

# PANORAMA OF OBESITY IN CHILDREN AND ADOLESCENTS

RIO DE JANEIRO, VOL. 2, ISSUE 2, OCT. 2020



## EDITORIAL

The OBESITY PANORAMA IN CHILDREN AND ADOLESCENTS is in its second edition and presents a compilation of information and data on obesity in this public. The rapid advance in the number of children and adolescents affected by this condition and its consequences, whether in childhood and adolescence or adulthood, makes the need for policies and programs that would guide health systems and society as a whole to urgently reduce these rates. Worldwide, there are about 40 million children under 5 years old with obesity, and 340 million children and adolescents between 5 and 19 years old are overweight or obese (WHO, 2020).

To oversee the evolution of this condition, it is essential to monitor public health information systems and relevant public policies. Desiderata Institute, in its commitment to contribute to Brazilian children and adolescents to be among the healthiest in the world, gathers in this publication information that helps understand the scenario of childhood obesity in the state of Rio de Janeiro and Brazil and the challenges and opportunities for its control. In the section "Obesity in children and adolescents," we present the concept of childhood obesity and some factors that may influence it. In the section "Obesity in children and adolescents in the state

of Rio de Janeiro" we present the comparison of the years 2009 and 2019 for the nutritional status in children from 0 to 2 years old, 2 to 4 years old, 5 to 9 years old and adolescents from 10 to 19 years old in Brazil, in the state and Municipality of Rio de Janeiro and the historical series of overweight according to the Body Mass Index (BMI). These data help us understand the rapid growth of obesity in children and adolescents. In this same section, we also bring some data highlighting the nutritional status of children and adolescents in the state of Rio de Janeiro divided by gender and race. In the following section, we include data on obesity in different Brazilian states and different age groups.

In the section "Action Plan for Preventing Obesity in Children and Adolescents 2014-2019," we highlight the international commitment made by the Brazilian government and the main global recommendations to address childhood obesity.

Finally, in the "Opinion Panel," experts from related areas comment on the scenario presented in this Panorama.

Have a good reading.

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## METHODOLOGY

In the section "Obesity in children and adolescents," the option of not using the concept of obesity according to the World Health Organization, since the most recent publications on the subject question the energy balance approach as well as the use of BMI to determine the health status of adult individuals. Therefore, we chose to use the concept proposed by Wharton (1). The double burden of malnutrition was also addressed, when excess weight can coexist with other nutritional disorders, such as stature deficit and lack of nutrients, in conformity with several studies findings (2-4). Both the infographics of "Factors influencing obesity in children and adolescents" and "Risks to childhood and adult life," considered national and international protocols. (6-9).

In the "Obesity in children and adolescents in the State of Rio de Janeiro" section, the information from the infographic "Comparison of the Nutritional State (%) according to BMI for the age of children and adolescents in 2009 and 2019" are from the database of the Food and Nutritional Surveillance System (SISVAN), consulted in August 2020. This information reflects the follow-ups conducted under the scope of Primary Health Care (PHC) including beneficiaries of the Bolsa Família social welfare program, and other users of the Unified Health System (SUS) who reside within the areas that are covered by the territorial logic of Primary Health Care, and who attended basic care units and had their nutritional assessment conducted in the considered period. The analysis of the weight excess category, which is the sum of overweight, obesity, and severe

obesity, was considered for all age groups. For this purpose, there is a set of information, which presents the "historical series with the prevalence rate of overweight regarding BMI (IMC), per federative unit" between the years 2009 and 2019 in the age group of 5 to 19 years old, and then only 2019 was highlighted, with a detailed analysis per age group. In this way, it is possible to analyze the weight excess prevalence over time and then understand what the behavior is like in each age group.

A specific cutout was also made for the State of Rio de Janeiro with data regarding gender and race. The chi-square statistical test was performed to verify the distribution and association among the variables. The test shows us a p-value of 4.14E-24, indicating a statistically significant association between the nutritional status and race/color variables as well as nutritional status and gender. Finally, in this section, we evaluated obesity data in all 27 Brazilian States, highlighting the percentage values in Brazil and the State of Rio de Janeiro. We chose to analyze obesity because it is a measurable category in all age groups. In the end, the Action Plan for Preventing Obesity in Children and Adolescents 2014-2019 was assessed through the analysis of its courses of action (9). An analysis of the Plan proposed by PAHO in 2014 was also performed, a period when Brazil and the other South American proposed to monitor and implement 15 indicators divided into 5 action lines to contain the rapidly growing epidemic of obesity in children and adolescents. To visualize the data, we chose to present

the percentage of indicators achieved by Brazil in each strategic line of the plan in the period between 2014 and 2019. The Brazilian performance among the other analyzed countries from the perspective of the "Other intersectoral actions" indicator, which includes actions to provide urban spaces for physical activity and measures to increase the availability and accessibility of healthy food. As for the line "Improvement of school nutrition and physical activity environments" the analysis of the action indicators to implement national school feeding programs as well as the adoption of norms and/or regulations on food and beverage sale in schools and the promotion of physical activity, where there was a need for advances in physical activity practices in schools. The indicator "Primary health care and promotion of breastfeeding and healthy eating" includes actions to promote healthy eating based on national nutrition guidelines as well as other activities related to the prevention of obesity. At this point, the country should still provide advances mainly in breastfeeding protection. Finally, the indicators of the lines "Fiscal policies and regulation of food marketing and labeling" and "Surveillance, research and evaluation" are points of attention because the monitoring has not detected advances, mainly due to the non-implementation of regulatory policies, labeling and advertising of ultra-processed foods and the necessary advances of the Food and Nutritional Surveillance System that has a low representation of the Brazilian population.

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## OBESITY IN CHILDREN AND ADOLESCENTS

Obesity is a complex condition in which excess body fat can damage health and increase the risk of long-term health complications. Weight excess in children and adolescents can co-exist with other forms of malnutrition, including stature deficit for age.

### Some factors that influence obesity in children and adolescents

- Food environment;
- Low accessibility to healthy food;
- Easy access to ultra-processed foods (especially sweetened beverages);
- Advertising targeting children;
- Extensive work hours for parents;
- Early interruption of breastfeeding;
- Inadequate introduction of complementary feeding;
- Sedentary behavior.

### Possible consequences in childhood and adulthood (with icons for each sentence)

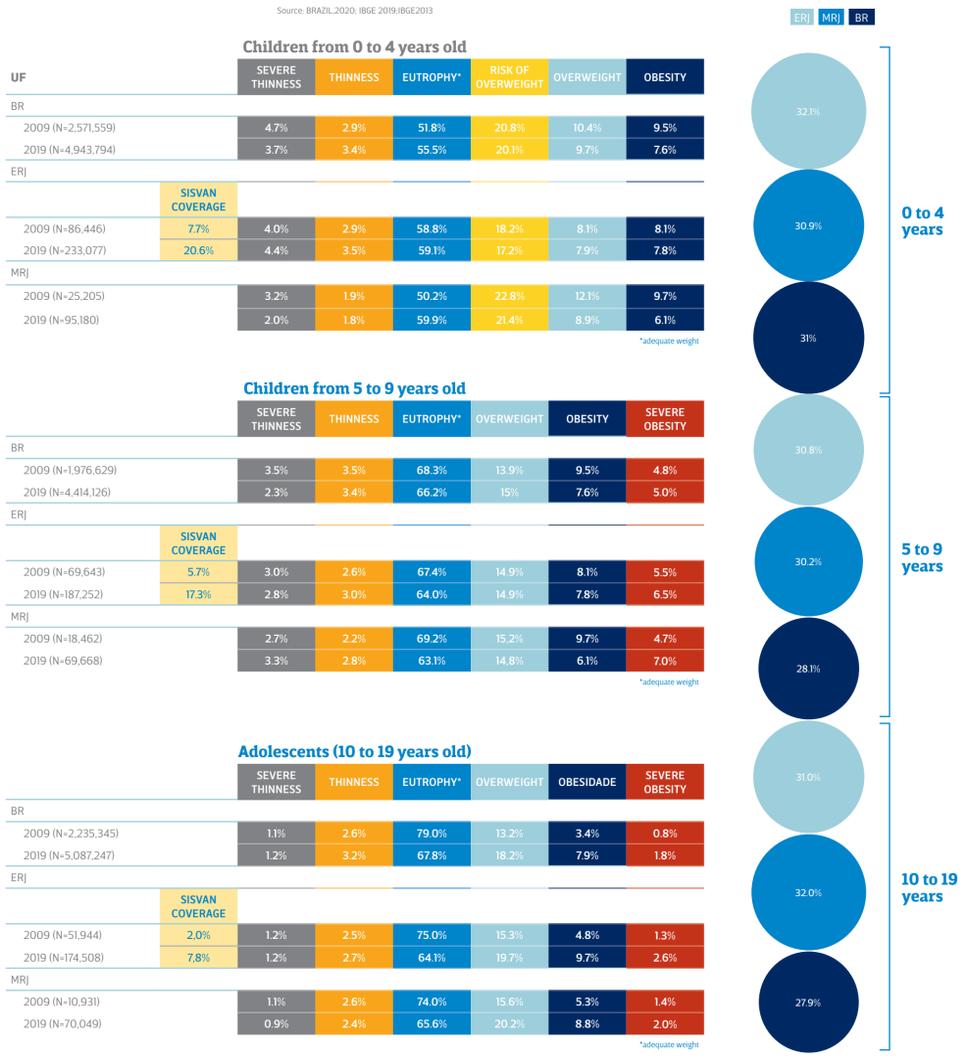
- Cardiovascular, endocrine and orthopedic diseases and complications.
- Obesity in adult life, early development of hypertension and type 2 diabetes.
- Negative impact on school attendance, employability and salary in adult life.
- Excess lifetime health costs.

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## OBESITY IN CHILDREN AND ADOLESCENTS IN THE STATE OF RIO DE JANEIRO

### Comparison of nutritional status (%) according to BMI for children and adolescents in 2009 and 2019, according to the Food and Nutritional Surveillance System (SISVAN)

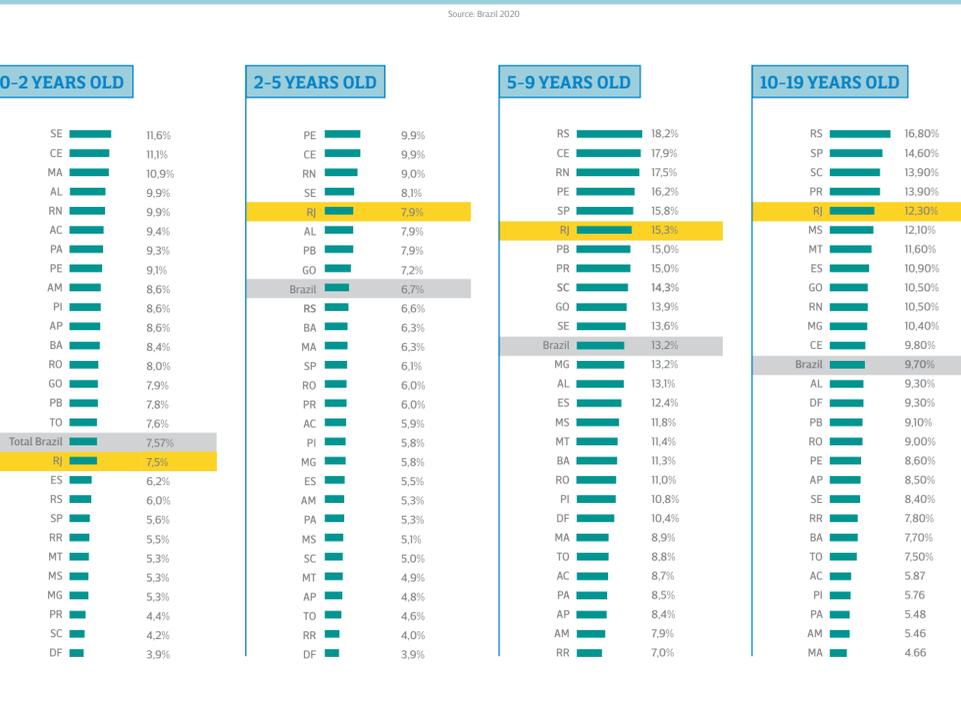
### % of weight excess (bmi) of children and adolescents, by the age group, in 2019, according to SISVAN



### Nutritional status (% BMI) of children < 5 years old according to race/color and gender in the State of Rio de Janeiro in 2019

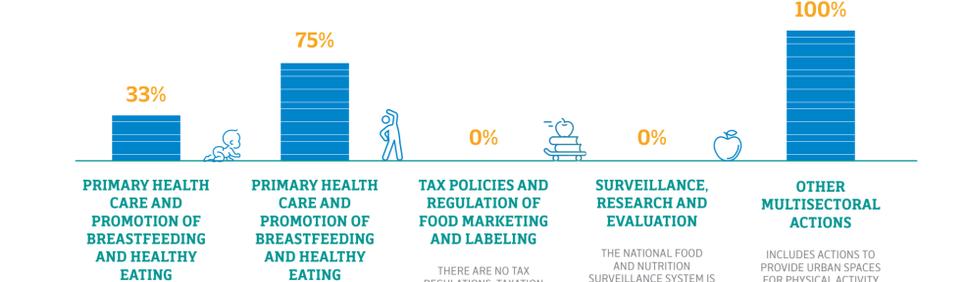
ESTADO DO RIO DE JANEIRO (ERJ)	Children: 0 to 5 years old						Children: 5 to 9 years old						Adolescents: 10 to 19 years old					
	SEVERE THINNESS	THINNESS	EUTROPHY	RISK OF OVERWEIGHT	OVERWEIGHT	OBESITY	SEVERE THINNESS	THINNESS	EUTROPHY	RISK OF OVERWEIGHT	OVERWEIGHT	OBESITY	SEVERE THINNESS	THINNESS	EUTROPHY	RISK OF OVERWEIGHT	OVERWEIGHT	OBESITY
WHITE	3.9%	3.5%	59.8%	17.4%	7.9%	7.5%	2.5%	2.9%	62.9%	15.8%	9.3%	6.6%	1.2%	2.8%	64.2%	19.7%	9.7%	2.4%
BLACK/BROWN	4.5%	3.5%	59.8%	17.0%	7.8%	7.5%	3.0%	3.1%	65.2%	14.0%	7.9%	6.7%	1.3%	2.7%	64.0%	19.7%	9.6%	2.7%
FEMALE	4.2%	3.5%	60.6%	16.7%	7.8%	7.2%	2.6%	3.0%	64.9%	15.4%	9.0%	5.1%	1.1%	2.6%	64.5%	20.0%	9.4%	2.4%
MALE	4.7%	3.5%	57.7%	17.7%	8.0%	8.5%	3.1%	3.1%	62.9%	14.2%	8.4%	8.3%	1.4%	3.8%	61.2%	17.3%	12.3%	4.0%

## OBESITY IN AGE GROUPS BY STATE (%) IN 2019, SISVAN DATA



## MONITORING THE PLAN FOR OBESITY PREVENTION IN CHILDREN AND ADOLESCENTS

Percentage of indicators achieved by Brazil in each of the 5 strategic lines of the plan between 2014 and 2019



To access the plan:  
PAHO - Plan for prevention of obesity in children and adolescents, 2014  
Complete panel of plan indicators by country

**ADVANCES AND PERSPECTIVES OF STRATEGIC ACTIONS TO COMBAT CHILDHOOD OBESITY IN BRAZIL.**

*Ana Carolina Feldenheimer da Silva – Adjunct Professor of the Social Nutrition Department – Institute of Nutrition – UERJ*

Obesity in both childhood and adolescence as well as in adulthood has its etiology based on multifactorial processes, being “triggered” in our society by a series of inducers. Considering the origin of this disorder, the answer to this confrontation requires actions in different fields. Among the main factors, we can highlight the level of income, the type of national food system, any changes in lifestyle, technological changes, the infrastructure of cities and transportation systems, family income and women’s participation in the workforce, the commercialization of ultra-processed food and the quality and coverage of healthcare services.

A recently published World Bank document (Shekar & Popkin, 2020) mentions some alternatives to fight obesity: Fiscal policies such as extra taxation of unhealthy foods and subsidies for the healthy ones; regulatory policies on marketing and advertising (including direct marketing to children in schools); food systems that cover all aspects of the food supply chain ensuring the provision and access in different spaces (retail options and dining out segment); educational policies that affect areas such as school canteens, which advertises and sells unhealthy food in the school and surroundings as well as physical activity in schools; interventions in public transportation and urban planning; and nutrition programs that operate from pregnancy to early childhood ensuring good nutrition.

From the national perspective, Brazil has advanced in several policies and tends to advance in other areas. We can mention the Food Guides (Brazil, 2014; Brazil, 2019) as an important tool for promoting adequate and healthy eating. The Brazilian Unified Healthcare System (SUS) provides healthcare services to the entire population but urgently qualify and enhance the obesity-related care in children and adolescents, from conception, through the first childhood and during school to adulthood, for preventing all forms of malnutrition and early intervention when there is excessive weight gain (Jaime et al. 2018). The National School Food Program (PNAE)<sup>1</sup> provides

good quality meals for children and adolescents throughout the public school system years, although schools (both public and private) still have much to advance to adopt an adequate agenda to promote healthy eating as well as Food and Nutrition Education actions in the school space.

Alternatively, it is urgent to discuss the public space as an arena that promotes adequate and safe physical activity allied to the enhancement in regulatory policies on two fronts – the taxation of food to increase the price of ultra-processed food and the prohibition of advertising ultra-processed food for children, including within the school space.

Finally, in addition to restricting access to ultra-processed food, we urge for the assurance and protection of a food system that guarantees safe, high-quality, less processed food at a low cost, guaranteeing satisfactory and healthy food not only for children but for the entire population

<sup>1</sup> <https://www.fnnde.gov.br/programas/pnae>

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**THE ENCOUNTER BETWEEN THE COVID-19 AND OBESITY PANDEMICS**

*Daniela Canella – Associate Professor of the Department of Applied Nutrition – Institute of Nutrition – UERJ*

In March 2020, the World Health Organization declared the Covid-19 pandemic. In April, scientists warned of the need to recognize obesity<sup>1</sup>, which is a chronic disease and also a risk factor for other chronic diseases, as a contributing condition to the worsening of Covid-19 cases. The relationship between obesity and increased hospitalization, need for ICU treatment and mortality has been confirmed in scientific literature<sup>2</sup>.

Obesity is considered a pandemic, reaching a significant portion of the world population<sup>3</sup>. In Brazil, obesity grows continuously at all ages<sup>4, 5</sup> and reaches one in five adults<sup>6</sup>, more than 7% of children under 5 years old and 14% of those between 5 and 9 years old (overcoming the prevalence of height deficit)<sup>4</sup>. The inequities in the occurrence of obesity in the adult population should be highlighted: black women with less education and lower income are the most affected<sup>6, 7</sup>. Obesity is multifactorial and the consumption of ultra-processed food is one of the main determinants<sup>3, 8</sup>. The consumption of these foods begins in childhood<sup>9</sup> and has been growing in the country, but this growth has been more intense among low-income Brazilians<sup>10</sup>.

Although the “democratic” character of the virus is often commented on, the population that is more affected by obesity is probably the most exposed to Covid-19, sometimes due to the impossibility of physical distancing. In this sense, the confrontation of the two pandemics demands structural changes, which guarantee equity in access to health, food and adequate living conditions from childhood.

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**PREVENTION AND CONTROL OF CHILDHOOD OBESITY IN BRAZIL: ADVANCES AND CHALLENGES**

*Gisele Ane Bortolini, General Coordinator of Food and Nutrition – Ministry of Health*

According to information from the Brazilian Food and Nutritional Surveillance System, in 2019 14.8% of children under 5 years old and 28.1% of children between 5 and 9 years old followed up in Primary Healthcare were overweight – 7% and 13.2% were obese, respectively. Considering all Brazilian children under 10 years old, it is estimated that about 6.2 million are overweight and 2.9 million are obese. Among the adolescents, 27.9% of those followed up in Primary Healthcare were overweight, and 9.7% were obese. Considering all Brazilian adolescents, it is estimated that about 9.7 million are overweight and 3.4 million are obese.

Inadequate nutrition is one of the main risk factors according to the global burden of diseases in the world and Brazil. Overweight in children, adolescents, adults and the elderly is the most recurring nutritional problem. Among children between 6 and 23 months, seen by Primary Healthcare in 2019, 48% reported having consumed some ultra-processed food the previous day, 65% of children between 2 and 9 years old consumed some sweetened beverage and 63% had meals in front of the television the day before.

It is also recognized that obesity is determined by multiple factors and its increasing prevalence has been attributed to various processes in which the environment (political, economic, social, cultural), not only the individual choices take strategic places in the understanding of the problem and the need for interventions that require strong action by the State. Through the adoption of measures that promote favorable environments to adopt adequate and healthy food choices, physical activities and opportunities for children to play around.

Beyond this worrying scenario of rapid advancement of childhood obesity, this aggravation has been increasingly associated with harmful repercussions on the living conditions, health and nutrition of children, also negatively impacting on social and economic variables of countries. Studies show that the earlier an individual becomes overweight and the longer he or she remains in this condition, the greater the risks of developing comorbidities and other associated diseases, compromising the quality of life and the profile of morbidity and mortality in the short, medium, and long term.

Due to this alarming sketch, the Brazilian Ministry of Health has been assuming national and international commitments stopping or reduce the advance of childhood obesity. Besides, several countries have organized programs and policies to understand the determinants of childhood obesity and plan actions and initiatives that contribute to reducing or reverse the problem. In Brazil, understanding childhood obesity as a public health priority is a fundamental step, and advancing actions and programs that provide better living conditions, health, and nutrition for Brazilian children is a challenge and priority for the Ministry of Health.

Effective strategies for prevention, focusing on the control of childhood obesity have been summarized by the World Health Organization in publications calling for the end of childhood obesity and by the Pan American Health Organization in the Plan for Prevention and Controlling of Childhood Obesity, which Brazil has committed itself to implement and became effective from 2014–2019.

The actions primarily developed by the Ministry of Health analyzed in this text and organized to contribute to preventing childhood obesity will bring as a parameter the strategic axes of PAHO’s regional plan.

**Strategic Axes:**

Primary health care and promotion of breastfeeding and healthy eating: among the actions developed in Brazil, it is worth mentioning the expansion of primary Healthcare coverage and Family Health Teams; pregnant woman and child’s booklet with graphs to evaluate and monitor weight gain; computerized system to evaluate the nutritional status and food consumption markers; Brazilian Breastfeeding and Feeding Program Strategy that qualifies the actions to promote breastfeeding and complementary feeding; Healthy Growth, which intensifies the agenda for prevention and control of childhood obesity, among others.

The improvement of school nutrition and physical activity environments: The Health at School Program, managed by the Ministry of Health and the Ministry of Education, has been occurring in most Brazilian municipalities since 2007 and have organized actions to promote health as the promotion of healthy eating at school with the articulation of the Family Health Teams. It is important to highlight that the National School Feeding Program, managed by the National System of Education and Ministry of Education, guarantees food supply for more than 40 million school children and in 2020 had its guidelines updated to align with the Food Guide for Brazilian Population; the Health Academy Program, also managed by the Ministry of Health, targets children and adolescents. Materials for teachers to conduct healthy eating activities at school were also distributed by the Ministry of Health.

Tax policies and regulation of food marketing and labeling: the price of food and regulation of food advertising interfere in the consumption or not of certain foods, in this way a series of studies, funded by the Ministry of Health, through a public call from CNPq are in progress. In the scope of advertising regulation, the Brazilian Standard of Commercialization of Foods for Infants and Early Childhood Children (NBCAL), highlights nozzles, dummies, and mammals that deals with the commercial promotion and labeling of foods and products targeting newborns and children up to three years old: such as milk, porridge, pacifiers, and baby bottles. NBCAL’s goal is to ensure the proper use of these products so that there is no interference in breastfeeding practice. The National Health Surveillance Agency (ANVISA) has been discussing the improvement of the front nutrition label to better understand the label and to facilitate choices.

Other multisectoral surveillance actions, research, and evaluation: The Bolsa Família social welfare program is one of the largest policies aimed at transferring income in the world and plays a crucial role in the families’ social conditions, contributing to food and nutritional security. In Brazil, in addition to food and nutritional surveillance data in the Primary Health Care, several national surveys are conducted to know the scenario and design the most appropriate public policies, with emphasis on the National Study of Child Nutrition and Food (ENANI). Moreover, recently, four academic calls have been launched to identify, among the research lines, effective strategies for prevention and control of childhood obesity.

Considering the challenges, it is important to highlight the need to expand and improve strategies on the following axes at local, regional, and national levels:

Primary Health Care: Gestational weight gain and brief feeding interventions during prenatal care monitoring; actions organization and innovation to promote breastfeeding and complementary feeding; nutritional status and weight gain of children monitoring, using the health booklet for registration and information exchanges with families; offering of comprehensive care for children identified with obesity, namely,

School: Assurance in the supply of food in natura and minimally processed, avoiding ultra-processed food and providing water to drink; work on the organization and innovation of actions to promote healthy eating and physical activity; play a role in the supply of practices of physical activity and active recreation.

Communication: Assumption on the fact that childhood obesity is a major health problem that requires efforts of all society with the use of innovative, non-blaming strategies.

Environments: A healthy environment’s assurance to protect children from early exposure to ultra-processed foods and that favor healthier choices with easy access to and availability of fresh and minimally processed foods.

Finally, healthy living for children is not only a parent’s responsibility, but it is a shared responsibility of all who participate in children’s lives, be it caregivers, teachers, and health professionals, or policymakers, among others. Thus, understanding childhood obesity as a priority in public health is the first step, and advancing in actions and programs that provide or improve the living conditions, health, and nutrition of Brazilian children is a challenge for all.

**THE ROLE OF CIVIL SOCIETY IN ADDRESSING THE COMMERCIAL INDUCERS OF CHILDHOOD OBESITY**

*Mariana de Araujo Ferraz – MSc and PhD from FD-USP, Global Health Advocacy Incubator – GHAI advocacy coordinator*

The subject of childhood obesity can be faced through several lenses. Here, we choose to approach it from the perspective of obesogenic environments and the social, commercial, and political factors that shape or moderate them. Obesogenic environments are those that promote high energy intake and sedentary behavior. They are a natural response to the political and economic factors that determine the types of foods that are available, accessible, and their forms of promotion. These environments also involve opportunities for physical activity and social norms regarding food and active life. The erroneous exclusive guilt of the individual for obesity leads to the failure in considering broader factors that integrate obesogenic environments and go beyond the individual sphere, such as commercial factors of availability, price, advertising, information, and market practices of promoting ultra-processed food products. From this perspective, what would be the role of organized civil society in promoting healthy eating environments that prevent childhood obesity as an expression of poor nutrition?

Several studies point out that the greater the degree of market deregulation, the greater the sales of ultra-processed products, which has contributed notably to the substitution of food patterns based on fresh food and culinary preparations, and consequently, to the obesity epidemic through the favoring of excessive calorie consumption.<sup>1</sup> The commercial promoters of obesity are especially worrisome because they influence eating habits from the first moments of life, either by the inappropriate substitution of breastfeeding or by the fidelity of excessive consumption of ultra-processed products from childhood on. In this sense, the confrontation with childhood obesity also involves the demand for market regulatory policies.

The most cost-effective measures of intervention on the obesogenic environment have been studied and recommended by academic groups, social movements, and international health organizations.<sup>2</sup> Among the integrated actions for the prevention and control of overweight and obesity, it is worth mentioning: increased taxation of sugary beverages; Restriction on the advertisement and promotion of unhealthy foods and beverages targeting children; restriction on the offer of ultra-processed foods and

beverages in schools; improvement of food labeling standards to make information more understandable and accessible to the consumer, including a model of front warnings on the packaging that indicates foods and beverages with high levels of sugar, sodium, fat, saturated fat and calorie.<sup>3,4</sup> Naturally, the implementation of such measures faces a huge challenge for it contradicts the economic interests of foods and advertising industry sectors. Therefore, the importance of the civil society that acts, free of conflicts of interest, for the protection of public health is even greater. In Brazil, this agenda has been carried out by various social groups, such as members of the Alliance for Adequate and Healthy Food, and discussed in political consultation spaces such as the health and food and nutrition councils (CONSEAs).

In conclusion, social sectors end up playing a key role in guiding the ways and claiming for measures to correct market failures that bring about the social costs of the obesity epidemic.<sup>5</sup> The several voices of civil society may act as a catalyst to political interventions directed to the environment, so as to make it more friendly to healthy choices. Therefore, it is necessary to strengthen democratic institutions and spaces and instruments for civil society participation in the process of development and monitoring of public policies. Social participation is, therefore, fundamental for confronting the commercial determinants of the syndrome and the sustainable construction of healthy food environments.

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