

PANORAMA OF OBESITY IN CHILDREN AND ADOLESCENTS

RIO DE JANEIRO, VOL. 1, Nº1, OCT. 2019

desiderata
Collective Work
Health in Focus

METHODOLOGY

In the section "Obesity in Children and Adolescents," the concept of obesity according to the World Health Organization (WHO) (1), the double burden of poor nutrition according to the WHO, and other relevant publications were used (2-8). In the infographics of "Factors that Influence Obesity in Children and Adolescents" and "Risks for Childhood and Adulthood," national (9) and international (10) protocols were considered, in addition to systematic reviews and other publications (11-15), respecting the principles and criteria of evidence-based health.

For the section "Evaluation of Obesity and Overweight in Children and Adolescents," the criteria and definitions of the Ministry of Health (MS) were respected in the scope of the Food and Nutritional Surveillance System (SISVAN), for the monitoring and measurement of child growth and development (26). The growth patterns illustrated were those contained in the child and adolescent booklets, sourced in the standard growth curves developed by WHO (27,28).

In the section "Obesity in Children and Adolescents in the State of Rio de Janeiro," the information on the infographics "Comparison of the Nutritional Status (%) according to BMI per age in children and adolescents in 2008 and 2018, according to SISVAN" and "Excess weight historical data series according to BMI for the ages of 5-19 years in the city of Rio de Janeiro, according to SISVAN" comes from the SISVAN database (29), checked on August 2019. Such information reflects the follow-ups carried out under Primary Health Care (PHC), including beneficiaries of the *Bolsa Família* Program and other users of the Unified Health System (SUS) who: live in areas covered by PHC, attended units and had an assessment carried out during the period. The age groups of 5-10 and 10-19 years were joined together due to the similarity in the prevalence of indicators among them.

The population projections used to compare the number of SISVAN evaluations in the State of Rio de Janeiro are those of the Brazilian Institute of Geography and Statistics (IBGE), considering the latest version available and updated for the 2018 (30) and 2008 (31) projections.

In the "Facing the Issue" section, a choice was made to point out the importance of the Rome Declaration (32) as a commitment taken on by the Brazilian government in relation to food and nutrition policies in the context of the United Nations Decade of Action for Nutrition, resulting in the launch of Brazil's Commitments in a publication (33). A choice was made to highlight the large groups of actions recommended by WHO to combat childhood obesity (34), given their relevance and comprehensive view of areas of action involved and their complexity. Similarly, since PHC represents the gateway to the SUS and the privileged place for the food and nutrition surveillance of the population. The "History of median annual coverage (%) of the Family Health Strategy" was presented based on information from the Ministry of Health's Primary Care Department (35).

In the section "Public Policies for Child and Adolescent Obesity," specific policies aimed at the Promotion of Child Health and Obesity and recommended by the Ministry of Health were considered: Health at School and Healthy Growth Program, and the transferring of resources to the organization and financing of actions during the last cycles were pointed out (36-38).

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PANEL OF OPINIONS

INFORMATION FOR ACTION

Katiana Teléfara - Coordinator of the Technical Area of Food and Nutrition - State Department of Health of Rio de Janeiro (SES-RJ)

Information for action, a statement commonly heard in public administration, is still powerful for thinking about the advancement of obesity and how we can face it. The only SUS information system that identifies the percentage of people with obesity in all municipalities is the SISVAN. Its use is essential for the collective diagnosis of the nutritional status of children and adolescents.

Excess weight in these groups has increased in recent years, and governmental actions have been taken to address it, such as the Health at School Program and its branch, the Healthy Growth Program.

One way to articulate the nutritional diagnosis (anthropometric and food consumption) is the use of Food Guides. The guides are documents that present the national guidelines of recommendations for adequate and healthy food to support the educational actions in food and nutrition.

We consider it very important to incorporate the Guide into our actions in the territory.

NATIONAL FOOD AND NUTRITION POLICY (PNAN)

Rafaella da Costa Santini¹, Ana Maria Cavalcante de Lima¹, Sara Araújo da Silva¹, Gisele Ane Bortolini¹

¹ - General Coordination of Food and Nutrition (CGAN) / Ministry of Health (MS)

The National Food and Nutrition Policy (PNAN) aims to improve the conditions of food, nutrition and health for the Brazilian population and establishes, within its guidelines, the Food and Nutritional Surveillance (VAN) as an essential component for nutritional care in the Unified Health System (SUS). VAN is understood as the continuous description and prediction of trends in the population's food and nutrition conditions and their determining factors.

In practice, it is recommended that, both individually and collectively, the management and organization of care in food and nutrition consider the entire VAN cycle, which includes the stages of data collection and production of information, analysis and decision, implementation of actions, and evaluation for re-planning actions and policies.

To this end, the Food and Nutritional Surveillance System (Sisvan), which is the main tool used for VAN information management in primary health care, has been available to all Brazilian municipalities since 2004. Sisvan allows for the registration and dissemination of information about the anthropometric evaluation and food consumption of the population treated in PHC, whether they are a child, adolescent, adult, elderly or pregnant, regardless of sex, race/color, education or belonging to any traditional people or community. In 2018, more than 40 million people were monitored regarding nutritional status, and approximately 2 million people were evaluated by Sisvan for the markers of food consumption throughout the country. In this way, the system allows for the access of the food and nutritional scenario of the population attached to PHC services and teams, and the formulation of policies that meet the needs of this public.

The acknowledgement of the population's nutritional and food scenario allows and enables managers and health professionals to apply the official guidelines for an adequate and healthy diet, as recommended by the Food Guides of the Brazilian Population and for Children Under 2 Years. In this way, we guarantee the Brazilian population the nutritional attention addressed in the National Policy on Food and Nutrition, which comprises the care related to food and nutrition aimed at the promotion and protection of health, the prevention, diagnosis and treatment of medical conditions for individuals, families and communities, contributing to the formation of an integrated, resolute and humanized network of care in the SUS.

PHYSICAL ACTIVITY AND OBESITY IN CHILDREN AND ADOLESCENTS

Ricardo Brandão de Oliveira - Adjunct Professor at UERJ / Coordinator of the Active Life Laboratory - LaVA at UERJ / Adjunct Coordinator of the PostGraduate Program in Exercise and Sports Sciences at State University of Rio de Janeiro (UERJ)

Physical activity plays an important role in the prevention of overweight and obesity in childhood and adolescence, reducing the risks of obesity in adulthood as well. The period of puberty, followed by adolescence, is acknowledged as the most vulnerable for the development of obesity due to sexual maturation and, in many cases, concomitant reductions in the levels of physical activity, especially between the ages of 9 and 15. Currently, 3 out of 4 children between the ages of 4 and 11 worldwide do not meet the minimum physical activity recommendations (WHO, 2018). In Brazil, according to the results of the ERICA study (Cureau et al, 2016), 38% of boys and 71% of girls perform less than 300 minutes of weekly physical activity. Active behaviors have been replaced by more sedentary activities. Brazilian children spend an average of 5 hours watching television and increasingly more

time involved in electronic games. Without adequate policies capable of promoting the engagement of children and adolescents in a more active life, we will possibly have the first generation of adults with a lower quality of life than their parents.

From a broad public health perspective, the fight against obesity seems to be more effective with the adoption of public policies associated with the adequate labeling of food, taxation of products with important externalities, such as sugary beverages, and investment in infrastructure associated with the use of active forms of transportation, such as walking and riding bicycles.

THE IMPORTANCE OF MONITORING THE HEALTH OF CHILDREN AND ADOLESCENTS AND THE USE OF THE HEALTH BOOKLET

Mônica Moretzsohn - President of the Nutrology Department of the Pediatric Society of the State of Rio de Janeiro (SOPER)

Weight is the fastest changing index when there is a health problem. Stature takes time to suffer changes in morbid conditions, and is not a sensitive parameter to assess the presence of acute diseases. However, when compromised, it can be inferred that the disease is long-standing, being important to assess the duration of the disease.

With the weight and stature data, it is possible to calculate the body mass index - BMI (weight in kilos divided by height in square meters). This data should be plotted on the WHO growth reference for school-aged children's child health booklet for children < 5 years old and from 5 to 19 years, for boys and girls.

Every child should be measured and weighed in childcare consultations in order to assess growth and development at the following moments: 1st week; 1st month, 2nd, 4th, 6th, 9th, 12th, 18th and 24th months; and above 24 months at least annually (Brazil, 2012; Brazil, 2019).

As Professor Marcondes would say: "Growth is not photography, it is film" (Marcondes et al, 2002). Therefore, a single isolated number of any anthropometric parameter has a very limited capacity for expressing the child's growth, and long-term monitoring of the growth speed is essential. Therefore, the evaluation of the growth curve's trajectory is of fundamental anthropometric importance and should be included in the child health booklet, a powerful tool to monitor the growth and development of children and adolescents (Moretzsohn et al, 2015).

It is worth noting that the participation of primary care in monitoring the nutritional status of children and adolescents is important, enabling nutritional deviations to be detected in a timely manner, and cases to be treated or referred to a specialist as soon as possible, whenever necessary.

INTRODUCTION

This is the first edition of the PANORAMA OF OBESITY IN CHILDREN AND ADOLESCENTS. The relevance of the subject is due to its magnitude as a global health problem: there are 124 million children and adolescents with obesity in the world. In Brazil, 1 in 3 children have overweight or obesity.

The rapid advancement in the number of people affected by this disease and its consequences, whether in childhood and adolescence or adulthood, creates an urgent need for policies and programs that guide health systems and society as a whole. To this end, the production of national information and the monitoring of public information systems are important allies. Therefore, Instituto Desiderata, in its commitment to contribute to Brazilian children being 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 the challenges and opportunities for its control.

In the section Obesity in Children and Adolescents, we present the concept of obesity and childhood obesity,

the factors that influence it and the risks in childhood and adulthood, highlighting the child and adolescent health booklet as an essential instrument for monitoring weight and height. In the section Obesity in Children and Adolescents in the State of Rio de Janeiro, the comparison of the years 2008 and 2018 for the nutritional status of children under 5 years and between 5 and 19 years in Brazil, in the state and municipality of Rio de Janeiro; and the historical data series of excess weight according to the Body Mass Index (BMI) help us to understand the rapid growth of obesity in children and adolescents. In the Facing the Issue section, we emphasize the international commitment made by the Brazilian government and the main global recommendations for tackling childhood obesity. We also highlight the coverage of the Family Health Strategy, understanding its relevance for comprehensive and continuous care. In the sections Public Policies for Child and Adolescent Obesity and Ongoing Studies in Brazil, we selected the main policies and studies that are being developed in

the country. Finally, in the Panel of Opinions, specialists from related areas comment on the scenario presented by the Panorama.

Studies show that tackling obesity requires changes in legislation for the production and sale of healthier foods, for the elimination of advertisements that induce children to unhealthy consumption, for the increase in physical activities and the reduction of time spent in front of computers, electronic devices, and television. The responsibilities are individual, but they are also governmental, of public and private sectors, of health, education, care and other areas. Isolated actions and unilateral accountability will not be enough to solve the problem. It is necessary for society as a whole to be involved and understand the urgency of the issue, so that we can guarantee a healthy future for our children and adolescents.

We hope that this publication will bring knowledge and inspire participation!

Enjoy your reading.

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OBESITY IN CHILDREN AND ADOLESCENTS

Obesity is a complex multifactorial disease, represented by a positive energy balance between the intake and expenditure of calories.

Excess weight may coexist with other forms of malnutrition, including micronutrient deficiencies and stature deficit according to age (stunting).



rich in calories, poor in nutrients

Factors that influence obesity in children and adolescents

- Children of mothers with diabetes or parents with obesity
- Advertisements for Children
- Early interruption of exclusive breastfeeding
- Prematurity
- Access to foods
- Physical activity
- Small or large babies for gestational age
- Inadequate introduction to complementary feeding
- Regulation and taxation of unhealthy foods
- Biological
- Political
- Food environment
- Socioeconomic
- Cultural
- Safety



Possible consequences in childhood and adulthood

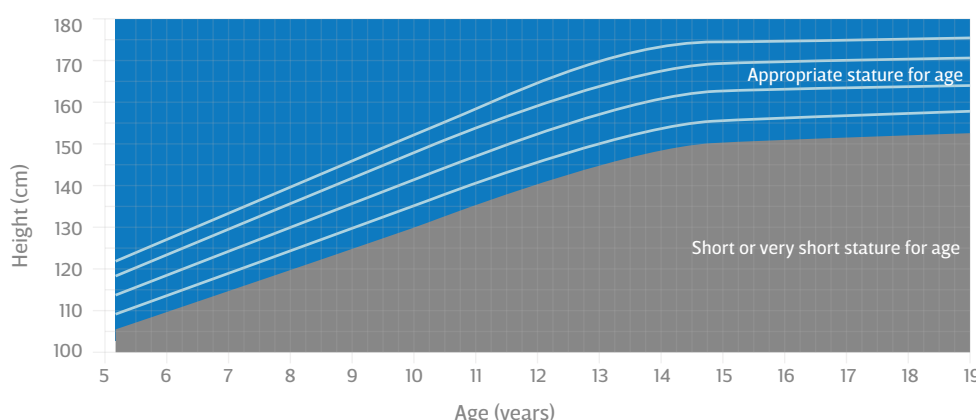
- Cardiovascular, endocrine, orthopedic (musculoskeletal), dermatological and neurological disorders and complications
- Obesity in adulthood, early development of: hypertension, type 2 diabetes, non-alcoholic fatty liver disease, asthma
- Bullying, low self-esteem, school attendance, employability, and salaries in adulthood
- Excess of health care costs for a whole lifetime
- Quality of life

World Health Organization, 2000; Black et al., 2013; Tzioumis and Adair, 2014; Kosaka and Umezaki, 2017; World Health Organization, 2017b; Davis, Oaks and Engle-Stone, 2019; Swinburn et al., 2019; United Nations Children's Fund, World Health Organization, 2019; Brasil, 2014; Styne et al., 2017; Lobstein, Baur and Uauy, 2004; Trasande et al., 2009; Christina Caetano de Souza et al., 2014; Lee et al., 2014; Sonntag et al., 2015; Abarca-Gómez et al., 2017; Weffort and Lamounier, 2017; Yan et al., 2017; Kumar and Kelly, 2017; Perry et al., 2017; Shore et al., 2018; Min, Xue and Wang, 2018; Noonan and Fairclough, 2018; Ogden et al., 2018; Chen et al., 2019

Assessment of obesity and overweight in children and adolescents

Sources: Brazil, 2011; World Health Organization, 2006; de Onis et al., 2007

Stature per age: is the index that best reflects the cumulative effect of adverse conditions on growth, and is considered the most sensitive to measure the population's quality of life.

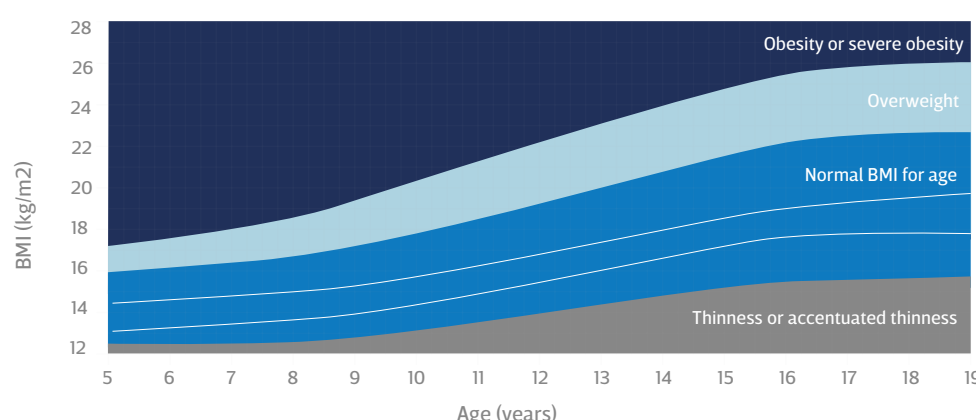


Note: illustrations based on the standard growth curves for girls aged 5-19 years, developed by the World Health Organization and adopted by the Ministry of Health in Brazil, and included in the child and adolescent health handbook.

The child and adolescent health booklet offered by the Ministry of Health is the main instrument for monitoring the growth of children and adolescents.



BMI per age: useful for identifying excess weight



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

Comparison of Nutritional Status (%) according to BMI per age in children and adolescents in 2008 and 2018, according to SISVAN

Brazil, 2019; IBGE, 2019; IBGE, 2013

Children under 5 years of age

	Accentuated thinness	Thinness	Eutrophy	Risk of overweight	Overweight	Obesity
Expected in a healthy population	0.13%	2.14%	81.85%	13.59%	2.14%	0.13%
CITY OF RIO DE JANEIRO (CRJ)						
2008 (n=17,671)	3.0%	1.9%	61.3%	19.8%	8.0%	5.9%
2018 (n=79,622)	9.7%	2.9%	51.5%	17.1%	8.0%	10.8%
STATE OF RIO DE JANEIRO (SRJ) (POPULATION: 2008- 1.137.134 2018- 1.127.818)						
2008 (n=65,665)	4.1%	2.9%	59.0%	18.4%	7.9%	7.7%
2018 (n=216,108)	5.8%	2.8%	55.0%	18.8%	8.9%	8.7%
BRAZIL						
2008 (n=2,011,279)	4.5%	3.4%	58.6%	17.7%	7.8%	8.0%
2018 (n=5,018,499)	2.8%	2.9%	59.6%	19.1%	8.8%	6.9%

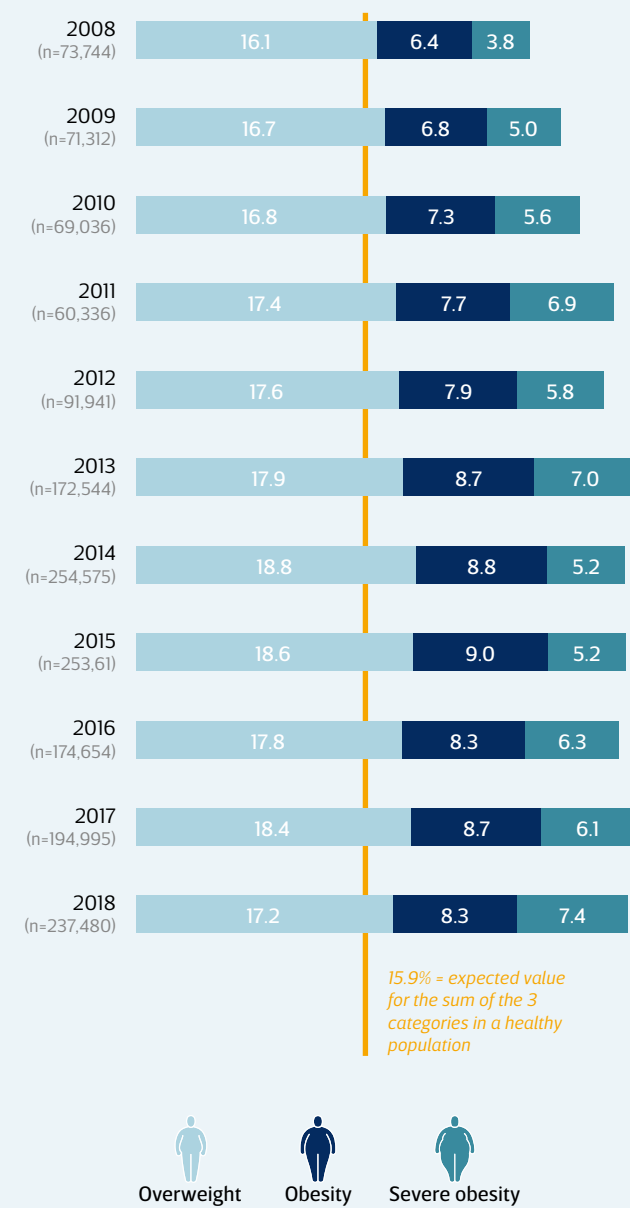
equivalent to 5.8% of IBGE's +5 years old population projection for the year, and represents users of SUS primary care

equivalent to 19.2% of IBGE's +5 years old population projection for the year, and represents users of SUS primary care

Excess weight historical data series according to BMI for the ages of 5-19 years in the city of Rio de Janeiro, according to SISVAN

*Groups of 5-9 and 10-19 years presented similar %, and for this reason it was decided to join the age groups

Source: Brazil, 2011; Brazil, 2019



15.9% = expected value for the sum of the 3 categories in a healthy population

Overweight Obesity Severe obesity

Children and adolescents (5-19 years)

*The groups of 5-9 and 10-19 years presented similar %, and for this reason it was decided to join the age groups

	Accentuated thinness	Thinness	Eutrophy	Overweight	Obesity	Severe obesity
Expected in a healthy population	0.13%	2.14%	81.85%	13.59%	2.14%	0.13%
CITY OF RIO DE JANEIRO (CRJ)						
2008 (n=73,744)	2.5%	2.2%	68.9%	16.1%	6.4%	3.8%
2018 (n=237,480)	5.8%	2.9%	58.4%	17.2%	8.3%	7.4%
STATE OF RIO DE JANEIRO (SRJ) (Population: 2008- 3.819.361 2018- 3.358.594)						
2008 (n=280,539)	3.0%	2.9%	67.3%	15.8%	6.4%	4.5%
2018 (n=709,288)	3.5%	2.2%	60.9%	18.1%	9.1%	6.2%
BRAZIL						
2008 (n=8,913,100)	3.3%	3.4%	69.1%	14.5%	5.5%	4.2%
2018 (n=18,569,368)	1.9%	2.9%	64.9%	17.6%	8.3%	4.4%

equivalent to 7.3% of IBGE's 5-19 year old population projection for the year, and represents users of SUS primary care

equivalent to 21.1% of IBGE's 5-19 year old population projection for the year, and represents users of SUS primary care

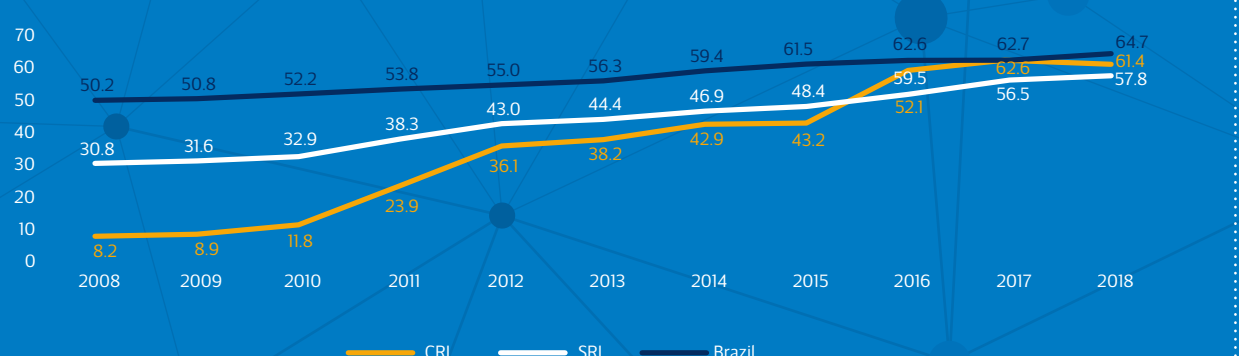
FACING THE ISSUE

In 2014, the Brazilian government signed the Rome Declaration, committing itself to food and nutrition policies in the context of the United Nations Decade of Action for Nutrition (2016-2015). After signing, Brazil announced its Commitments for the period in official publication, covering various sectors and institutions.

Source: FAO, 2014; Brazil, 2016

History of median annual coverage (%) of the Family Health Strategy

Source: Ministry of Health (online), 2019.



The recommendations call for all countries to remedy the obesogenic environments, take a life course approach in promoting obesity prevention and improve the treatment of children who already have obesity.

PUBLIC POLICIES FOR CHILD AND ADOLESCENT OBESITY

Programa Saúde na Escola - PSE (School Health Program)

School Health Program (PSE) aims at the permanent integration and articulation of education and health, improving the Brazilian population's quality of life.

Crescer Saudável (Healthy Growth Program)

The Healthy Growth Program is a Ministry of Health initiative aimed at facing childhood obesity. It includes actions for promoting healthy eating and physical activities, assessment of nutritional status in schools, and primary care for children identified with obesity.

PSE RESOURCE	2017/ 2018 CYCLE			2019/2020 CYCLE		
	Total participating municipalities	Total participating schools	R\$ Total	Total participating municipalities	Total participating schools	R\$
CRJ	1st year	1	673,020	1	548,398	690,676.00
	2nd year	0	0	-	-	-
SRJ (92 municipalities)	1st year	87	1,311,600	92	1,352,286	2,187,192.00
	2nd year	42	350,255	-	-	-
BRAZIL (5,570 municipalities)	1st year	5,099	20,857,262	5,288	22,425,160	56,726,364.00
	2nd year	2,572	10,597,741	-	-	-

Source: Ordinance 2706/2017, Ordinance 3662/2018, Ordinance 2.264/2019

HEALTHY GROWTH RESOURCE	2017/2018 CYCLE		2019/2020 CYCLE		
	Total priority municipalities*	R\$ Total	Total priority municipalities*	R\$	
CRJ	1st year	1	700,000.00	1	490,000.00
	2º ano	0	-	-	-
SRJ (92 municipalities)	1st year	41	7,200,000.00	87	1,741,513.44
	2º ano	41	-	-	-
BRAZIL (5,570 municipalities)	1st year	532	71,370,000.00	3,947	38,829,649.61
	2º ano	548	-	-	-

* Priority municipalities were those with a population of over 30,000 inhabitants, SISVAN coverage greater than 10% in 2016, and an excess weight prevalence greater than 20% in 2016.

Source: Ordinance 2706/2017, Ordinance 3662/2018, Ordinance 2.264 / 2019

ONGOING STUDIES IN BRAZIL

NAME	OBJECTIVE	ENTITIES RESPONSIBLE	PERIOD
Open Call for Food and Nutrition Research CNPq Nº 26/2019	Support the country's scientific and technological development, and innovation in the areas of food and nutrition and health economics with a focus on food and nutrition actions (various bases and lines of research).	Awaiting the open call's result	2019-2021 (each research project will last 18-24 months after its selection)
Open call for facing and controlling obesity in the SUS context	Subsidize the implementation of actions to control and face overweight and obesity in municipalities in the state of Rio de Janeiro. Not specific to childhood obesity.	One executing group per state. In Rio de Janeiro: UERJ; UNIRIO; UFF; UFRJ; SES; SMS - RJ 2019	2019-2021
Brazilian national nutritional and food survey of infants (Estudo Nacional de Alimentação e Nutrição Infantil - ENANI)	Evaluate breastfeeding and complementary feeding practices, food intake, infant and maternal nutritional status, and micronutrient deficiency (hemoglobin, vit. A, vit. D, vit. E, vit. B1, vit. B6, vit. B12, folate, zinc, selenium, and ferritin) among Brazilian children <5 years old, according to the country's macroregions, rural and urban areas, age group and gender.	Executing: FIOCRUZ; UFRJ; UERJ; FIOCRUZ; UFF	2017-2020
National Survey of School Health (PeNSE)	Investigates information that allows us to know and assess the risk and protection factors for the health of Brazilian adolescents. In addition, it identifies the priority issues for the development of public policies focused on promoting health in school-age children, especially the Health at School Program.	IBGE in partnership with MS and with the support of the MEC	2009, 2012, 2015, 2019

CNPq - National Council for Scientific and Technological Development | FIOCRUZ - Oswaldo Cruz Institute Foundation | IBGE - Brazilian Institute of Geography and Statistics | MEC - Ministry of Education and Culture | SES - RJ - Rio de Janeiro State Department of Health | SMS - RJ - Rio de Janeiro Municipal Health Secretariat | State University of Rio de Janeiro (UERJ) | UFF - Fluminense Federal University | UFRJ - Federal University of Rio de Janeiro | UNIRIO - Federal University of the State of Rio de Janeiro

Send complaints, criticism and suggestions to desiderata@desiderata.org.br

