CHILDREN AND YOUTH ARE THE FUTURE OF BRAZIL!

REPORT CARD BRAZIL 2022

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REPORT CARD ON PHYSICAL ACTIVITY IN BRAZILIAN CHILDREN AND ADOLESCENTS

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REPORT CARD BRAZIL 2022

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REPORT CARD ON PHYSICAL ACTIVITY IN BRAZILIAN CHILDREN AND ADOLESCENTS

SUPPORT

and the

- Group of Studies and Research in Kinanthropometry (GEPECIN/UDESC)
- Study Group on Physical Activity and Health (GEAFS/UNESP)
- Research Group on Biodynamics of Human Performance and health (GPBIOS/UFAL)
- Laboratory of Human Performance, Study Group on Education, Physical Activity and Health (GEEAFyS/UCM)
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NUCIDH

In 2021, the Brazilian federal government launched the "Physical Activity Guide for the Brazilian population" (1). This document systematizes in a single file conceptual information on the subject through an easyto-understand language to be disseminated throughout the country.

INTRODUCTION

Furthermore, this document highlights the national recommendations for the practice of physical activity in different population subgroups, thus considered a useful instrument for teachers, public managers and the population in general. The Brazilian guide is in line with recommendations of the World Health Organization (WHO) (2,3) in which the following stand out:



School-age children and adolescents should accumulate at least 60 minutes of daily moderate to vigorous-intensity physical activity

> Preference should be given to physical activities that make increase breathing and heart rate

As part of the 60 minutes or more a day, at least 3 days a week, muscle and bone strengthening activities should be included, involving movements such as jumping, pulling or pushing.

Since the end of 2019, the world has been experiencing a pandemic unprecedented in the last 100 years. The COVID-19 pandemic has affected the population in different and tragic ways. One of these ways that directly impacted the young population was social isolation and the closing of schools, in which young people could not attend the school environment. With the advance of vaccination in Brazil, social isolation is being reduced and the return to schools is gradually being resumed. However, the magnitude of this tragic impact on the education and health of the school population will only be known in the future.





More than ever, hope for a better future in Brazil is focused on future generations who will be able to rebuild Brazil after different tragic events that have taken place in recent years, such as the COVID-19 pandemic, corruption scandals in politics, gender intolerance, racial intolerance, religious intolerance, extreme poverty and high unemployment rates that have affected the entire Brazilian population.

Brazilian children and adolescents will undoubtedly be able in the medium and long term to take actions and paths different from those taken by the current generation of adults in Brazil who, in some instance, are responsible for the tragic events that have affected the country.

In this sense, monitoring and caring for the health of children and adolescents in Brazil is urgent, because only then will Brazil have a healthy generation ready to face the decisions that will come in the future!



This report presents a series of physical activity indicators directly related to the health of children and adolescents. All indicators presented here have sufficient scientific evidence to demonstrate the impact on improving physical and mental health (1-3), which is essential for the healthy growth and development of this population.

Thus, the 2022 Report Card Brazil on physical activity in Brazilian children and adolescents calls for the country to take care of the future and understand that:



"Children and youth are the future of Brazil"!



METHODOLOGY

In the 2022 Report Card Brazil on physical activity in Brazilian children and adolescents, a group of experts led by 10 Professors Ph.D gathered the best possible evidence on the physical activity indicators of children and adolescents in Brazil. The higher education institutions that developed this process were:

- Federal University of Santa Catarina (UFSC) (Coordinating institution)
- Catholic University of Brasilia (UCB)
- Federal Institute of Ceará (IFCE)
- ✓ Federal University of Alagoas (UFAL)
- ✓ Federal University of Sergipe (UFS)
- 🖌 São Paulo State University (UNESP)
- 🖌 State University of Maringá (UEM)
- ✓ Universidad Católica del Maule (UCM)
- ✓ Universidad de Santiago de Chile (USACH)
- ✓ University of the State of Santa Catarina (UDESC)



Each of the 10 experts involved their research group, composed of other professors and undergraduate and graduate students from the aforementioned universities and institutes. All 10 specialists are Permanent Professors in stricto sensu Graduate Programs, which demonstrates their responsibility in gathering the best possible evidence on the topics discussed here. Furthermore, the involvement of specialists from different regions of Brazil allowed for a collective construction of the entire process and a look consistent with the different realities existing in Brazil.

The Report Card Brazil 2022 transparency process is a hallmark of this report. For all indicators presented here, an exhaustive but necessary evidence gathering process was conducted. Initially, the methodology of this project was published in the form of a protocol and published on the OSF platform (https://osf.io/sjgv9). The document is freely accessible to anyone interested in reading it.



This report presents information from 13 indicators distributed in four dimensions:



To gather the best evidence available in Brazil on each indicator, the following strategies were adopted:

Fourteen systematic reviews (4-54) were conducted covering the following indicators: family and friends; community environment; global physical activity; participation in sports; active play; active commuting; sedentary behavior; sleep; physical fitness; obesity; mental health.

In all systematic reviews, only studies with a sample of Brazilian children and adolescents published up to December 2019 were considered eligible – that is, before the COVID-19 pandemic. This strategy was adopted because in 2020 the COVID-19 pandemic devastated Brazil and changed the dynamics of the Brazilian population, including scientific research. Thus, studies published from 2020 onwards were not considered eligible in this version of the Boletim Brasil.

For the school indicator, an original study (55) was conducted with public data from the:

"Anísio Teixeira" National Institute of Educational Studies and Research (INEP).

For the indicator related to Government Strategies and Investments, analyses were based on official information from the Federal Government.

in which official websites of the different Ministries in Brazil, national surveys of the federal government and technical reports on the topic were researched (56-72).

In order to make the search and analysis process transparent, a scientific article was developed for each of these indicators (4-15,55). For the participation in sports indicator (16-40) and for the flexibility component of physical fitness (41-54), no article was published, but a systematic search process was developed. These articles contain all the methodological details and the reference sources that were included. Furthermore, in all articles, the results are discussed in depth and improvement strategies for each indicator are presented. The scientific articles are published as open access and free of charge in the Brazilian Journal of Kinanthropometry and Human Performance (4-18).

CLASSIFICATION OF INDICATORS

International grading scheme for the Global Matrix 4.0 project Active Healthy Kids Global Alliance (73):





AND INVESTMENTS

ASSESSMENT OF INDICATORS

The Report Card Brazil 2022 publishes the evaluation of 13 indicators related to physical activity for school-age children and adolescents. For the obesity and poor mental health indicator, percentage values were used because these indicators are not suggested by the Global Matrix project and, therefore, there is no grade assignment for them. However, the Report Card Brazil 2022 team understands that these indicators are important to be investigated and monitored in Brazilian children and adolescents. The Sleep indicator is also not suggested by the Global Matrix project; however, it was included in the Report Card Brazil 2022 due to the high amount of evidence supporting that this indicator is part of the 24-hour movement behavior.

Grades of the different indicators addressed in the Report Card Brazil 2022

INDICATORS		GRADE
DAILY BEHAVIORS	Overall Physical Activity Organized Sport and Physical Activity Active Play Active Transportation Sedentary Behaviours Sleep	D C- F C D C
HEALTH OUTCOMES	Physical Fitness Obesity Poor Mental Health	D+ 11,7% 37,8%
SOURCES OF INFLUENCE	Family and Peers School Community and Environment	C- B C
GOVERNMENT STRATEGIES		D+



DAILY BEHAVIORS

OVERALL PHYSICAL ACTIVITY

The overall physical activity (PA) indicator considered the following recommendations:

Percentage of children and young people who meet global PA recommendations

At least 60 minutes of daily moderate to vigorous PA (1-3) Percentage of preschoolers who meet the Canadian PA Guidelines for Early Years

At least 180 minutes of daily PA at any intensity (74)

These prevalence rates (weighted averages) were calculated by adding the number of cases across all included studies, divided by the sum of the number of participants in these studies, multiplied by 100. The estimate was calculated by combining update studies and those from previous versions of the Report Card Brazil for this indicator.



ORGANIZED SPORT AND PHYSICAL ACTIVITY

Participation in organized sports among children and adolescents has shown to be a possibility to increase levels of physical activity, since it is one of the most popular forms of leisure among young people (75,76). Furthermore, it is noteworthy that the sports practice environment is an important context for the development of identity, emotions, psychological skills and social relationships (76). Information from Report Card Brazil 2022 on this indicator comes from a systematic literature search that identified the best possible evidence on the percentage of children and adolescents in Brazil involved in the practice of organized sports (16-40). To this end, 25 scientific articles published between 2003 and 2020 were identified with the objective of estimating the prevalence of Brazilian children and adolescents regarding participation in organized sports.



Regarding the prevalence found, data showed prevalence of sports participation ranging from 15.0% to 73.2%

Average prevalence of 44.8% among children and adolescents (16-40) Most of these articles were developed with a sample of young people from the Southern

Furthermore, two studies considered all geographic regions of the country. 19,2%

57.7%

15_40/

The prevalence of sports participation was higher in males

PERCENTAGE OF MALES

63,1%

PERCENTAGE OF FEMALES

35,4%

ACTIVE PLAY

One of the most important moments of physical activity that substantially affects physical inactivity in children and adolescents is active play (77-79). This concept is defined as a form of body movement in which children expend energy in a freely chosen, fun and unstructured way (77). Active plays have the potential to make a valuable contribution to the children's global physical activity (77-78). 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 people (77-79).

From the two systematic reviews developed for the Report Card Brazil 2022 (13,80) carried out in studies with Brazilian children and adolescents, it was possible to find eight studies. However, many of these studies did not analyze leisure activities separately. For the present version of the Report Card Brazil, we have added studies on Active Play according to the definition of the Global Matrix project (73). Brazil has six surveys that have analyzed Active Play in children and adolescents. However, these studies were restricted to analyzing the fact of playing or not playing, without specifying the time spent in activities. All six studies have cross-sectional design. All six studies have local sample. No study has national sample. Such studies can be accessed in published systematic reviews (13,80).



How to improve this scenario?

To encourage active play in children and adolescents, many actors must engage in this purpose, such as parents/guardians of children and young people who must encourage physical activities from early ages; schools must offer spaces and schedules to provide the free movement of young people; cities must be prepared to encourage active play for children by offering parks, safe places and clean environments for the practice of physical activity.

ACTIVE TRANSPORTATION

Active transportation refers to any form of human-powered transport – walking, cycling, using a wheelchair, skating or skateboarding.

Studies have shown that children and adolescents engaged in active transportation to school, such as walking and cycling, accumulate more time spent in total physical activity and are at lower risk of being overweight and obese, having metabolic syndrome and diabetes than those who use motorized commuting such as car or bus (81-83).

Due to the global decline in physical activity and increase in sedentary behavior in the last decade, the promotion of active transportation to and from school has become an important topic, as it is part of the international initiative aimed at increasing the level of physical activity in the population.

The use of active transportation was higher than passive transportation on six occasions: 70,6% x 29,4% 61,7% x 38,3%

66,7% x 33,3%58% x 42%55,2% x 44,8%63% x 37%

While passive transportation was higher in four occasions:
48% x 52% 41,2% x 58,8%
21,8% x 78,2% 18,7% x 81,3%

Among the eight articles selected, two articles were carried out with national data from all geographic regions of Brazil and the Federal District

(Rondônia) 2 studies (Paraíba e Ma</mark>ranhão)

> 1 study (São Paulo)

2 s<mark>tudi</mark>es (Paraná e Rio Grande do Sul)

> PERCENTAGE OF MALES

1 study

Percentage of children and young people who use active transportation to and from somewhere

PERCENTAGE 52,4% OF FEMALES

How to improve this scenario?

51%

This information can be useful to public health authorities for the implementation and promotion of active transportation to school in the fight against overweight and obesity in children, as well as chronic degenerative diseases associated with lack of physical activity. Authorities should be encouraged to build active school transportation monitoring systems to support public policy planning and evaluation.

SEDENTARY BEHAVIOURS

The sedentary behaviours indicator considered the following recommendations: percentage of children and young people who meet the Canadian Sedentary Behavior Guidelines (4):

- Aged 3-4 years: less than one hour of screen time per day;
- Aged 5-17 years and adults: no more than two hours of screen time per day).

Thus, a global estimate of the prevalence of compliance with sedentary behavior recommendations was presented for the total sample and by sex. Global mean prevalence was calculated to demonstrate the central tendency for prevalence. These prevalence rates (weighted averages) were calculated by adding the number of cases in all analyzed studies divided by the sum of the number of participants included in these studies, multiplied by 100. The estimate was calculated by combining update studies and those from previous versions of the Report Card Brazil for this indicator (4).

A total of 159 articles (based on 118 different studies) on sedentary behaviours were analyzed (4). Information on indicators, grades, general prevalence and by sex for sedentary behaviours recommendations are presented below, and it could be inferred that:



SLEEP

Sleep duration indicators were as follows: percentage of children and young people who meet the Canadian sleep recommendations by age group (10):

- 1-2 years: 11 to 14 hours per night;
- 3-4 years: 10 to 13 hours per night;
- 5-13 years: 9-11 hours of uninterrupted sleep per night;
- 14-17 years: 8 to 10 hours of uninterrupted sleep per night.

Thus, a global estimate of the prevalence of compliance with sleep duration recommendations was presented for the total sample and by sex. Global mean prevalence was calculated to demonstrate the central tendency prevalence for prevalence. These rates (weighted averages) were calculated by adding the number of cases in all studies considered, divided by the sum of the number of participants in these studies, multiplied by 100.

A total of 54 publications on sleep duration (based on 27 studies) were found, and it was found that:



HEALTH OUTCOMES

PHYSICAL FITNESS

Showed adequate flexibility

for health, considering criteria

established by these studies

(n= 7.247)

50.9%

PERCENTAGE OF FEMALES

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, as adequate levels of physical fitness have been associated with lower chances of high blood hypertension, cholesterol and triglycerides levels and better cognitive performance during childhood and adolescence (84).

For this report, the physical fitness indicator was formed by physical fitness components related to health, such as cardiorespiratory fitness, muscle strength, muscle endurance and flexibility. For cardiorespiratory fitness, muscle strength and muscle endurance, a systematic literature review was carried out to compile the best evidence on this topic in Brazil (7,12,15). For the flexibility component, the systematic search process was performed, but no systematic review articles were published. The research used for the flexibility component can be consulted in the list of references (41-54).

FLEXIBILITY

58.9%

PERCENTAGE

OF MALES



For the Report Card Brazil 2022, a systematic literature search was performed, which included 14 original studies that included 11.666 Brazilian children and adolescents aged 6-18 years (41-54).

MUSCLE ENDURANCE

Muscle endurance is defined as the ability to perform contractions of one or more muscle groups, repeatedly, under submaximal loads. This physical fitness component has been considered an important indicator of adequate levels of health in childhood and adolescence (15). On the other hand, low levels of muscle endurance were associated with negative health outcomes with persistent effects in adulthood (15). In addition, stronger children and adolescents with greater muscle endurance can participate in sports practices, which demand different body movements, in a safe way in relation to susceptibility to musculoskeletal injuries (15).



MUSCLE STRENGTH

Muscle strength has been considered a global health marker in children and adolescents (7). This attribution is based on evidence described in literature that indicates direct association between muscle strength and physical, cognitive, mental and metabolic health indicators in the pediatric population (7). In general, muscle strength is the ability to generate force with a muscle or group of muscles. For this marker, results were gathered without considering muscle endurance, which was previously described.





Aerobic fitness is defined as the ability of the different body tissues to capture, absorb, transport and use oxygen, that is, to maintain cellular respiration during physical exercise. Therefore, the efficiency of the cardiorespiratory system determines the ability to perform dynamic exercises with the participation of large muscle groups for a long period of time (12,47). Low levels of aerobic fitness have been associated as one of the risk factors for premature mortality from all causes of diseases, especially those of cardiovascular nature (12).



How to improve this scenario?

The physical fitness of children and adolescents is influenced by the processes of maturation and physical growth, and is also product of the interaction between genetics and opportunities present in the environment. To improve the physical fitness of this population, opportunities for the practice of physical activities, sports and physical exercises that demand overloads on the neuromuscular system, on the joint range of motion and on the cardiorespiratory system are needed. This can occur in physical activities within schools, guided or supervised by the Physical Education teacher, in extracurricular programs after school hours, especially those involving sports practices, through active games, such as playing, jumping and running, and also through physically active school recess. That is, in all spaces, children and adolescents can stimulate and improve the physical fitness components.

Physical activities performed in the family environment can create extra opportunities for the performance of physical activities that improve global physical fitness throughout childhood and adolescence. In addition, managers can directly contribute to the planning and construction of suitable environments with appropriate physical spaces with equipment for physical activities, in addition to investing in public policies for this purpose.

OBESITY

11,7%

OVERWEIGHT

A condition in which body weight is above the acceptable or ideal weight. In relation to body mass index (BMI), overweight is defined by BMI from 25.0 to 29.9 kg/m². Overweight may or may not be due to increased body fat (adipose tissue) and therefore overweight does not equate to "excess fat". For children and adolescents, there are specific cutoffs for sex and age.

OBESITY

A state in which body weight is above the acceptable or ideal weight, usually due to excessive body fat accumulation. Patterns may vary with age, sex, genetic or cultural factors. Regarding body mass index (BMI), BMI greater than 30.0 kg/m² is considered obesity and BMI above 40.0 kg/m² is considered morbidly obesity. For children and adolescents, there are specific cutoffs for sex and age.

Overweight and obesity have been one of the greatest public health problems worldwide, mainly due to the increase in their prevalence observed in recent years in different age groups. The problem of obesity is not only related to excess body fat, but the relationship established between higher levels of fat with metabolic and cardiovascular consequences. In addition to physical health, obesity also stands out for its relationship with psychological aspects (low self-esteem, anxiety, depression, mood changes) and social aspects (discrimination, prejudice, exclusion) (85,86).

Most studies (80%) used the World Health Organization (WHO) criteria to determine overweight/obesity, 12.5% used the International Obesity Task Force (IOTF) cutoff points, 5% used the United States Center of Disease Control and Prevention (CDC), and one study used the Conde and Monteiro national cutoff points.



How to improve this scenario?

Knowing the prevalence of overweight and obesity in children and adolescents and identifying the groups most exposed to this outcome is extremely relevant, because the earlier interventions occur in these specific groups, the impact and permanence of this condition in adulthood can be avoided or mitigated. Furthermore, it was observed that the treatment of obesity in adulthood has been costly, and the problem becomes even more worrisome as obese children are five times more likely of remaining with this condition in adulthood when compared to non-obese children.

POOR MENTAL HEALTH

37,8%

The World Health Organization (WHO) estimates that 10% to 20% of adolescents worldwide experience some type of mental health problem (88). In Brazil, studies indicate that mental health problems among adolescents involve sociodemographic issues, and the worse the social conditions, the greater the number of reported psychiatric complications and hospitalizations (89).

Considering that every adolescent has the right to mental health promotion and protection so that these problems are mitigated or avoided (90), intervention strategies and policy guidelines that help children and adolescents to maintain good mental health should be proposed. Therefore, considering that adolescents spend large part of their time at school (8), it is understood that this environment should be considered in survey studies for the mental health condition of children and adolescents (8).

WHAT IS THIS INDICATOR?

Mental health at school refers to a set of actions aimed at mapping and understanding changes and contributing to the development of children and adolescents' intellectual, emotional and social skills (91). This network of actions is of outstanding importance, given that young people spend large part of the day in the school environment, which facilitates observation in this context.





Mental Health Indicators in school	Percentage (%)
Teasing suffered due to individual characteristics	72,9%
Loneliness	50,3%
Body image dissatisfaction	48,1%
Body weight dissatisfaction	45,6%
Insomnia	45,7%
Behavior disorders	29,2%
Stress	20,1%
Social Isolation	17,6%
Inadequate psychological well-being	10,4%
Average value of the nine indicators	37,8%



How to improve this scenario?

The concern with Mental Health in school needs to be part of Public Policies of attention to the school environment. Actions such as the implementation of Physical-Sports and Leisure Activities Projects and Programs tend to favor the improvement of this condition, so that schools and government agencies need to invest in training and qualification of the entire work team and in increasing opportunities of physical-sports activities in the school environment.



SOURCES OF INFLUENCE

FAMILY AND PEERS

It is a consensus in literature that the practice of physical activity is an important lifestyle habit that should be encouraged from early age, including childhood and adolescence. In this sense, the present indicator aimed to describe whether the practice of physical activity by parents and/or guardians may be related to greater practice of physical activity by children or adolescents.

In this update based on a new systematic review, it is believed that the practice of physical activity constitutes an important habit to be encouraged in the family environment (92), either by the example that parents leave to their children by being physically active and/or by the support for the practice of physical activity by their children.



That is, if parents/guardians practice physical activities, their children are more likely of doing so. The studies included were carried out in 6 Brazilian states:

Rio Grande do Sul, Paraná, São Paulo, Minas Gerais, Pernambuco e Paraíba

the majority in the southern region (57.1%)

There are no studies in Brazil developed in the Northern region and Midwestern region

Only 1 study in Brazil had longitudinal design, and this study did not find any relationship between practice of physical activity by parents and their children

The influence of specific domains of physical activity (leisure, commuting, etc.) on the interrelationship between practice of physical activity by parents and children is still not consensual and not clear in Brazil

How to improve this scenario?

Several actions can be taken based on the findings of this indicator, considering the recently published systematic review on this topic (9). Given the importance of the relationship between physical activity performed by parents and children, health promotion actions should be taken in the family environment, especially by raising the awareness of parents/and guardians of children and adolescents that they can be facilitators of this important lifestyle habit. Teachers, especially Physical Education teachers, would play an important role in trying, in meetings with the parents of children and adolescents enrolled in their schools, to make these parents aware of the importance of the continuous practice of physical activity. As practical examples, parents could take their children to school on foot, as this would provide greater active commuting. In case the house is far from the school and the use of public transport such as the bus is necessary, getting off one stop before and walking the rest of the way to school can be an alternative to increase physical activity in both. At home, parents should police themselves for the total time they remain seated and do the same with their children, encouraging them to get up. In this way, they would be "breaking" the sedentary behavior and exchanging this type of behavior for the practice of physical activity, even if it is of light intensity. Finally, social support for children to practice any type of sport they like is also a good incentive to maintain adequate levels of physical activity. For managers, in Family Health Strategy Programs, for example, information about physical activity could be inserted in the medical records of individuals treated at Basic Health Units and also if this type of behavior is encouraged to their children (in the case when the adult has children). Future studies to be carried out in Brazil on this indicator should be developed in the Northern and Midwestern regions due to the lack of information in these regions.

SCHOOL

The school is considered an important space for the implementation and promotion of active behaviors, especially based on Physical Education classes and other out-of-school physical-sports activities (94,95), being also considered one of the essential places for the adoption of several healthy behaviors, especially because adolescents spend large part of their daily time in this environment (95).

In this sense, the school, the school structure and its surroundings are understood as important attributes that must be considered in public policies to promote physical activity, sports, leisure and physical exercise, both from the structural point of view (57) and from actions that provide the adoption and/or change of behaviors aimed at students' health and increase of their levels of physical activity (55,94).

Any policies, organizational factors (e.g. infrastructure, responsibility for policy implementation) or student factors (e.g. physical activity choices based on age, sex or ethnicity) in the school environment may influence physical activity opportunities and the participation of children and young people in this environment. To assign grade B, the average value of the prevalence of markers with information was calculated.

	Marcador de referência para o indicador "escola"	Percentual (%)
	% of schools with school policies that promote physical activity (e.g. daily physical education, daily physical activity, recess, "everyone plays" approach, bicycle racks at school, traffic control near school, time outdoors)	72, 4%
5	% of schools where the majority (≥ 80%) of students are taught by a Physical Education specialist	73,7% B
	% of schools where the majority (≥ 80%) of students is offered the mandatory amount of Physical Education classes (according to the municipality and/or state and/or country legislation).	88,0% A
	% of schools offering physical activity opportunities (excluding Physical Education classes) for the majority (> 80%) of students	59,3% C+
ζ	% of parents/guardians who reported that children and adolescents have access to physical activity opportunities at school, in addition to Physical Education classes.	
	% of schools with students who have regular access to facilities and equipment aimed at the practice of physical activities (e.g., gym, outdoor playgrounds, sports fields, multipurpose space for physical activity, equipment in good condition).	63,4% B-

How to improve this scenario?

There is a need for official indicators regarding the participation of parents and family members in encouraging physical and sports activities by children and adolescents, in addition to Physical Education classes, since family participation is an important factor to be considered in the increase of levels of physical activity among children and adolescents. Therefore, it is recommended that school projects and activities and other school public policies also consider the participation of parents and other family members in joint activities, which can be obtained in Physical Activity, sport and leisure events held by the school involving the entire community.

The need to increase the percentage of schools offering opportunities for physical activities, in addition to Physical Education classes as an intervention proposal is also verified, as well as the maintenance of policies to encourage school games and improvements in the school structure, which can be obtained with public policies for the construction of infrastructure and providing materials for the practice of PA, as well as the holding of sports games and active leisure events involving adolescents.

Another aspect refers to the need to increase the percentage of physical education teachers in schools, as well as the attendance to Physical Education classes by students, a situation that will favor the availability of extra-school physical activity activities, increasing the percentages for these indicators across the country.

COMMUNITY AND COMMUNITY AND ENVIRONMENT

Any policies or organizational factors (e.g., infrastructure, responsibility for policy implementation) in the municipal/state/federal environment that may influence physical activity opportunities and the participation of children and young people in this environment.

Physical activity is influenced by a series of complex factors, including environmental characteristics (14). Studies on the associations between the built environment and physical activity have recently increased in recent years. Neighborhood aspects such as destination access, street connectivity, recreational facilities and public transport have been associated with higher levels of physical activity and health among children and adolescents (14).

Only five scientific articles met the inclusion criteria and were considered for updating the information on this indicator (14). The assessment instruments used in the studies of environmental characteristics were different in the five studies.

Community and Environment Indicators	Grade	Ň
% of children and/or parents who perceive their municipality/community doing a good job for health promotion	В-	
% of children and/or parents who reported having accessible structures, programs, parks, playgrounds in the community	C-	
% of children and/or parents who reported living in a safe neighborhood where they can be physically active	C-	
% of children and/or parents who reported having good conditions of structures, parks, playgrounds in their community that are safe for use	c	7
% municipalities and/or communities that reported having policies to promote physical activities	INC	
% municipalities and/or communities that reported having infrastructure (e.g. sidewalks, trails, lanes, bike lanes) especially for promoting physical activities	INC	0
	Rev	CO F

How to improve this scenario?

Several environmental indicators can enhance the practice of physical activity among children and adolescents. Residential location, local security, regional infrastructure and the conditions offered at school for physical activity can impact the level of physical activity of young people. Departments related to health, infrastructure, public safety, traffic, among others, should be aware of the possibilities of improvements in the built environment to promote physical activity among young people and a more active population.

GOVERNMENT STRATEGIES AND INVESTMENTS

GOVERNMENT STRATEGIES AND INVESTMENTS



This indicator deals with government strategies and investments to promote physical activity among children and adolescents. For this report, only the actions of the federal government that cover the promotion of physical activity were considered. That is, state and/or municipal information was not considered in this report.

From the search carried out on the official websites of the federal government, it was possible to find 17 programs/actions at federal level, which, in some instance, dealt with the promotion of physical activity in children and adolescents (56-72). Of this amount, one is linked to the Ministry of Health of Brazil, another program/action is governed by two Ministries (Education and Health), one is governed by the Ministry of Education of Brazil, 11 programs/actions are governed by the Ministry of Citizenship of Brazil, one is governed by the Ministry of Citizenship of Brazil, one is governed by the Ministry of Brazil, one journed by the Ministry of Defense of Brazil.

The positive point is that Brazil has federal programs/actions that, even in a secondary way, aim to promote physical activity in school-age children and adolescents. Most of these programs/actions suggest the practice of sports as an agent of social transformation. There are also programs focused on building physical spaces for social integration, and these spaces are intended for sports and recreational activities. In addition, some programs/actions invest in the infrastructure of qualified personnel to deliver the proposed pedagogical activities.

The score assigned to this indicator was **D+**, which is justified for the following reasons:

None of these programs/actions has as its main aim the promotion of physical activity among children and adolescents. Such an aim is often not even considered as secondary

In the consulted sources of information, only four programs/actions reported the amount that the federal government invested in activities

There is no information, in the consulted sources of information, on the evaluation of the effectiveness and/or impact of these programs regarding the promotion of physical activity among children and adolescents

There is no information, in the consulted sources of information, about the planning and/or future perspectives (investments, expansion) of these programs regarding the promotion of physical activity among children and adolescents

How to improve this scenario?

The promotion of physical activity among children and adolescents is not only given through the practice of sports. In fact, this isolated strategy has not been successful when it comes to promoting physical activity. In this sense, it is urgent for Brazil to have a state policy focused on promoting physical activity in children and adolescents. In addition, information about existing programs/actions, such as the amount of resources allocated to each of them, can be better explained in the official media, and information about the evaluation of each of these programs/ actions is very important for government policies to be more efficient.

Programs/Actions for the promotion of physical activity for children and youth in Brazil

Programs/Actions	Main Objective	Target Population	Dimension	Investment
Academia da Saúde (56) Creation Year: 2011 Ministry of Health	Contribute to the promotion of health and production of care and healthy lifestyles for the population through the implementation of centers with infrastructure and qualified professionals	The entire population	Physical and personnel infrastructure	Not informed
Saúde na Escola (57) Creation Year: 2007 Ministry of Education and Ministry of Health	Develop health promotion actions articulated between the health and education sectors, aiming at comprehensive care and education to improve the health of the school population	Basic Education students, education and health managers and professionals, the school community and, more broadly, students from the Federal Network of Professional and Technological Education and Youth and Adult Education	Physical and personnel infrastructure	Not informed
Novo Mais Educação (58) Creation Year: 2016 Ministry of Education	Improve learning in Portuguese and Mathematics in elementary school, by extending the school day of children and adolescents. The Program has been implemented through pedagogical monitoring in Portuguese and Mathematics and the development of activities in the fields of arts, culture, sports and leisure	Children, teenagers and adults	Personnel infrastructure and adequate teaching material	R\$ 277.937.003,00*
Segundo Tempo (59) Creation Year: 2003 Ministry of Citizenship	Democratizar o acesso à prática e à cultura do esporte educacional, promovendo o desenvolvimento integral de crianças e adolescentes como fator de formação da cidadania e de melhoria da qualidade de vida, prioritariamente daqueles que se encontram em áreas de vulnerabilidade social e que estejam preferencialmente matriculados na rede pública de ensino.	Children, adolescents and university students (including people with disabilities)	Personnel infrastructure and adequate teaching material	Not informed
Esporte e Lazer da Cidade (60) Creation Year: 2011 Ministry of Citizenship	Democratize access to the practice and culture of educational sports, promoting the integral development of children and adolescents as a factor in forming citizenship and improving the quality of life, primarily for those living in areas of social vulnerability and who are preferably enrolled in the public school system	Children, adolescents, young people, adults and the elderly (including people with disabilities)	Personnel	Not informed
Forças no Esporte (61) Creation Year: 2003 Ministry of Defense	Democratize access to leisure and recreational sport, favoring underprivileged communities	Children and adolescents	Physical and personnel infrastructure	R\$ 20.600.000,00
Projeto João do Pulo (62) Creation Year: 2015 Ministry of Defense	Democratize access to the practice and culture of sports and promote the integral development of children and adolescents, offering educational sports activities, leisure and complementary activities	Children and adolescents with disabilities	Physical and personnel infrastructure	Not informed
Luta pela Cidadania (63) Creation Year: 2016 Ministry of Citizenship	Democratize access to the practice and culture of sports and promote the integral development of children and adolescents, offering educational sports activities, leisure and complementary activities	Children, teenagers and adults	Personnel infrastructure and adequate teaching material	Not informed
Brincando com Esporte (64) Creation Year: 2018 Ministry of Citizenship	Offer the practice of martial arts that encourage the integral development of children, adolescents and adults	Children and adolescents (including people with disabilities)	Personnel infrastructure and adequate teaching material	Not informed

Programs/Actions	Main Objective	Target Population	Dimension	Investment
Comunidades ribeirinhas da Amazônia (65) Creation Year: 2019 Ministry of Citizenship	Develop sports, fighting sports and martial arts, cultural and leisure practices with riverside communities in the Amazon	Communities of people living on the banks of rivers who have artisanal fishing as their main survival activity	Personn <mark>e</mark> l infrastructure	Not informed
DELAS (66) Creation Year: 2019 Ministry of Citizenship	Contribute to strengthening female empowerment, by offering fighting sports and martial arts activities and promoting a cycle of debates on rights, forms of violence and the contexts in which they can be developed	Women, from 12 years of age.	Personnel infrastructure	Not informed
Esporte e Cidadania (67) Creation Year: 2016 Ministry of Citizenship	Democratize access to sport for children, adolescents and young people	Children, adolescents and young people, aged 6-21 years in a situation of social vulnerability and/or who comply with socio- educational measures in the internment and/or semi- liberty condition	Personnel	Not informed
Virando o Jogo (68) Creation Year: 2019 Ministry of Citizenship	Provide access to the practice and culture of sports and leisure, with an emphasis on the development of martial arts activities	Children, adolescents, young people, adults, the elderly and people with disabilities	Personnel	Not informed
Aldeia Viva (69) Creation Year: 2017 Ministry of Citizenship	Encourage, value and strengthen sports and leisure practices in indigenous communities	Indigenous children, adolescents and adults.	Personnel infrastructure	Not informed
Iniciação e aprimoramento de modalidade esportiva (70) Creation Year: 2019 Ministry of Citizenship	Expand the possibilities of access and improvement of skills in sports, offering sports, with educational, inclusive and recreational nature	Children and adolescents (including those with disabilities)	Personnel infrastructure	Not informed
Seleções do Futuro (71) Creation Year: 2019 Ministry of Citizenship	Encourage, develop and democratize access to sports training in the soccer modality	Children and adolescents	Personnel infrastructure	R\$ 6.420.381,55
Pracinhas da Cultura (72) Creation Year: 2011 Ministry of Tourism	Integrate cultural programs and actions, sports and leisure practices, training and qualification for the job market, social assistance services, violence prevention and digital inclusion policies in the same space	The entire population	Physical infrastructure	R\$ 729.066.324,37

SUS: Unified Health System; Investment disclosed on the action website in December/2021; *Total value calculated by adding the years 2017, 2018 and 2019; R\$: Real (Brazilian Currency); 1 US\$ = R\$ 5.50 (in February/2022).



FINAL COMMENTS

The third version of the Report Card Brazil on physical activity in children and adolescents had the direct participation of 10 Professors Ph.D., specialists in the investigated areas, who together with their research groups from 10 higher education institutions joined efforts to raise the best scientific evidence on each of the topics investigated. This process continued even during the COVID-19 pandemic, which required a redoubled effort from the teams involved in the process of constructing the Report Card Brazil 2022.

The methodological process of gathering scientific evidence was completely open, so that the results and all grades and prevalences shown in this report can be replicated by following the steps described in the Report Card Brazil 2022. This methodological transparency is characteristic of the Report Card Brazil on physical activity in children and adolescents and reinforces the importance of using scientific evidence to guide strategies to promote physical activity in children and youth in Brazil.

The main limitations of the Report Card Brazil 2022 were the following: the noninvolvement of any researcher from the Northern region of Brazil in the construction of the report, which may limit the understanding of the cultural characteristics inherent to children and adolescents in that region of the country. One of the aims of the next version of Report Card Brazil is to include at least one researcher from all Brazilian geographic regions in the process of constructing the report, as it increases the reach of information and brings to the process a view of the different cultural characteristics of Brazil. The noninclusion of research developed during the COVID-19 pandemic is another limitation of the Report Card Brazil 2022. This decision was taken because the COVID-19 pandemic has not yet ended and in many Brazilian cities, school activities are being gradually resumed and /or with some limitations in the use of school spaces; thus, the routine of children and adolescents was modified, which results in changes in daily behaviors. Furthermore, as there are still few studies that have provided information on the impact of the COVID-19 pandemic on physical activity and on the different indicators reported here, the possible information that would be shown in 2022, in the opinion of experts of this report, would not be sufficient to inform the community about the real effect of the COVID-19 pandemic on these indicators. The expectation is that the next version of the Report Card Brazil will include studies developed during the COVID-19 pandemic.

In general, it was observed that Brazil had moderate to weak performance in all the analyzed indicators. The best evaluated indicator in the Report Card Brazil 2022 was School (grade B), in which it was observed that most Brazilian schools offer Physical Education classes for students, especially as a result of current legislation. It is noteworthy that Physical Education classes need to be offered more times a week, at least three times a week, so that children and young have more opportunities to practice physical activities and understand their importance.

The indicators with the worst performances in the evaluation of the Report Card Brazil 2022 were Active Play (grade F), Overall Physical Activity (grade D) and Sedentary Behaviours (grade D). Such behaviors are objects of the Physical Activity field, in which it has been clearly demonstrated that having sufficient levels of physical activity and reduced sedentary behavior is beneficial for physical and mental health. One of the strategies to increase the level of physical activity of children and young is precisely through unstructured and playful activities (i.e., Active Play). It is reinforced that physical inactivity or insufficient levels of physical activity are not synonymous with sedentary behavior. Sedentary behaviours involves activities performed when a person is sitting, reclining or lying down awake and expending little energy. When the child/adolescent is in one of these positions to use a cell phone, computer, tablet, video game, watch television or class, or any other activity, it is characterized as sedentary behavior. The time in any of these positions must be reduced as much as possible throughout the day for health benefits to be achieved. Physical inactivity, in turn, is when children and adolescents do not meet the physical activity recommendations that were listed in the introduction to this report. The practice of physical activity can be performed at different times of the daily life of children/adolescents, the most important thing is to keep moving most of the time to be able to grow in an adequate and healthy way.

For Brazil to succeed in increasing levels of physical activity and reducing sedentary behavior in children and adolescents, it is necessary to look at the different indicators presented in this report. In order for daily behaviors to be changed, changes and improvements in government strategies and investments are necessary, that is, it is necessary to have public policies to promote physical activity that reach the pediatric population. If these government policies are effective, the sources of influence that include the school, the built environment and family members will become a means of providing and encouraging physical activity practices throughout childhood and adolescence with fewer barriers. As a result of these practices, Brazil will be more likely of reducing the prevalence of obesity, prevent mental disorders in children and adolescents and improve levels of physical fitness.

This action strategy to promote the health of children and adolescents in Brazil has never been more necessary than in the current times of the COVID-19 pandemic and at a time when social inequalities are exponentially increasing in the country. Looking at future generations and envisioning better days is the role of the entire society.

In this way, the country has to understand once and for all that:





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