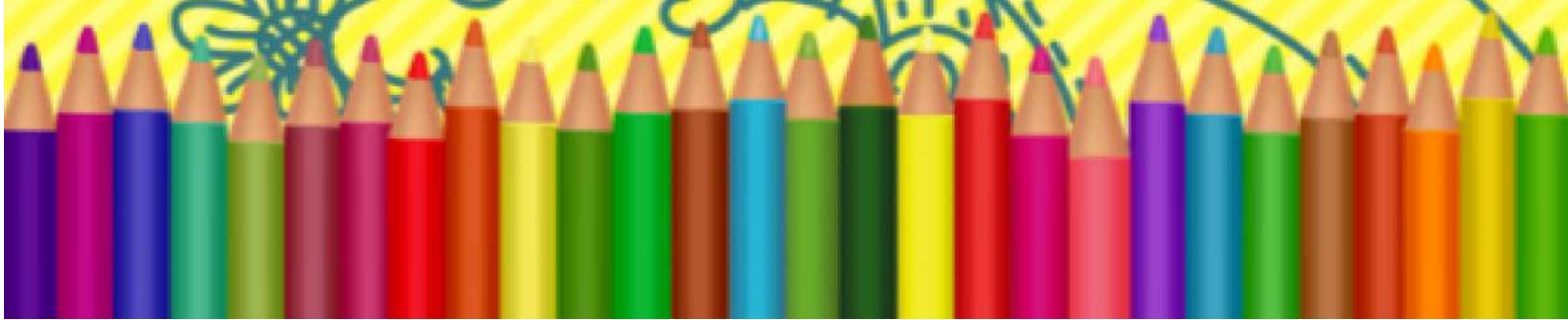


It's TIME to take care
of CHILDREN and
ADOLESCENTS!

REPORT CARD
BRAZIL 2018



REPORT CARD BRZIL 2018 IT'S TIME TO TAKE CARE OF CHILDREN AND ADOLESCNTES!

REPORT ON PHYSICAL ACTIVITY IN BRAZILIAN CHILDREN AND ADOLESCENTS

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INTRODUCTION

The theme of physical activity is gaining ground in global political agendas. In 2018, the World Health Organization (WHO) launched the Global Plan of Action for Physical Activity for 2018-2030¹.

This document presents the current situation of physical activity around the world, where it was shown that for every four school-aged youth, three do not meet the minimum recommended amount of physical activity for health¹.

A system of constant monitoring of physical activity levels of the population, including children and adolescents, is one of the actions recommended by the WHO as a way of assessing the health performance of each country¹.

In addition to WHO, other organizations around the world also recommend monitoring health indicators for school-age youth as one of the ways of assessing and planning the future².



In that sense, the Active Healthy Kids Global Alliance, originated from Active Healthy Kids Canada, leads the Global Matrix project², which in 2018 is in its third version. This project aims to monitor physical activity and health indicators of school children and adolescents around the world. Brazil has participated in this project since 2016 and in that year published the first Bulletin (Report Card Brazil 2016) on Physical Activity of children and adolescents^{3,4}.

This document is the second version of the Brazilian Bulletin on Physical Activity (Report Card Brazil 2018) of children and adolescents and aims to present the performance of Brazil in different indicators related to this theme.



WHY IS PHYSICAL ACTIVITY SO IMPORTANT?

The regular practice of physical activity promotes physical, mental and social health benefits of children and adolescents and must be present in all contexts involving this population in and out of school⁵. This healthy behavior must be stimulated by the physical and social environment so that children and adolescents develop in a healthy way and perpetuate this behavior over the years^{1,2,5}.

An immediate application of the regular practice of physical activity in the life of children and adolescents has attracted scientific and community attention, as it can improve the performance of academic activities^{6,7}. This is because physical activity has an influence on cognitive function and one of the hypotheses for this to occur is that PA promotes an increase in angiogenesis (formation of new blood vessels), increase in oxygen saturation and glucose release, improve in cerebral blood flow and increase in the levels of neurotransmitters, which leads to an overall improvement of the brain function⁶. A study published in 2017⁷ gathered information from 13,205 children around the world and showed that regular practice of physical activity promoted improvements in the academic performance of disciplines related to the following skills:

- ✓ **Calculus;**
- ✓ **Reading;**
- ✓ **Overall avareng of all disciplines.**



Thus, physical activity has to be prioritized not only because it promotes improvement in health indicators, but also because it helps improving the academic performance of children and adolescents.

METHODOLOGY

The Report Card Brazil 2018 was prepared from the effort of a group of eight researchers in the area of physical activity related to health from six different educational institutions around Brazil:

- Federal University of Santa Catarina (UFSC)
- State University of São Paulo (UNESP)
- Federal University of São Paulo (UNIFESP)
- State University of Maringá (UEM)
- Federal University of Sergipe (UFS)
- Federal Institute of Ceará (IFCE)
- Centro de Investigación en Fisiología del Ejercicio/Universidad Mayor/Chile

Each researcher had a research group composed of other professors and undergraduate and graduate students in the search for the main evidences on the different indicators present in the Brazil 2018 Bulletin. This strategy allowed a collective construction, under different views, about the Brazilian reality. Eleven different indicators related to physical activity were investigated in the Brazil 2018 Bulletin, and were divided into four dimensions:



Systematic reviews of published studies with a sample of Brazilian children and adolescents were carried out for each of the daily behaviors, health outcomes and two indicators of influence sources (family and friends, community and built environment)⁸⁻²¹. This strategy was used to filter out the best possible evidence on this subject in the country. This strategy was useful because it provided an overview of the country and the different geographic regions.

For indicators School and Strategies and Governmental Investments, analyses were based on official information from the Federal Government, in which official websites of the different Ministries of Brazil, national federal government surveys and technical reports on the subject were researched^{19,20}.

Systematic reviews^{8-18,21} were limited to filtering scientific articles with samples of children and adolescents from some Brazilian locality, and the search for evidence for all indicators covered the entire historical period up to the end of 2017.

In order to make the process of search and analysis transparent, a scientific paper was developed for each of the indicators surveyed. These articles contain all the methodological details and sources that have been included. These articles were published in the Brazilian Journal of Kinanthropometry and Human Performance⁸⁻²¹.

CLASSIFICATION OF INDICATORS

International score scheme for the Global Matrix 3.0 project

Brazil is succeeding with the vast majority of children and young people

A+ 94% - 100%

A 87% - 93%

A- 80% - 86%

Brazil is succeeding with more than half of children and young people

B+ 74% - 79%

B 67% - 73%

B- 60% - 66%

Brazil is succeeding with about half of children and young people

C+ 54% - 59%

C 47% - 53%

C- 40% - 46%

Brazil is succeeding with less than half of children and young people

D+ 34% - 39%

D 27% - 33%

D- 20% - 26%

Brazil is succeeding with few children and young people

F

Incomplete or insufficient data for score assignment

INC

EVALUATION OF INDICATORS

The Report Card Brazil 2018 evaluates 11 indicators related to the physical activity of children and adolescents of school age. For the obesity indicator, percentage values were used because this indicator is being suggested by the Report Card Brazil 2018 team to the Global Matrix project and a score attribution strategy has not yet been adopted.

Scores of the different indicators addressed in the Report Card Brazil 2018:

INDICADORES		NOTAS
DAILY BEHAVIORS	Overall physical activity	D
	Participation in organized sports	C+
	Active play	D+
	Active commuting	C
	Sedentary behavior	D-
HEALTH OUTCOMES	Physical Fitness	D
	Obesity	14,5%
SOURCES OF INFLUENCE	Family and friends	C-
	School	C
	Community and Built Environment	C-
GOVERNMENT STRATEGIES AND INVESTMENTS		D-

DAILY BEHAVIORS

OVERALL PHYSICAL ACTIVITY

D

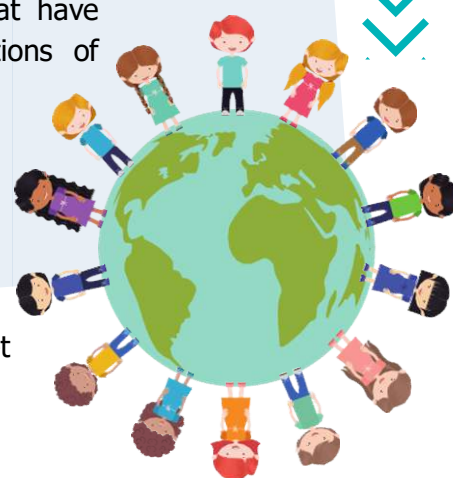
Regular practice of moderate to vigorous physical activity has been recommended for children and adolescents: the World Health Organization recommends that this population should practice physical activity for at least:

✓ **60 minutes per day, every Day of the week⁵**

To achieve this recommendation, opportunities for practice should be offered in different contexts (leisure, commuting, school and home), in order to contribute to a better physical, social and cognitive health condition of children and adolescents¹.

A systematic search was performed to obtain studies that have evaluated the prevalence of compliance with recommendations of global physical activity in Brazil.

- **62 different studies were found;**
- **No study was found with information from children 5 years or younger.**



31,1% of Brazilian children and adolescents met recommendations of global physical activity



39,6% vs 23,0%

6-12 years: 50,6%
13-18 years: 30,7%

INDICATOR'S GRADE				
Total	According to sex		According to age	
	Boys	Girls	6-12	13-18
D	D+	D-	C	D

HOW TO IMPROVE THIS SCENARIO?

Actions that create opportunities and spaces for the practice of physical activities in different contexts, such as school, home and neighborhood should be provided to increase the regular practice of physical activity among Brazilian children and adolescents. Opportunities for the practice of physical activities during leisure time should be created for the development of social interaction among practitioners in order to collaborate in the maintenance and regularity of this practice. In particular, older girls and adolescents represent groups that deserve special attention for actions to stimulate physical activity.

PARTICIPATION IN ORGANIZED SPORTS

C+

This topic was focused on sports participation, here defined as "a subset of structured physical activities oriented towards competitive objectives".

After all the search procedures were finalized, it was possible to identify:



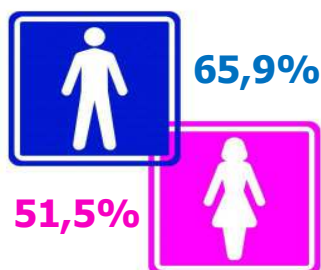
Brazil has several governmental programs designed to promote the participation of children and adolescents.

But there is no data available on the national prevalence of young people engaged in sports, and the effectiveness of such government programs also lacks evidence.



Data available in literature on sports participation of children and adolescents come from a small number of researches (n= 4) carried out in the Southern and Southeastern regions of Brazil (richest regions of Brazil), limiting inferences of national scope.

✓ **58,1%** of children and adolescents were engaged in organized sports in Brazil



INDICATOR'S GRADE		
Total	According to sex	
	Boys	Girls
C+	B-	C

HOW TO IMPROVE THIS SCENARIO?

Further efforts are needed to identify the number of young people engaged in sports (and in which sports), mainly because this type of epidemiological data is essential to guide effective actions to promote sports among young people. It is necessary to identify where (schools, public clubs) and how (necessary structure) sports practice can be offered to Brazilian young people (in their different spheres), since sports practice promotes cardiovascular, metabolic and bone gains that last into adulthood.

ACTIVE PLAY

D+

One of the most important moments of physical activity that substantially affects physical inactivity in children and adolescents is active plays²²⁻²⁴.

This concept is defined as a form of body movement in which children expend energy in a freely chosen, fun and unstructured way²⁴.



- Active plays have the potential to make a valuable contribution to children's general physical activity^{25,26}.
- The literature reports that this fun and free time of physical activity is considered important for the cognitive, physical and emotional development of children and young people²⁴⁻²⁶.

✓ **36%** of children and adolescents participate in active plays in Brazil¹⁰



47% vs 26%



INDICATOR'S GRADE

Total

According to sex

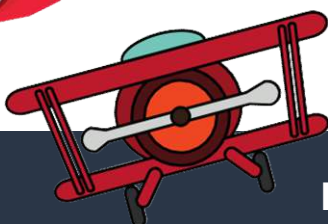
Boys

Girls

D+

C

D-



HOW TO IMPROVE THIS SCENARIO?

To encourage active play in children and adolescents, many actors such as the parents/guardians should engage in this purpose, stimulating physical activity from the earliest ages of the child; schools should offer spaces and schedules to provide the free movement of children; cities should be prepared to stimulate active play of children through the provision of parks, safe places, and clean environments for the practice of physical activity.

ACTIVE COMMUTING

C

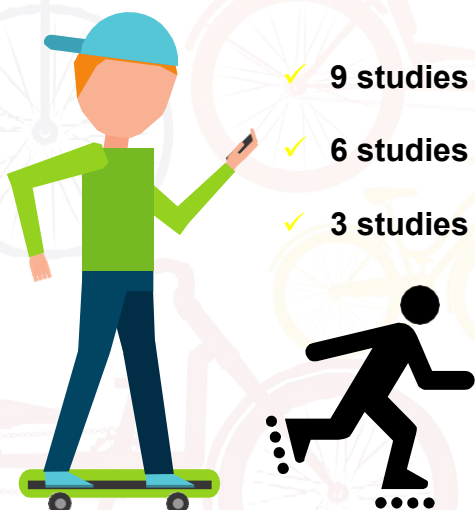
Studies have shown that children and adolescents involved in active commuting to school (ACS), such as walking and cycling, accumulate more physical activity and have lower risks of being overweight and having diabetes than those who use motorized commuting (car or buses)^{27,28}.

Due to the global decline in physical activity and increase in sedentary behavior in the last decade, the promotion of ACS has become an important topic, since it is part of international initiatives aimed at increasing the level of physical activity in the population^{28,29}.

This information may help public health authorities to implement and promote ACS to combat obesity and chronic-degenerative diseases associated with lack of physical activities³⁰. The publication of such data can contribute to the planning of policies and programs that consider the regional characteristics of ACS and strategies to promote these practices.

After performing a systematic search, 19 articles were selected¹¹. Only 8 presented TAE values according to sex, and boys and girls used TAE in a similar way.

- ✓ **9 studies (47%):** More than half of students participated in TAE,;
- ✓ **6 studies (32%):** Less than half participated in active commuting;
- ✓ **3 studies (16%):** Presented only results according to sex.



HOW TO IMPROVE THIS SCENARIO?

The prevalence of ACS for Brazilian children and adolescents varies according to the regions in Brazil. Local authorities should be encouraged to create information source monitoring systems to generate standardized and detailed TAE reports to support planning and evaluation of public policies. This type of information can help in the fight against physical inactivity.



SEDENTARY BEHAVIOR

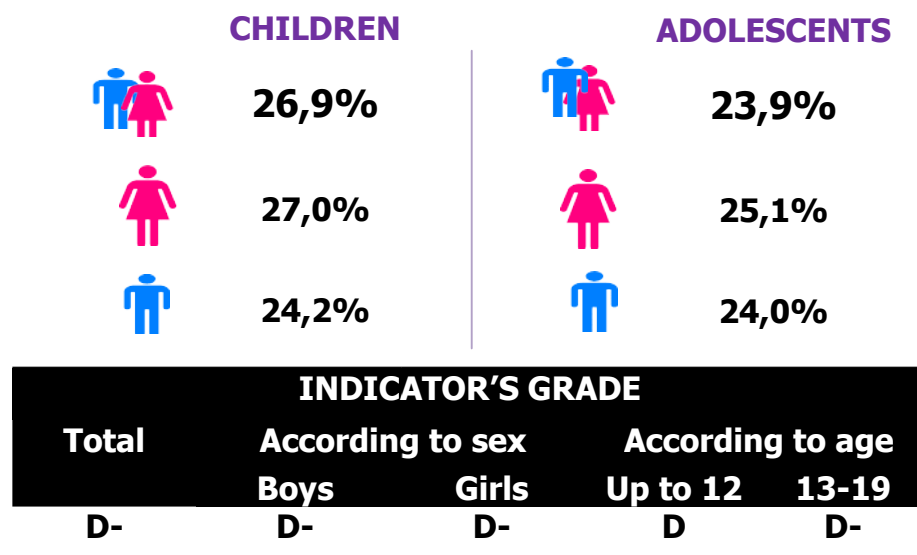
D-

Characterized by low physical movement and low energy expenditure³¹, sedentary behavior has been present in the lifestyle of children and adolescents³², generating negative health implications³³.

Recreational screen time has become the most frequent sedentary behavior indicator of these age groups, with indications for its reduction³⁴.

In Brazil, a systematic review with 105 studies found estimates of sedentary behavior with different cutoff points¹², using Canadian³⁴ and American³⁵ guidelines or using arbitrary cutoff points.

In this study, the sedentary behavior indicator assessed was the percentage of children and adolescents who met Canadian recommendations³⁴.



HOW TO IMPROVE THIS SCENARIO?

The time spent in sedentary behavior, in addition to being the opposite to the time dedicated to light physical activities (physical movements performed in activities of the daily living) can also impair the regular practice of physical activity in major intensities. Thus, it is suggested to increase the time spent in light physical activity, such as walking small distances and promoting postural changes, along with regular practice of moderate to vigorous physical activity for at least sixty minutes daily. Special attention to adolescents, regardless of sex, should be given.





HEALTH OUTCOMES



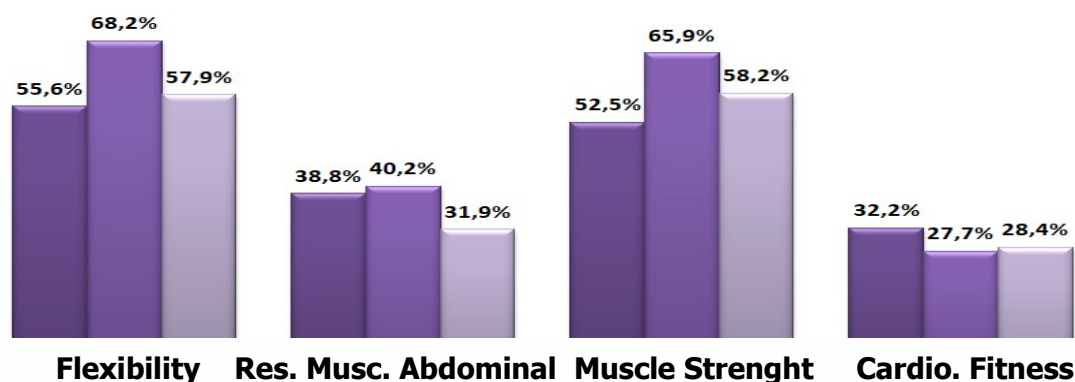
PHYSICAL FITNESS

D

Physical fitness has been characterized as the ability to perform daily activities with vigor and resistance to fatigue and has been considered an important health marker, since adequate levels of physical fitness have been associated with lower chances of hypertension, cholesterol and elevated triglycerides and better cognitive performance during childhood and adolescence³⁶.

- For this report, the physical fitness indicator was formed by cardiorespiratory fitness, muscular strength, muscular endurance and flexibility components¹³⁻¹⁶
- The studies found in Brazil used health-related physical fitness cutoffs of PROESP/BR³⁷, AAHPERD³⁸, FITNESSGRAM³⁹ and CSEP⁴⁰ physical test batteries.
- Most studies found on physical fitness³³⁻³⁶ deal with cardiorespiratory fitness, for that reason, the information of this component had greater weight in the attribution of the indicator score.

The following is the prevalence of children and adolescents who met the health criteria:



HOW TO IMPROVE THIS SCENARIO?

Physical fitness is a product of behaviors adopted by children and adolescents. The improvement of these components should be accomplished through structured and unstructured sports practices, active activities during the school period and active plays during the leisure period.




OBESITY



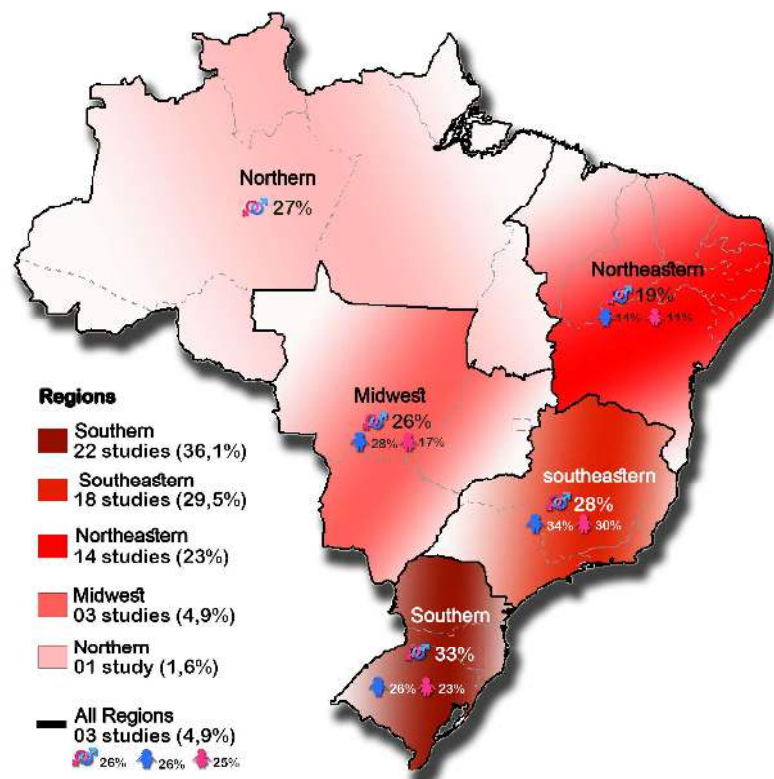
Due to its high and increasing prevalence, obesity has become a global epidemic that affects practically all age and economic groups, being one of the most relevant public health problems. Nowadays, around 2.8 million people die every year in consequence of overweight and its associated comorbidities⁴⁷.

In Brazil, childhood overweight and obesity are pivotal public health issue, affecting all ages and regions, with a diversified prevalence, mostly due to the socioeconomic differences among the country regions⁵⁸.

A systematic review was performed in order to analyze the scientific production regarding the prevalence of weight excess (i.e. overweight and obesity) in Brazilian children and adolescents²¹, as showed below:

	OVERWEIGHT	OBESITY	WEIGHT EXCESS
	14,8%	12,2%	25,7%
	14,8%	17,8%	31,1%
	14,8%	14,5%	27,9%

The Southern region presented the highest prevalence of weight excess (33.2%) and overweight (20.1%), and the Southeastern reported the highest prevalence of obesity (18.2%).



HOW TO IMPROVE THIS SCENARIO?

Brazil presents alarming data on the prevalence of overweight among children and adolescents, with noticeable variations according to age, gender and country region. Thus, due to the obesity associated comorbidities in both childhood and adulthood, action plans to prevent and treat obesity should, in fact, have priority among the country's health policies.



SOURCES OF INFLUENCE



FAMILY AND FRIENDS

C-

The practice of physical activity is considered as any physical effort above rest levels⁴¹.

This type of behavior is of paramount importance for health and should be encouraged from the earliest ages.

For the present report, the Brazilian literature sought information on the possible relationships between physical activity of children and adolescents and the practice of physical activity by the parents of these youngsters, as well as the practice of physical activity also of friends. It is believed that children and adolescents with physically active parents are more likely to be physically active⁴².

Of the **thirteen studies** that included this indicator, in 11 of them (84.6%), positive **relationship between practice of physical activity by parents and children** was observed. However, the score of this indicator was C-, which shows that Brazil is succeeding with less than half of these young people in this indicator.

- In one of the studies, 29.8% of parents reported encouraging physical activity in boys and 14% in girls⁴³;
- Children of parents who practiced physical activity in their own childhood and adolescence were more likely to be more active⁴⁴;
- Two studies (15.3%) observed that the prevalence of physical activity was higher in boys and girls with social support from friends^{43,44}.

HOW TO IMPROVE THIS SCENARIO?

Based on the results obtained, health promotion actions should be aimed at incrementing the practice of physical activity, considering the social environment as a whole, contemplating the parents and friends of these young people. Parents and friends should participate actively in this process by practicing and encouraging young people to be physically active.

SCHOOL

C



This study considered that the school is where young people spend a great deal of time, being characterized as the environment that gathers the ideal settings so that students adopt several healthy behaviors and become physically active^{19,45-49}.

In this perspective, the structure and the adequate use of this space can propitiate the adoption of certain behaviors that perpetuate after the years of schooling⁴⁷⁻⁴⁹.

For the purposes of information contained in this document, any policies, organizational factors (e.g., infrastructure, responsibility for policy implementation) or student factors (for example, physical activity options based on age, sex or ethnicity) in the environment that may influence opportunities for physical activity were considered.

- ✓ Among the indicators considered, "presence of a physical education professional for physical education classes" and "participation of parents, relatives and friends in the indication and access to opportunities for physical activity in the school environment" did not reach a score that could generate a reliable classification¹⁹.

	YES	NO
Presence of active school policies	96,5 %	3,5 %
Appropriate amount of physical education classes	27,3%	92,7%
Facilities and equipment support Physical Activity practices	84,4%	15,6%

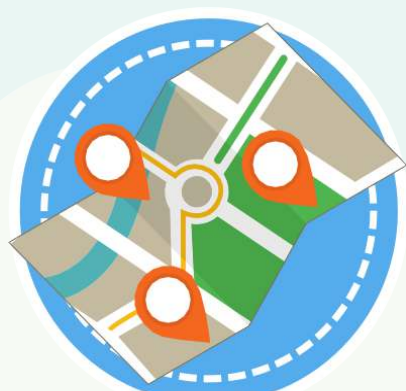
HOW TO IMPROVE THIS SCENARIO?

Considering that the presence of the specialist in physical education classes is established by the Brazilian legislation, national surveys⁴⁵ should be more objective on this issue, facilitating confirmation or not of the presence of the physical education professional in actions aimed at the adoption of a physically active behavior in the school environment. It should be taken into account that the participation of parents, family members and friends should be encouraged in the school and extra-school physical education actions^{46,48,49}, promoting interaction with students, favoring their insertion in the regular practice of physical activity, while behavior.



COMMUNITY AND BUILT ENVIRONMENT

C-



The attractive, accessible, good quality and safe community environment (spaces, structures and programs) can be a facilitator in engaging children and adolescents in physical activities^{50,51}. Positive perception of these indicators promotes additional health, social, economic and urban benefits⁵².

The results of the systematic review¹⁸ allowed us assigning the following scores to indicators related to this theme:

% of children and / or parents who perceive their municipality doing good deeds for health promotion	B-
% of children and / or parents who reported the presence of structures, programs, parks, playgrounds accessible to the community	C
% of children and / or parents who reported residing in a safe neighborhood, where they can be physically active	C-
% of children and / or parents who reported good conditions of structures, parks, playgrounds in their community safe for use	C
% of municipalities and / or communities that reported policies aimed at promoting physical activities	INC
% of municipalities and / or communities that reported having infrastructures (e.g., sidewalks, trails, lanes, bicycle lanes) especially for promoting physical activities	INC

The prevalence of community environment indicators in youth perceptions ranged from 40% to 60%. Considering that safety is an environment indicator that has strongly influenced physical activity in Brazil and obtained the lowest score



HOW TO IMPROVE THIS SCENARIO?

Strengthening the positive perception of the community environment for young people is important to facilitate the practice of physical activity, according to their interests and conditions of access, proximity and quality. The perception of safe places for the practice of physical activity, mainly in leisure and commuting, seems to be a primordial element in the promotion of an environment favorable to this practice.

GOVERNMENT STRATEGIES AND INVESTMENTS



GOVERNMENT STRATEGIES AND INVESTMENTS

D+



This indicator deals with governmental strategies and investments to promote the practice of physical activity among children and adolescents. Based on the search conducted on the official federal government websites, it was possible to find seven programs⁵³⁻⁵⁷ at the federal level, which somehow deal with the promotion of physical activity among children and adolescents. These programs have been distributed in different Ministries (Culture, Defense, Education, Sports and Health)⁵³⁻⁵⁷.

The positive point is that Brazil has federal programs that, even in a secondary way, aim to promote physical activity among children and adolescents of school age. Most of these programs suggest the practice of sports. There are also programs that are focused on the construction of physical spaces of social integration, and these spaces are destined for sports and recreational activities.

The score attributed was **D+**. This score is justified for the following reasons:

- ✓ None of these programs have as main objective the promotion of physical activity among children and adolescents. This objective is secondary in these programs;
- ✓ The amount of financial resources allocated for each program per year for each state of the federation was not available so that it could be verified whether the investment in physical activity is appropriate;
- ✓ There is no information about the evaluation of the effectiveness of these programs with regard to the promotion of physical activity among children and adolescents;
- ✓ There is no information about the impact of these programs on the levels of physical activity of children and adolescents;
- ✓ There is no information about the planning and / or future perspectives (investments, expansion) of these programs regarding the promotion of physical activity among children and adolescents.



Brazilian Government programs that deal, in some way, with the promotion of physical activity among children and adolescents:

Program	Year of creation	Ministry	Main aim	Dimension
<i>Unified Arts and Sports Centers</i> ⁵³	2011	Culture	To include in the same space cultural programs and actions, sports and leisure practices, training and qualification for the labor market, social assistance services, violence prevention policies and digital inclusion	Physical infrastructure
<i>Armed forces in sport</i> ⁵⁴	2003	Defense	To democratize access to the practice and culture of sport and promote the integral development of children and adolescents, offering educational sports activities, leisure activities and complementary activities	Physical and personnel infrastructure.
<i>More Education</i> ⁵⁵	2007	Education		
<i>Second time</i> ⁵⁶	2003	Sports	To democratize the access of children and adolescents to contents of corporal practices through quality educational sport	Infrastructure of personnel, sports equipment and uniform.
<i>Sport and Leisure in the city</i> ⁵⁶	2011	Sports	To democratize leisure and recreational sports	Personnel infrastructure.
<i>Center for Initiation to Sport</i> ⁵⁶	2013	Sports	To expand the offer of infrastructure of qualified public sports equipment, encouraging the practice of sports in areas of social vulnerability of large Brazilian cities	Physical infrastructure
<i>Health gym</i> ⁵⁷	2011	Health	To promote corporal practices and physical activity, promotion of healthy eating, health education, among others, in addition to contributing to the production of care and healthy and sustainable ways of life of the population	Physical and personnel infrastructure.

HOW TO IMPROVE THIS SCENARIO?

The creation of national programs whose main aim is the promotion of the physical activity among children and adolescents is urgent. Current programs are important because they meet different demands of society. The promotion of physical activity in this population is not only by the practice of sports, but also with it. It is necessary that current programs inform resources that are exclusively intended for actions with children and adolescents. In addition, information that addresses the prospects and future budget planning of these programs is also needed



FINAL COMMENTS

The second version of the Report Card Brazil was a joint effort of different research groups working on the theme of health-related physical activity in children and adolescents in the country. This union of different points of view and different researchers with the same intention to seek the best evidences for different aspects related to the theme of physical activity demonstrated that Brazil has already produced many studies on different themes linked to physical activity. In this sense, it was possible to observe that there is a long way to go in terms of better evidence on each of the indicators approached in this report of scores, since most surveys published with sample of children and adolescents in Brazil made use of self-assessment to obtain objective metric data (e.g., physical activity weekly frequency, duration and intensity).

The aspects related to the school environment and the built environment need to be better investigated and, above all, more research should be carried out in rural regions, regions with high social vulnerability and regions with low socioeconomic level so that the next evidences to be published report the different realities of Brazil.

In general, Brazil performed from moderate to weak in all indicators. This shows that urgent measures to promote physical activity in different contexts of children and young people are necessary to modify the future of the country. One of the most important aspects of this project is that the information relates not only to the individual (e.g., daily behaviors) but also to macro-structural aspects that influence daily behavior. It was observed that such aspects are beyond the control of the individual and that a range of contextual actions is necessary to change this scenario.

"It is time to take care of children and adolescents" is, above all, a message for society, governments, families and individuals to charge each other and their representatives, the role each one plays for a more humane, honest, healthy and equitable future for Brazilian children and adolescents.

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