
14

15 Among the policies implemented at European level, the UK government has announced new  
16 rules to regulate unhealthy F&B advertisements online and before 9pm on TV.<sup>6</sup> The regulations  
17 will use the Nutrient Profiling Model (NPM), original from 2005, and revised in 2018, to assess  
18 the F&B dietary quality. The UK NPM consist in a score system, that enable to classify each F&B  
19 to an overall score that determines whether it can be advertised addressed to children. The  
20 revised profile includes 8% fewer F&B passing the model. Unluckily, until now, it was maintained  
21 a coregulation with voluntary target of enterprises on these codes. In 2019 it was found that  
22 almost half (47.6%) of all food adverts shown over the month on several channels were for less  
23 healthy F&B and this rises to nearly 60% during the 6pm to 9pm slot. Therefore, it is clear that  
24 the current coregulation didn't work.  
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28 In France, a law from 2016 suppressed any commercial publicity in public television programs  
29 and websites, produced for children under 12y. It applies to all advertising, thus including HFSS  
30 F&B. In not public television channels restrictions are applied in relation to the advertising of  
31 F&B. All television advertising, whether directed to children or adults, of HFSS F&B must be  
32 accompanied by a "healthy" message based on the Institute's nutrition education principles. The  
33 F&B dietary quality is assessed by the last version of the French Nutri-Score.  
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36 In Portugal, since 2019 restrictions to HFSS F&B have been applied both in online and audiovisual  
37 channels, in the time slot that goes from 30 minutes before to 30 minutes after the broadcast  
38 of programs for children, as well as in programs of television with a minimum of 25% audience  
39 under 16y or in movie theaters, publications, Internet, and mobile applications aimed at children  
40 of same ages.  
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42 In Sweden, there has been since the 1990s a general ban on television advertising for all kinds  
43 of products during programs aimed at children under 12y, which cannot be preceded or followed  
44 by advertising.  
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46 In Spain, the Code of co-regulation of F&B advertising aimed at minors, obesity prevention  
47 and health (PAOS Code), was adopted for the first time in 2005, and revised in 2011.<sup>7</sup>  
48 Currently, the government is proposing a new royal decree that intends to apply the NPM  
49 recommended by the WHO to define which F&B marketing contents could be addressed to  
50 children. The WHO-NPM consists of a total of 17 food categories and is based on existing models  
51 developed by Norway and Denmark.<sup>8</sup> The rationale is that the models use 'food category'  
52 approaches, which are easier to adapt or modify rather than using a scoring system. The Spanish  
53 proposal prohibits advertising in all kind of media, including TV, online, influencers, and  
54 characters, aimed at children under 16y. Moreover change the co-regulation by an external  
55 evaluation with potential penalty effects.<sup>1</sup> They argue that current advertising restrictions for  
56 unhealthy F&B are not going far enough to protect children from seeing a significant amount of  
57 unhealthy F&B adverts, and do not account for the increasing amount of time children spend  
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3 online. Similarly to the UK Government new rules the Spanish regulation would be launched in  
4 early 2023 if they are finally approved.  
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6 It seems that those regulations based on specific nutritional profiles, that includes not only TV  
7 but all kind of social media with potential influence on the childhood population are more  
8 effectives to achieve the proposed objectives of improving F&B preferences, dietary habits and  
9 finally contributing to reduce childhood obesity. It should also cover all types of media and  
10 timetable addressed to children, and should contemplate an external evaluation by a neutral  
11 body and potential penalties to really reduce marketing advertising that reach children.  
12

13 In summary, the proposed measures are promising and can contribute to reducing excess weight  
14 if the aforementioned aspects are taken into account and are implemented together with other  
15 measures. To face the childhood obesity epidemic, the social inequalities reduction (and policies  
16 aimed at reducing childhood poverty, economic and geographic access to healthy food), the  
17 impulse of school, family and community interventions, and the holistic approaches including  
18 physical activity, sleep and psychological wellbeing promotion should accompany the F&B  
19 marketing regulations. Definitely, tackling the childhood obesity epidemic requires complex and  
20 nationwide strategies starting by effective structural measures as regulating F&B marketing  
21 addressed to children.  
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## 27 References

- 28  
29 1) Ministry of Consumer affairs. Spanish Government. Draft Royal Decree on regulation of food  
30 and drink advertising aimed at children. [BORRADOR DE REAL DECRETO SOBRE REGULACIÓN DE  
31 LA PUBLICIDAD DE ALIMENTOS Y BEBIDAS DIRIGIDA AL PÚBLICO INFANTIL]. Nov. 2021. Accessed:  
32 03/17/2022. Available at:  
33 [https://www.consumo.gob.es/sites/consumo.gob.es/files/Borrador\\_RD\\_publicidad.pdf](https://www.consumo.gob.es/sites/consumo.gob.es/files/Borrador_RD_publicidad.pdf)  
34  
35 2) García-Solano M, Gutiérrez-González E, López-Sobaler AM, , et al. Weight status in the 6- to  
36 9-year-old school population in Spain: results of the ALADINO 2019 Study [*Situación ponderal de*  
37 *la población escolar de 6 a 9 años en España: resultados del estudio ALADINO 2019*]. *Nutr Hosp*  
38 2021;38(5):943-953. DOI: <http://dx.doi.org/10.20960/nh.03618>  
39  
40 3) WHO. Regional office for Europe. Evaluating implementation of the WHO set of  
41 recommendations on the marketing of foods and non-alcoholic beverages to children. Progress,  
42 challenges and guidance for next steps in the WHO European Region. Accessed: 03/16/2022.  
43 Available at: [https://www.euro.who.int/\\_data/assets/pdf\\_file/0003/384015/food-marketing-](https://www.euro.who.int/_data/assets/pdf_file/0003/384015/food-marketing-kids-eng.pdf)  
44 [kids-eng.pdf](https://www.euro.who.int/_data/assets/pdf_file/0003/384015/food-marketing-kids-eng.pdf).  
45  
46 4) Russell SJ, Croker H, Viner RM. The effect of screen advertising on children's dietary intake: A  
47 systematic review and meta-analysis. *Obes Rev* 2019;20:554–568.  
48 <https://doi.org/10.1111/obr.12812>  
49  
50 5) Smith Taillie L, Busey E, Mediano Stoltze F, Dillman Carpentier FR. Governmental policies to  
51 reduce unhealthy food marketing to children. *Nutr Rev* 2019; 77(11):787–816.  
52 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7528677/pdf/nuz021.pdf>  
53  
54 6) Department of Health and Social care. UK. Health and Care Bill: advertising of less healthy  
55 food and drink. Updated 10<sup>th</sup> March 2022. Accessed 04/ 07/2022. Available at:  
56 [https://www.gov.uk/government/publications/health-and-care-bill-factsheets/health-and-](https://www.gov.uk/government/publications/health-and-care-bill-factsheets/health-and-care-bill-advertising-of-less-healthy-food-and-drink)  
57 [care-bill-advertising-of-less-healthy-food-and-drink](https://www.gov.uk/government/publications/health-and-care-bill-factsheets/health-and-care-bill-advertising-of-less-healthy-food-and-drink)  
58  
59  
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1  
2  
3 7) Spanish Agency for Consumer Affairs, Food Safety and Nutrition. Code of co-regulation of  
4 advertising for food products and beverages directed to children, prevention of obesity and  
5 Health (PAOS Code) [Internet]. 2012. Accessed 04/07/2022. Available at:  
6 [https://www.aesan.gob.es/AECOSAN/docs/documentos/nutricion/Nuevo\\_Codigo\\_PAOS\\_2012\\_espagnol.pdf](https://www.aesan.gob.es/AECOSAN/docs/documentos/nutricion/Nuevo_Codigo_PAOS_2012_espagnol.pdf)  
7  
8

9  
10 8) World Health Organization (WHO) Regional Office for Europe. 2015. Nutrient profile model.  
11 Copenhagen: WHO Regional Office for Europe. Accessed 04/07/2022. Available at:  
12 [https://www.euro.who.int/\\_data/assets/pdf\\_file/0005/270716/Nutrient-children\\_web-](https://www.euro.who.int/_data/assets/pdf_file/0005/270716/Nutrient-children_web-new.pdf)  
13 [new.pdf](https://www.euro.who.int/_data/assets/pdf_file/0005/270716/Nutrient-children_web-new.pdf) .  
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# TITLE:

## Advertising, obesity, and child health: the case of Spain

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Childhood and adolescent overweight and obesity represent one of the most important health risks worldwide. Despite the measures adopted to control these conditions, Spain is one of the European and worldwide countries with the highest prevalence of childhood and adolescent excessive weight (overweight + obesity). Four out of ten schoolchildren (6 to 9y) present either overweight or obesity, being the former more prevalent in girls and the latter more prevalent in boys.<sup>1</sup>

In Spain, a new Bill has recently been proposed to regulate the advertising of unhealthy foods and beverages aimed at children under 16y.<sup>2</sup>

Obesity has a multicausal origin related to social determinants, structural environments, and lifestyles. Among the social determinants, family income, maternal educational level, and family's social class are the most relevant. The obesity rate is twice as much (23.2%) for those children (4-14y) coming from low-income families than for those living in high-income families (11.9%). In Spain, such epidemic is more frequent in schools located in districts with greater child poverty. Despite several interventions promoted at different levels, between 2011 and 2019, it has been possible to reduce excess weight by only 3.9% in those aged 6-9y, which has decreased from 44.5% to 40.6%.<sup>1</sup> Such decline can be attributed to overweight but not obesity. This slight achievement could be associated to programs addressed specifically at this age group, the majority of them integrated in a national strategy named NAOS (Nutrition, physical activity and obesity prevention).<sup>1</sup> The 2019 situation may have gotten worse as a result of the COVID-19 pandemic.

The child and adolescent population with excess weight can have significant repercussions in adulthood. In addition to this, it is associated with a shorter life expectancy and quality of life deterioration along the life course.

An obesogenic environment promotes excess weight gain in the population, more sedentary behaviours, less physical activity, unbalanced sleep and mood, and unhealthy eating, from the

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3 consumption of calorie-dense, nutrient-poor, and high in added saturated fat and/or trans fat,  
4 sugar, or sodium.  
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6 Advertising aimed at children and adolescents has a high influence on the consumption of  
7 unhealthy foods and beverages. It can promote more positive attitudes, increase taste and  
8 consumption preferences, and greater consumption of unhealthy foods. Moreover, it induces  
9 a lower consumption of healthy foods overall in the diet which can lead to an increase in body  
10 weight.<sup>3</sup> Children exposed to food advertising on TV and advergames consumed between 53.2  
11 and 60 kcal more than children exposed to nonfood advertising. This had an impact on the body  
12 mass index (BMI).<sup>4</sup>  
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15 European Governments are increasingly implementing statutory policies that restrict unhealthy  
16 foods and beverages marketing to children. Policies show variability regarding the foods and  
17 beverages they include in the restriction, in which ages are protected and communication  
18 channels and marketing techniques are covered. Nevertheless, the intake of unhealthy foods  
19 continues to increase being marketing techniques one of the associated factors. The interested  
20 industries invest on a high budget with the aim of reaching the younger population through  
21 attractive advertisements and marketing strategies.  
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24 Eleven evaluations of policies in four different countries found small or no policy-related  
25 reductions in unhealthy foods and beverages advertising. That was due to marketing shifting to  
26 other channels or venues.<sup>5</sup> Moreover, voluntary television marketing restrictions have been  
27 implemented in some countries, and studies show that television restrictions are generally not  
28 respected, as well as monitoring being challenging.<sup>6</sup>  
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31 Among the policies implemented at the European level, the UK government has announced new  
32 rules to regulate advertisements, both online and on TV before 9 pm, related to unhealthy foods  
33 and beverages.<sup>7</sup> The regulations will use the Nutrient Profiling Model (NPM),  
34 introduced/developed in 2005 and revised in 2018, to assess the dietary quality. The UK NPM  
35 consists in a score system which enables to classify foods and beverages to an overall score that  
36 determines whether they can be advertised to children. The revised profile includes an 8% less  
37 of foods passing the model. Unfortunately, to date, it was maintained a co-regulation with  
38 voluntary target of enterprises on these codes. In 2019, it was found that almost half (47.6%) of  
39 all food adverts broadcasted over the month on several channels were for less healthy foods  
40 and beverages. This rises to a nearly 60% during the 6 pm and the 9 pm slot. Therefore, it is clear  
41 that the current co-regulation failed.  
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45 In France, a law from 2016 restricted any commercial in public television programs and websites  
46 aimed at children under 12y. This applies to all advertising including unhealthy foods and  
47 beverages. In non-public television channels, restrictions are also applied in relation to the  
48 advertising foods and beverages. All television advertising unhealthy foods and beverages, both  
49 addressed to children and adults, must be accompanied by a "healthy" message based on the  
50 institute's nutrition education principles. The dietary quality is assessed by the last version of  
51 the French Nutri-Score.  
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54 In Portugal, since 2019, restrictions on unhealthy foods and beverages have been applied, both  
55 in online and audiovisual channels, in the time slot that covers 30 minutes before and 30 minutes  
56 after the broadcast of programs for children, as well as in TV programs with a minimum of 25%  
57 audience under 16y or in movie theatres, publications, Internet, and mobile applications aimed  
58 at children of the same ages.  
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3 In Sweden, there has been since the 1990s a general ban on television advertising for all kinds  
4 of products during programs aimed at children under 12y, which cannot be preceded or followed  
5 by advertising.  
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7 In Spain, the Code of co-regulation of foods and beverages advertising aimed at minors,  
8 obesity prevention and health (PAOS Code - *Corregulación de la Publicidad de Alimentos y*  
9 *Bebidas Dirigida a Menores, Prevención de la Obesidad y Salud*), was adopted for the first  
10 time in 2005, and revised in 2011.<sup>8</sup> Currently, the government is working on a new royal decree  
11 that intends to apply the NPM, recommended by the WHO, to define which foods and beverages  
12 marketing contents could be addressed to children. The WHO-NPM consists of a total of 17 food  
13 categories and is based on existing models developed by Norway and Denmark.<sup>9</sup> The rationale  
14 is that the models use 'food category' approaches, which are easier to adapt or modify rather  
15 than using a scoring system. The Spanish proposal bans advertising in all kinds of media,  
16 including TV, online platforms, influencers, and characters, aimed at children under 16y.  
17 Moreover, change the co-regulation and voluntary participation of the industry by a  
18 governmental control with potential penalty effects is crucial.<sup>2</sup> They argue that the current rules  
19 on unhealthy food advertising are not going far enough to protect children from seeing a  
20 significant amount of unhealthy adverts, and do not account for the increasing amount of time  
21 children spend online. Similarly to the UK Government new rules, the Spanish regulation will be  
22 launched in early 2023 if it is finally approved. The current Spanish proposal was open to be  
23 discussed among the civil society and organizations, including food and beverage industries,  
24 despite the latter having only agreed partially with such proposal.  
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29 Among the limitations of the Spanish proposal, it is worth mentioning the absence of a motion  
30 for specific evaluation on the effectiveness of the adopted measures. It would be advisable for  
31 the government to commission this evaluation to a consortium of research groups with  
32 expertise in this field.  
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35 It seems that these regulations based on specific nutritional profiles, which includes not only TV  
36 but all kinds of social media, with potential to influence the younger population, are more  
37 effective to achieve the proposed objectives of improving foods and beverages preferences,  
38 dietary habits, and finally contributing to reducing childhood obesity. It should also cover all  
39 types of media and timetable addressed to children, as well as consider an external evaluation  
40 by a neutral body and potential penalties to reduce marketing advertising that reach children.  
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42 In summary, the proposed measures are promising and can contribute to reducing excess weight  
43 if the aforementioned aspects are taken into account and are implemented along with other  
44 measures. To face the childhood obesity epidemic, the social inequalities reduction (and policies  
45 aimed at reducing childhood poverty, economic, and geographic access to healthy food), the  
46 impulse of school, family and community interventions, and the holistic approaches (including  
47 physical activity, sleep and psychological wellbeing promotion) should accompany the foods and  
48 beverages marketing regulations. Undoubtedly, tackling the childhood obesity epidemic  
49 requires complex and nationwide strategies starting by effective structural measures as  
50 regulating marketing addressed to children.  
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## 55 References

56  
57 1) García-Solano M, Gutiérrez-González E, López-Sobaler AM, , et al. Weight status in the 6- to  
58 9-year-old school population in Spain: results of the ALADINO 2019 Study [*Situación ponderal de*  
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3 *la población escolar de 6 a 9 años en España: resultados del estudio ALADINO 2019*]. *Nutr Hosp*  
4 2021;38(5):943-953. DOI: <http://dx.doi.org/10.20960/nh.03618>  
5

6 2) Ministry of Consumer affairs. Spanish Government. Draft Royal Decree on regulation of food  
7 and drink advertising aimed at children. [BORRADOR DE REAL DECRETO SOBRE REGULACIÓN DE  
8 LA PUBLICIDAD DE ALIMENTOS Y BEBIDAS DIRIGIDA AL PÚBLICO INFANTIL]. Nov. 2021. Accessed:  
9 03/17/2022. Available at:  
10 [https://www.consumo.gob.es/sites/consumo.gob.es/files/Borrador\\_RD\\_publicidad.pdf](https://www.consumo.gob.es/sites/consumo.gob.es/files/Borrador_RD_publicidad.pdf)  
11  
12

13  
14 3) WHO. Regional office for Europe. Evaluating implementation of the WHO set of  
15 recommendations on the marketing of foods and non-alcoholic beverages to children. Progress,  
16 challenges and guidance for next steps in the WHO European Region. Accessed: 03/16/2022.  
17 Available at: [https://www.euro.who.int/\\_data/assets/pdf\\_file/0003/384015/food-marketing-](https://www.euro.who.int/_data/assets/pdf_file/0003/384015/food-marketing-kids-eng.pdf)  
18 [kids-eng.pdf](https://www.euro.who.int/_data/assets/pdf_file/0003/384015/food-marketing-kids-eng.pdf).  
19  
20

21 4) Russell SJ, Croker H, Viner RM. The effect of screen advertising on children's dietary intake: A  
22 systematic review and meta-analysis. *Obes Rev* 2019;20:554–568.  
23 <https://doi.org/10.1111/obr.12812>  
24  
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26 5) Smith Taillie L, Busey E, Mediano Stoltze F, Dillman Carpentier FR. Governmental policies to  
27 reduce unhealthy food marketing to children. *Nutr Rev* 2019; 77(11):787–816.  
28 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7528677/pdf/nuz021.pdf>  
29  
30

31 6) WHO European Regional Obesity Report 2022. Copenhagen: WHO Regional Office for Europe;  
32 2022. Licence: CC BY-NC-SA 3.0 IGO. Accessed: 05/29/2022. Available at:  
33 <https://apps.who.int/iris/bitstream/handle/10665/353747/9789289057738-eng.pdf>  
34

35 7) Department of Health and Social care. UK. Health and Care Bill: advertising of less healthy  
36 food and drink. Updated 10<sup>th</sup> March 2022. Accessed 04/ 07/2022. Available at:  
37 [https://www.gov.uk/government/publications/health-and-care-bill-factsheets/health-and-](https://www.gov.uk/government/publications/health-and-care-bill-factsheets/health-and-care-bill-advertising-of-less-healthy-food-and-drink)  
38 [care-bill-advertising-of-less-healthy-food-and-drink](https://www.gov.uk/government/publications/health-and-care-bill-factsheets/health-and-care-bill-advertising-of-less-healthy-food-and-drink)  
39

40 8) Spanish Agency for Consumer Affairs, Food Safety and Nutrition. Code of co-regulation of  
41 advertising for food products and beverages directed to children, prevention of obesity and  
42 Health (PAOS Code) [Internet]. 2012. Accessed 04/07/2022. Available at:  
43 [https://www.aesan.gob.es/AECOSAN/docs/documentos/nutricion/Nuevo\\_Codigo\\_PAOS\\_2012](https://www.aesan.gob.es/AECOSAN/docs/documentos/nutricion/Nuevo_Codigo_PAOS_2012_espanol.pdf)  
44 [\\_espanol.pdf](https://www.aesan.gob.es/AECOSAN/docs/documentos/nutricion/Nuevo_Codigo_PAOS_2012_espanol.pdf)  
45

46 9) World Health Organization (WHO) Regional Office for Europe. 2015. Nutrient profile model.  
47 Copenhagen: WHO Regional Office for Europe. Accessed 04/07/2022. Available at:  
48 [https://www.euro.who.int/\\_data/assets/pdf\\_file/0005/270716/Nutrient-children\\_web-](https://www.euro.who.int/_data/assets/pdf_file/0005/270716/Nutrient-children_web-new.pdf)  
49 [new.pdf](https://www.euro.who.int/_data/assets/pdf_file/0005/270716/Nutrient-children_web-new.pdf) .  
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# BMJ Paediatrics Open

## Advertising, obesity and child health: the case of Spain

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## Advertising, obesity, and child health: the case of Spain

Authors: Gómez SF<sup>1,2</sup>; Rajmil L<sup>3\*</sup>

1. Gasol Foundation, Sant Boi de Llobregat, Spain

2. GREpS, Health Education Research Group, Nursing and Physiotherapy Department, University of Lleida, Lleida, Spain

3. MD, MPH, PhD. Pediatrician and Public Health Specialist. Retired.

\*Correspondence to: Dr. Luis Rajmil. E-mail: 12455lrr@comb.cat

Childhood and adolescent overweight and obesity represent one of the most important health risks worldwide. Despite the measures adopted to control these conditions, Spain is one of the European and worldwide countries with the highest prevalence of childhood and adolescent obesity. Four out of ten schoolchildren (6 to 9y) are either overweight or obesity, with the former more prevalent in girls and the latter more prevalent in boys.<sup>1</sup> In Spain, a new Bill has recently been proposed to regulate the advertising of unhealthy foods and beverages aimed at children under 16y.<sup>2</sup>

Obesity has a multicausal origin related to social determinants, structural environments, and lifestyles. Among the social determinants, family income, maternal educational level, and family's social class are the most relevant. The obesity rate is twice as high (23.2%) for those children (4-14y) coming from low-income families than for those living in high-income families (11.9%). In Spain, the epidemic is more frequent in schools located in districts with greater child poverty. Despite several interventions promoted at different levels, between 2011 and 2019, it has only been possible to reduce excess weight by 3.9% in those aged 6-9y, which has decreased from 44.5% to 40.6%.<sup>1</sup> The decline is mainly due to fewer overweight (but not obese) children. This slight achievement could be associated to programs addressed specifically at this age group, the majority of them integrated in a national strategy named NAOS (Nutrition, physical activity and obesity prevention).<sup>1</sup> The 2019 situation may have deteriorated as a result of the COVID-19 pandemic.

Obesity in children can have significant repercussions in adulthood. In addition to this, it is associated with a shorter life expectancy and quality of life deterioration along the life course.

An obesogenic environment promotes excess weight gain in the population, more sedentary behaviours, less physical activity, unbalanced sleep and mood, and unhealthy eating, from the consumption of calorie-dense, nutrient-poor, and high in added saturated fat and/or trans fat, sugar, or sodium.

Advertising aimed at children and adolescents has a high influence on the consumption of unhealthy foods and beverages. It can promote greater consumption of unhealthy foods. Moreover, it induces a lower consumption of healthy foods overall in the diet which can lead to an increase in body weight.<sup>3</sup> Children exposed to food advertising on TV and games consumed between 53.2 and 60 kcal more than children exposed to nonfood advertising. This had an impact on the body mass index (BMI).<sup>4</sup>



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3 European Governments are increasingly implementing statutory policies that restrict  
4 market to children of unhealthy foods and beverages. Policies show variability regarding  
5 the foods and beverages they include in the restriction, in which ages are protected and  
6 communication channels and marketing techniques are covered. Nevertheless, the intake  
7 of unhealthy foods continues to increase. The interested industries invest a large budget  
8 with the aim of reaching the younger population through attractive advertisements and  
9 marketing strategies.

10  
11 Eleven evaluations of policies in four different countries found small or no policy-related  
12 reductions in unhealthy foods and beverages advertising. This was due to marketing  
13 shifting to other channels or venues.<sup>5</sup> Moreover, voluntary television marketing  
14 restrictions have been implemented in some countries, and studies show that television  
15 restrictions are generally not respected, as well as monitoring being challenging.<sup>6</sup>

16  
17 Among the policies implemented at the European level, the UK government has  
18 announced new rules to regulate advertisements, both online and on TV before 9 pm, in  
19 relation to unhealthy foods and beverages.<sup>7</sup> The regulations will use the Nutrient Profiling  
20 Model (NPM), introduced/developed in 2005 and revised in 2018, to assess the dietary  
21 quality. The UK NPM consists of a score system which enables one to classify foods and  
22 beverages with an overall score that determines whether they can be advertised to children.  
23 The revised profile is more restrictive because resulted in fewer food and drinks passing  
24 the model in comparison with the 2005 NPM (difference of 8 percentage points).  
25 Unfortunately, to date, it was maintained a co-regulation with enterprises voluntary  
26 participation. In 2019, it was found that almost half (47.6%) of all food adverts broadcast  
27 over the month on several channels were for less healthy foods and beverages. This rises  
28 to nearly 60% during the 6 pm and 9 pm slot. Therefore, it is clear that the current co-  
29 regulation failed.

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34 In France, a law from 2016 restricted any commercial in public television programs and  
35 websites aimed at children under 12y.<sup>8</sup> This applies to all advertising including unhealthy  
36 foods and beverages. In non-public television channels, restrictions are also applied in  
37 relation to the advertising foods and beverages. All television advertising unhealthy foods  
38 and beverages, both addressed to children and adults, must be accompanied by a “healthy”  
39 message based on the institute's nutrition education principles. The dietary quality is  
40 assessed by the last version of the French Nutri-Score.

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43 In Portugal, since 2019, restrictions on unhealthy foods and beverages have been applied,  
44 both in online and audiovisual channels, in the time slot that covers 30 minutes before  
45 and 30 minutes after the broadcast of programs for children, as well as in TV programs  
46 with a minimum of 25% audience under 16y or in movie theatres, publications, Internet,  
47 and mobile applications aimed at children of the same ages.<sup>9</sup>

48  
49 In Sweden, there has been since the 1990s a general ban on television advertising for all  
50 kinds of products during programs aimed at children under 12y, which cannot be preceded  
51 or followed by advertising.<sup>10</sup>

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53 In Spain, the Code of co-regulation of foods and beverages advertising aimed at minors,  
54 obesity prevention and health (PAOS Code - *Corregulación de la Publicidad de Alimentos y*  
55 *Bebidas Dirigida a Menores, Prevención de la Obesidad y Salud*), was adopted for the first  
56 time in 2005, and revised in 2011.<sup>11</sup> Currently, the government is working on a new royal  
57 decree that intends to apply the NPM, recommended by the WHO, to define which foods  
58 and beverages marketing contents could be addressed to children. The WHO-NPM  
59 consists of a total of 17 food categories and is based on existing models developed by  
60

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2  
3 Norway and Denmark.<sup>12</sup> The rationale is that the models use ‘food category’ approaches,  
4 which are easier to adapt or modify rather than using a scoring system. The Spanish  
5 proposal bans advertising in all kinds of media, including TV, online platforms,  
6 influencers, and characters, aimed at children under 16y. Moreover, the change from  
7 voluntary participation of the industry to a governmental control with potential penalty  
8 effects is crucial.<sup>2</sup> They argue that the current rules on unhealthy food advertising are not  
9 going far enough to protect children from seeing a significant amount of unhealthy adverts,  
10 and do not account for the increasing amount of time children spend online. Similarly to  
11 the UK Government new rules, the Spanish regulation will be launched in early 2023 if  
12 it is finally approved. The current Spanish proposal is open to be discussed among the  
13 civil society and organizations, including food and beverage industries, despite the latter  
14 having only agreed partially with such proposal.

15  
16 Among the limitations of the Spanish proposal, it is worth mentioning the absence of a  
17 motion for specific evaluation on the effectiveness of the adopted measures. It would be  
18 advisable for the government to commission this evaluation to a consortium of research  
19 groups with expertise in this field.

20  
21 It seems that these regulations based on specific nutritional profiles, which includes not  
22 only TV but all kinds of social media, with the potential to influence the younger  
23 population, are more effective to achieve the proposed objectives of improving foods and  
24 beverages preferences, dietary habits, and finally contributing to reducing childhood  
25 obesity. It should also cover all types of media and timetable addressed to children, as  
26 well as consider an external evaluation by a neutral body and potential penalties to reduce  
27 marketing advertising that reach children.

28  
29 In summary, the proposed measures are promising and can contribute to reducing excess  
30 weight if the aforementioned aspects are taken into account and are implemented along  
31 with other measures. Additionally, a reduction in social inequalities (and policies aimed  
32 at reducing childhood poverty, economic, and geographic access to healthy food) are  
33 needed. School, family and community interventions, and a holistic approach (including  
34 physical activity, sleep and psychological wellbeing promotion) should accompany the  
35 foods and beverages marketing regulations. Undoubtedly, tackling the childhood obesity  
36 epidemic requires complex and nationwide strategies starting by effective structural  
37 measures as regulating marketing addressed to children.

## 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60

### References

1) García-Solano M, Gutiérrez-González E, López-Sobaler AM, et al. Weight status in the 6- to 9-year-old school population in Spain: results of the ALADINO 2019 Study [Situación ponderal de la población escolar de 6 a 9 años en España: resultados del estudio ALADINO 2019]. *Nutr Hosp* 2021;38(5):943-953. DOI: <http://dx.doi.org/10.20960/nh.03618>

2) Ministry of Consumer affairs. Spanish Government. Draft Royal Decree on regulation of food and drink advertising aimed at children. [BORRADOR DE REAL DECRETO SOBRE REGULACIÓN DE LA PUBLICIDAD DE ALIMENTOS Y BEBIDAS DIRIGIDA AL PÚBLICO INFANTIL]. Nov. 2021. Accessed: 03/17/2022. Available at:

1  
2  
3 [https://www.consumo.gob.es/sites/consumo.gob.es/files/Borrador\\_RD\\_publicidad.pdf](https://www.consumo.gob.es/sites/consumo.gob.es/files/Borrador_RD_publicidad.pdf)  
4  
5

6  
7 3) WHO. Regional office for Europe. Evaluating implementation of the WHO set of  
8 recommendations on the marketing of foods and non-alcoholic beverages to children.  
9 Progress, challenges and guidance for next steps in the WHO European Region.

10 Accessed: 03/16/2022. Available at:

11 [https://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0003/384015/food-marketingkids-](https://www.euro.who.int/__data/assets/pdf_file/0003/384015/food-marketingkids-eng.pdf)  
12 [eng.pdf](https://www.euro.who.int/__data/assets/pdf_file/0003/384015/food-marketingkids-eng.pdf).  
13

14  
15 4) Russell SJ, Croker H, Viner RM. The effect of screen advertising on children's  
16 dietary intake: A systematic review and meta-analysis. *Obes Rev* 2019;20:554–568.

17 <https://doi.org/10.1111/obr.12812>  
18

19  
20 5) Smith Taillie L, Busey E, Mediano Stoltze F, Dillman Carpentier FR. Governmental  
21 policies to reduce unhealthy food marketing to children. *Nutr Rev* 2019; 77(11):787–  
22 816. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7528677/pdf/nuz021.pdf>  
23

24  
25 6) WHO European Regional Obesity Report 2022. Copenhagen: WHO Regional Office  
26 for Europe; 2022. Licence: CC BY-NC-SA 3.0 IGO. Accessed: 05/29/2022. Available  
27 at: [https://apps.who.int/iris/bitstream/handle/10665/353747/9789289057738-](https://apps.who.int/iris/bitstream/handle/10665/353747/9789289057738-eng.pdf)  
28 [eng.pdf](https://apps.who.int/iris/bitstream/handle/10665/353747/9789289057738-eng.pdf)  
29

30  
31 7) Department of Health and Social care. UK. Health and Care Bill: advertising of less  
32 healthy food and drink. Updated 10th March 2022. Accessed 04/ 07/2022. Available at:  
33 [https://www.gov.uk/government/publications/health-and-care-bill-factsheets/health-](https://www.gov.uk/government/publications/health-and-care-bill-factsheets/health-and-care-bill-advertising-of-less-healthy-food-and-drink)  
34 [andcare-bill-advertising-of-less-healthy-food-and-drink](https://www.gov.uk/government/publications/health-and-care-bill-factsheets/health-and-care-bill-advertising-of-less-healthy-food-and-drink)  
35

36  
37 8) France. Journal Officiel de la République Française LOI n° 2016-1771 du 20  
38 Décembre 2016 Relative à la Suppression de la Publicité Commerciale Dans Les  
39 Programmes Jeunesse de la Télévision Publique. Accessed 06/15/2022. Available from:  
40 <https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000033658678>  
41

42  
43 9) Portugal. Diário Da República Electrónico. Lei n° 30/2019, de 23 de Abril. Introduz  
44 restrições à publicidade dirigida a menores de 16 anos de géneros alimentícios e  
45 bebidas. Accessed 06/15/2022. Available from: [https://dre.pt/dre/detalhe/lei/30-2019-](https://dre.pt/dre/detalhe/lei/30-2019-122151046)  
46 [122151046](https://dre.pt/dre/detalhe/lei/30-2019-122151046)  
47

48  
49 10) Sweden. Konsumentombudsmannens tolkningsråd om förbud mot kommersiell  
50 reklam för barn på tv. 1990. Accessed 06/15/2022. Available from:

51 <https://www.konsumentverket.se/for-foretag/marknadsforing/reklam-till-barn/>  
52

53  
54 11) Spanish Agency for Consumer Affairs, Food Safety and Nutrition. Code of co-  
55 regulation of advertising for food products and beverages directed to children,  
56 prevention of obesity and Health (PAOS Code) [Internet]. 2012. Accessed 04/07/2022.  
57 Available at:

58 [https://www.aesan.gob.es/AECOSAN/docs/documentos/nutricion/Nuevo\\_Codigo\\_PA](https://www.aesan.gob.es/AECOSAN/docs/documentos/nutricion/Nuevo_Codigo_PAOS_2012_espanol.pdf)  
59 [OS\\_2012\\_espanol.pdf](https://www.aesan.gob.es/AECOSAN/docs/documentos/nutricion/Nuevo_Codigo_PAOS_2012_espanol.pdf)  
60

1  
2  
3 12) World Health Organization (WHO) Regional Office for Europe. 2015. Nutrient  
4 profile model. Copenhagen: WHO Regional Office for Europe. Accessed 04/07/2022.  
5 Available at:  
6 [https://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0005/270716/Nutrient-](https://www.euro.who.int/__data/assets/pdf_file/0005/270716/Nutrient-children_webnew.pdf)  
7 [children\\_webnew.](https://www.euro.who.int/__data/assets/pdf_file/0005/270716/Nutrient-children_webnew.pdf)  
8 [pdf.](https://www.euro.who.int/__data/assets/pdf_file/0005/270716/Nutrient-children_webnew.pdf)  
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