Original Article

RBAFS Revista Brasileira de Atividade Física & Saúde
SOCIEDADE BRASILEIRA DE ATIVIDADE FÍSICA & SAÚDE

rbafs.org.br

Physical activity for children up to 5 years old: Physical Activity Guidelines for the Brazilian Population

Atividade física para crianças até 5 anos: Guia de Atividade Física para a População Brasileira

AUTHOR'S

Larissa Rosa da Silva[1]
Carla Menêses Hardman[2]
Clarice Lucena Martins[3]
Paulo Henrique Guerra[4]
Anastácio Neco de Souza Filho[3]
Daniel da Rocha Queiroz[2]
Daniel Umpierre[5]
Rildo de Souza Wanderley Junior[2]
Fabiana Vieira Santos Azevedo Cavalcante[6]
Paula Fabricio Sandreschi[7]
Pedro Curi Hallal[8]
Mauro Virgilio Gomes de Barros[9]

1 Universidade Estadual do Oeste do Paraná, Departamento de Educação Física, Marechal Candido Rondon, Paraná, Brasil.

2 Universidade Federal de Pernambuco, Departamento de Educação Física, Recife, Pernambuco, Brasil.

3 Universidade Federal da Paraíba, Departamento de Educação Física, João Pessoa, Paraíba, Brasil.

4 Universidade Federal da Fronteira Sul, Chapecó, Santa Catarina, Brasil.

5 Universidade Federal do Rio Grande do Sul, Departamento de Saúde Coletiva e Centro de Pesquisa Clínica, Hospital de Clínicas de Porto Alegre, Porto Alegre, Rio Grande do Sul, Brasil.

6 Ministério da Saúde, Secretaria de Atenção Primária à Saúde, Departamento de Promoção da Saúde, Brasília, Distrito Federal, Brasil.

7 Ministério da Saúde, Secretaria de Atenção Primária à Saúde, Departamento de Promoção da Saúde, Coordenação-Geral de Promoção da Atividade Física e Ações Intersetoriais, Brasília, Distrito Federal, Brasil.

8 Universidade Federal de Pelotas, Departamento de Ginástica e Saúde, Pelotas, Rio Grande do Sul, Brasil.

9 Universidade de Pernambuco, Escola Superior de Educação Física, Recife, Pernambuco, Brasil.

CORRESPONDING

Larissa Rosa da Silva
larisilva99@yahoo.com.br
Rua Luis Centenaro, n. 533. Marechal Candido Rondon, Paraná, Brazil.
ZIP CODE: 85960-000.

DOI

10.12820/rbafs.26e0213

ABSTRACT

This paper describes the process of establishing physical activity recommendations for children up to five years old included in the Physical Activity Guidelines for the Brazilian Population. The development of these recommendations was based on the guidelines proposed by the World Health Organization in 2019. Theoretical support was gathered by using the following strategies: 1-scoping review conducted to update the body of knowledge about the correlates and determinants of physical activity in children 0-5 years old; 2-synthesis of the existing national physical activity guidelines; 3-online interviews with parents and teachers aiming to identify their degree of difficulty in understanding the recommendations contained in the World Health Organization Physical Activity guidelines and to identify barriers and strategies for improving the involvement of children in physical activities; and, 4-public consultation. All actions were developed in the period from May to December 2020, by a working group composed of researchers with expertise in this field and representatives of the Ministry of Health. As a result, a total of 35 recommendations were included in the Brazilian guidelines, 10 of which were related to benefits, four to the dose, seven to the types of activities, seven to the strategies for improving practice, and seven others related to the reduction of sedentary behavior. When relevant and possible, these recommendations were differentiated for children from birth to one year of age, 1-2 years, and 3-5 years. The main message is that any physical activity is better than none and that sedentary behavior should be reduced.

Keywords: Physical activity, Children, Preschoolers, Guidelines.

RESUMO

Este artigo descreve o processo de construção das recomendações de atividade física para crianças de até cinco anos incluídas no Guia de Atividade Física para a População Brasileira. O desenvolvimento destas recomendações tomou por base as diretrizes propostas pela Organização Mundial da Saúde em 2019. Complementarmente, buscou-se suporte teórico nas seguintes estratégias: 1-revisão de escopo, conduzida de modo a atualizar o corpo de evidências acerca dos correlatos de determinantes da atividade física em crianças de até cinco anos; 2-síntese de guias nacionais de atividade física; 3-escuta com pais e professores, a fim de identificar o grau de dificuldade destes em entenderem as recomendações contidas na proposta apresentada pela Organização Mundial de Saúde, além de barreiras e estratégias para maior envolvimento das crianças em atividades físicas; e, 4-consulta pública. Todas as ações foram desenvolvidas no período de maio a dezembro de 2020, por um grupo de trabalho constituído por pesquisadores com experiência na temática e representantes do Ministério da Saúde. Como resultado, foram incluídas no Guia um total de 35 recomendações, sendo 10 relacionadas aos benefícios, quatro à dose, sete aos tipos de atividades, sete às orientações para prática e outras sete relacionadas à redução de comportamento sedentário. Quando pertinente e possível, estas recomendações foram diferenciadas para crianças do nascimento até um ano de vida, de um e dois anos e de três a cinco anos. A mensagem principal é de que qualquer atividade física é melhor do que nenhuma e de que o comportamento sedentário deve ser reduzido.

Palavras-chave: *Atividade física; Criança; Pré-escolar; Recomendações.*

Introduction

Physical activity practice is directly related to healthy growth and development, and several international guidelines recommend its introduction in the first months of life[1–4]. In early childhood, physical activities can reduce the risk of developing obesity[5,6], improve sleep quality[7], motor coordination[5,8], cognitive functions[5,6,8] and cardiometabolic health[5,6], and contribute to the development of psychological and social skills[5,9].

Early childhood is a period of rapid physical, motor and cognitive development. Furthermore, it is in this period that lifestyle habits start to be established[10–12]. However, contrary to what common sense suggests (children are "naturally active"), a recent study carried out with Brazilian children has shown that insufficient levels of moderate to vigorous physical activities are highly prevalent[13].

Low levels of physical activity in early childhood can have negative consequences both in the short term (for example, inadequate motor and cognitive development)[5,8] and in the medium and long terms (for example, higher risk of physical inactivity in the subsequent life cycles)[11,12]. In view of this, strategies to guide the performance of physical activities in this phase of life can support parents, guardians, caregivers and teachers. The making of guidelines can be an important strategy to support promotion of physical activity practice, as they provide, in a simple and objective way, a public health message for the target audience based on scientific evidence. Furthermore, these recommendations can guide the monitoring and assessment of physical activity levels in children up to 5 years old, setting the course of future research and interventions[14,15].

In 2019, the World Health Organization (WHO)[4] published recommendations targeted at the regular practice of physical activities and sedentary behavior of children up to four years old. In the American continent, a recent review identified 10 national physical activity documents containing guidelines (Argentina, Canada, Chile, Colombia, Costa Rica, Ecuador, United States of America-USA, Jamaica, Peru and Uruguay) approved by their respective national health agencies[16], but few of them presented specific recommendations for this age group. However, due to Brazil's territorial dimension and to its cultural and socioeconomic contrasts, it was considered important to provide adequate recommendations for physical activity promotion according to the national reality.

Thus, the Ministry of Health proposed the development of recommendations considering different life cycles, including children from birth to five years of age. This initiative fills a gap concerning guidance about the importance of physical activity in the early phases of life. The development of the Physical Activity Guidelines for the Brazilian Population was an initiative of the Ministry of Health and was approved by the Brazilian Society of Physical Activity and Health. In this article, we describe the construction process of the physical activity recommendations for children up to five years old, included in the Physical Activity Guidelines for the Brazilian Population.

Methods

The construction of the Brazilian physical activity recommendations for young children was based on the content analysis of a similar document proposed by the WHO in 2019[4]. Complementarily, theoretical support was obtained through the following strategies: (1) scoping review, conducted to update the body of knowledge about the correlates and determinants of physical activity in children up to 5 years old; (2) synthesis of national physical activity guidelines published by American countries; (3) consultation with parents and teachers to identify their degree of difficulty in understanding the recommendations proposed by the WHO in 2019, as well as specific barriers to children's engagement in physical activities in different regions of Brazil; and (4) public consultation, so that the society could contribute to the construction of the recommendations by giving criticism and suggestions. Figure 1 illustrates the construction process of the recommendations, showing the strategies and when they were adopted.

The actions were carried out by a working group composed of 11 participants (researchers affiliated with higher education institutions, representatives of the Ministry of Health, and members of the project's scientific committee). The activities were performed from May to December 2020 and encompassed literature reviews, data analysis, writing of reports, construction of forms, and weekly meetings held via videoconference. Specific recommendations for children with disabilities concerning their participation in physical education classes were developed by independent working groups and are included in the Physical Activity Guidelines for the Brazilian Population; due to this, they were not approached in this article.

The scoping review aimed to synthesize the results of studies about correlates and determinants of phys-

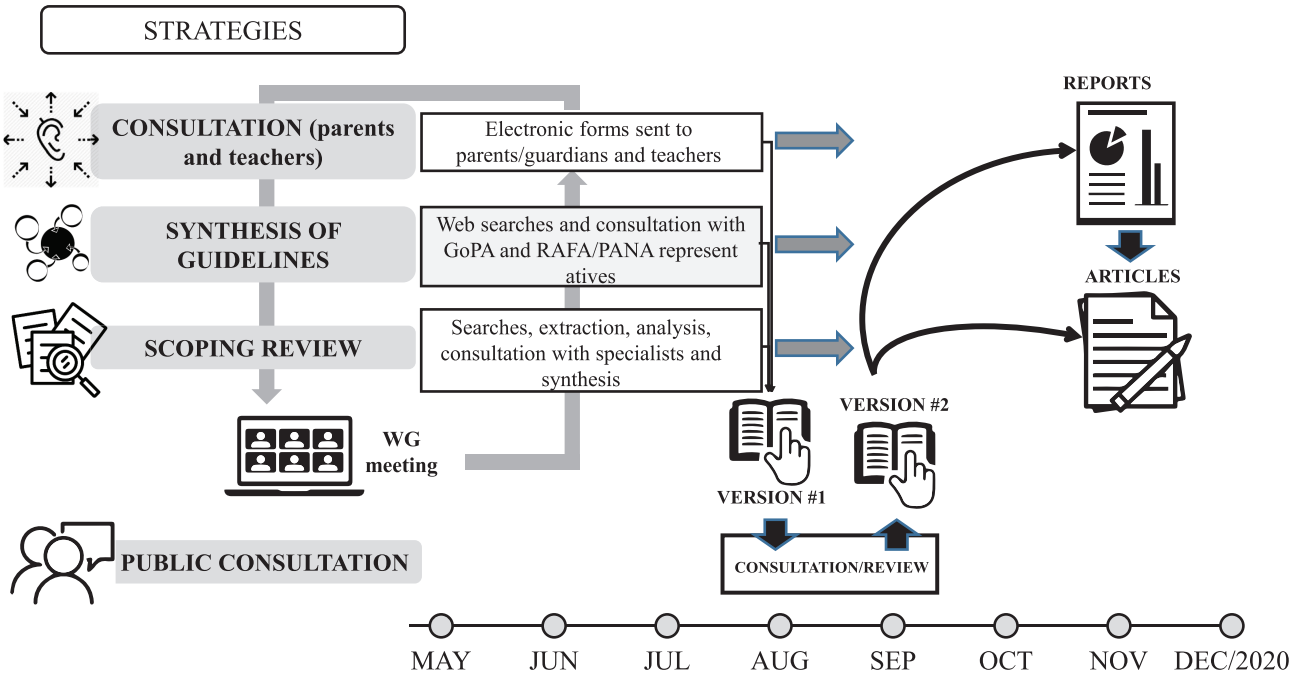

Figure 1 – Summary of the stages in the construction of the Brazilian physical activity recommendations for children up to 5 years old. WG = Working Group; GoPA = Global Physical Activity Observatory; RAFA/PANA: Physical Activity Network of the Americas

ical activity and sedentary behavior, conducted with samples of children aged up to 5 years in South American countries. We decided to perform this synthesis because we noticed that the WHO recommendations[4] were based on studies conducted in other countries and did not include findings derived from research projects developed in Brazil, possibly because of the search strategies that were adopted and the language of publication. We delimited the search to studies carried out in South American countries due to the similarity between their contexts and the characteristics of Brazil.

The methodological procedures followed the recommendations of the Preferred Reporting Items for Systematic Review and Meta-Analyses [PRISMA][17] and searches were performed in the following databases: Latin American & Caribbean Health Sciences Literature (LILACS), PubMed, Scientific Electronic Library Online (Scielo), Scopus and Web of Science. Additionally, manual searches were performed in the bibliographic references of the reviews about the theme located in the databases, and a consultation was conducted with a panel of 48 researchers identified as authors of publications related to the theme.

A documentary research was carried out in order to analyze the physical activity recommendations for young children provided in national guidelines published in the 36 countries of the American continent. As inclusion criteria, we looked for physical activity guidelines approved by national education, sports or health agencies that contained specific physical activity recommendations targeted at young children. Different search strategies were used: (1) manual searches in the websites of national education, sports and health agencies of the 36 American countries; (2) complementary manual searches using Google Search, using the terms "physical activity", "early childhood", "preschoolers", "screen time", "sedentary behavior", as well as the country's name (according to the local spelling); (3) e-mail contact with the members of the Physical Activity Network of the Americas (RAFA/PANA; https://rafapana.org/), asking about the existence of local documents and requesting them; and (4) contact with the individuals mentioned in the country cards of the Global Physical Activity Observatory (http://www.globalphysicalactivityobservatory.com/country-cards/), asking about the existence of local documents and requesting them.

We examined the located documents to extract the recommendations for children up to 5 years old and information about the theoretical-scientific framework that supported their proposal. Furthermore, we investigated the language used in the presentation of the recommendations and the utilization of visual resources to strengthen important messages. Subsequently, when we were writing the final report, we performed a comparative analysis between the recommendations exist-

ing in these guidelines and the ones that were included in the Brazilian version.

We established, in advance, that the Physical Activity Guidelines for the Brazilian Population should be presented in informative language accessible to target audiences of the Brazilian population as a whole. In the case of children up to 5 years old, we decided that the recommendations should be addressed to the children's parents/guardians and teachers. For this reason, we consulted with volunteers that could represent these target audiences. This procedure aimed to guarantee the participation of these strategic groups from different regions of the country, with different demographic and socioeconomic profiles.

The consultation process aimed to identify, from the perception of parents/guardians and teachers, barriers and facilitators of physical activities and sedentary behaviors in Brazilian children from birth to the end of early childhood. In addition, the consultation also checked their understanding about the physical activity and sedentary behavior recommendations proposed by the WHO[4]. We were particularly interested in verifying if the participants could understand the recommendations concerning intensity and duration of the activities.

To structure the form used in the consultation, the knowledge provided by systematic reviews about the theme was considered[5,18,19]. After the preliminary version of the form was created, it was piloted with a restricted group of parents and teachers, with the purpose of checking its applicability and their understanding of the questions. Based on the information collected in the pilot test, we designed two questionnaires administered to respondents via Google Forms: one for parents, guardians or caregivers, and the other for teachers of children up to five years old. The questionnaire for parents, guardians or caregivers contained 26 questions, and the one for teachers, 24 questions. The questions approached children's adherence to the physical activity and sedentary behavior recommendations, strategies adopted by respondents to help children perform physical activities, perceived barriers, and the main activities undertaken by the children.

The links to access the forms and answer the questionnaire were disseminated to the strategic groups on social media. In this stage, we had the collaboration of researchers working in several higher education institutions located in the five geographical regions of Brazil. Versions of the forms are available as supplementary documents.

After the systematization of the information derived from the scoping review, from the synthesis of the existing guidelines and from the consultation, the first version of the recommendations was submitted to a public consultation. This preliminary version was presented to the scientific community and to society. Anyone interested could criticize or make suggestions and amendments by completing an online form, which was available from August 14 to August 31, 2020. All the received suggestions were analyzed by the working group and, when plausible and duly justified from the theoretical point of view, were incorporated into the text of the recommendations.

Results

The Brazilian physical activity recommendations for children up to five years old were developed from the results obtained through different strategies (see Figure 1): (1) scoping review; (2) synthesis of national physical activity guidelines published by American countries; (3) consultation with target audiences; and (4) public consultation. This process produced a set of 35 recommendations that are presented on Table 1. Considering that the presentation of all the findings resulting from the scoping review and from the synthesis of national physical activity guidelines from American countries are beyond the objective of this work, these results will be presented in detail in future publications.

Generally speaking, when we analyzed the 18 articles included in the scoping review, we found that most were observational studies conducted in three countries (Brazil, Chile and Ecuador). Most of the samples focused on children aged three to five years. The summarized studies showed that the majority of the children was classified as physically active; on the other hand, they were greatly exposed to sedentary behaviors. The factors associated with physical activity were sex (boys are more physically active than girls) and family income (children with higher family income are more likely to be physically active). An intervention study in the school context showed that guiding parents to perform physical activities together with their children and changing the school curriculum reduced children's time in sedentary behavior on weekends[20]. However, the methodological analysis of these studies showed that in the cross-sectional studies and in the interventions there was a high risk of bias in the interpretation of the results.

Four documents containing guidelines were found, all approved by national health agencies. All of the

Table 1 – Physical activity recommendations for children up to 5 years old and justification for inclusion in the Physical Activity Guidelines for the Brazilian Population

Recommendation	Justification
Benefits	
Physical activity is important for all children, including infants.	Although scientific evidence indicates the benefits of PA for children, there is an assumption (or mistaken belief) on the part of parents that children are naturally active, or are too small to practice PA, as we observed in the consultation. Additionally, different PA Guidelines highlight the importance of encouraging children, including infants, to be active, even during short periods, several times a day, in a safe, supervised and stimulating environment.
Healthy growth and development are the main benefits of physical activity in childhood.	The early years are a critical and rapid period of physical, cognitive, social and emotional development. Review studies and some guidelines indicate that meeting the PA recommendations contributes to healthy growth and development.
Physical activity helps control weight and reduce obesity risk.	Although PA studies and Guidelines cite the benefits of PA to control weight or adiposity, the findings are still controversial in relation to early childhood. While some studies have reported an inverse relationship between PA practice and adiposity indicators, others have not found this relationship. Although the quality of the evidence ranges from very low to low and it is not possible to suggest the necessary dose, PA benefits in long-term weight control justify its recommendation.
Improves sleep quality.	Sleep is essential to children's health and development. A synthesis study has shown that time spent in moderate to vigorous physical activities and participation in outdoor play can improve children's sleep. However, the quality of the available evidence was very low. Children who play outdoors are more exposed to natural light and this can contribute to regulate melatonin secretion and the circadian rhythm, stimulating the regular onset of sleep and improving night sleep.
Helps motor coordination.	Although the quality of the available evidence ranges from very low to low, other Guidelines and different studies have also indicated this benefit. Children in this age group are at a crucial stage of motor competence acquisition. In early childhood, PA seems to be associated with improvement in motor competence, and synthesis studies and PA guidelines highlight the benefits of PA to motor development (motor skills and motor coordination). The pattern and strength of the relationship between these indicators tend to differ by gender, PA indicators and motor performance measures.
Improves the cognitive functions and readiness for learning.	Evidence indicates that physical activities contribute to the cognitive functions and to learning because they facilitate the exploration of the environment. Synthesis studies and other Guidelines have also indicated that physical activity practice brings positive changes in language learning, academic performance, attention, and in the executive function; however, the quality of the available evidence ranged from very low to high.
Benefits	
Helps in the integration and development of psychological and social skills.	The available studies indicate that the typical physical activities of this phase of life (usually games and play) contribute to psychosocial health (self-efficacy, self-esteem, temperament, aggression, social integration). These activities contribute to the formation of neural structures necessary for the repetition of the experimented activities in the future; contribute to social communication and negotiation; and are a possibility for the expression of emotions. The quality of the available evidence ranged from low to moderate.
Contributes to the healthy growth of muscles and bones.	The quality of the evidence ranged from very low to low; however, synthesis studies and other PA Guidelines indicate that higher amounts of PA are associated with better bone health indicators. Childhood is a critical period for the development of bone structure and mass. Restriction of opportunities to physical activity practice can constitute an important risk factor for health, with repercussions on the physical health of children. Synthesis studies and other physical activity Guidelines indicate that higher amounts of physical activity are associated with better bone health indicators; however, the quality of the available evidence ranged from very low to low. The amount of activity necessary to improve bone health measures (for example, bone density and mineral content) in children younger than 6 years old is not known yet.
Improves heart health and physical fitness.	The quality of the available evidence is very low. Although synthesis studies and other PA Guidelines cite the benefits of PA practice to cardiometabolic health and physical fitness, the findings are still limited and inconsistent.
Physically active children tend to maintain physical activity practice throughout life.	Childhood represents a critical stage during which children's behavior in relation to physical activity is established, becoming stable and increasingly difficult to change over time. Generally speaking, studies that monitor physical activity patterns indicate stability of physical activity indicators in children. The quality of the evidence ranged from low to moderate.
Dose	
Up to 1 year old: at least 30 minutes per day lying on the belly (prone position). This amount of time can be distributed throughout the day.	Recommendation present in other Guidelines (South Africa, Australia, Canada, United Kingdom, WHO). Infants should be physically active several times a day, particularly by means of interactive floor-based play. They should be stimulated to make movements in prone position, distributed throughout the day while they are wake. In the consultation, we observed that all the parents or guardians (n=20) understood the recommendation and the majority (n=18) reported that the children meet this recommendation.

Continue of **Table 1 –** Physical activity recommendations for children up to 5 years old and justification for inclusion in the Physical Activity Guidelines for the Brazilian Population

Recommendation	Justification
Dose	
From 1 to 2 years old: at least 3 hours per day of physical activities at any intensity. The activities can be distributed throughout the day.	Recommendation present in other Guidelines (South Africa, Australia, Canada, United Kingdoma and WHO). In the consultation, we observed that all the parents or guardians (n=51) understood the recommendation and the majority (n=40) reported that the children meet this recommendation.
From 3 to 5 years old: at least 3 hours per day of physical activities at any intensity, at least 1 hour of which at moderate to vigorous intensity, which can be accumulated throughout the day.	Recommendation present in other Guidelines (South Africa, Australia, Canada, United Kingdom, and WHO). In the consultation, we observed that all the parents or guardians (n=123) understood the recommendation and the majority (66.7%, n=82) reported that the children meet this recommendation.
The greater the amount of physical activity, the better for health.	Recommendation present in other guidelines (Australia, Canada, USA and WHO). It is suggested that the higher the frequency and/or duration of physical activity practice, the greater the benefits to physical and mental health. It is also recommended that children be stimulated to perform a variety of physical activities at any intensity, with the purpose of obtaining health benefits.
Types of physical activities	
Games, play and structured activities, like participation in sports schools and in physical education classes.	Research has shown that children who participate in structured activities and in physical education classes are more active. In addition, other physical activity Guidelines (USA, Chile and Uruguay) also provide these recommendations of activities for this age group. During the public consultation, we observed that the school/day-care center offering physical education classes or complementary motor activities could be a good strategy to increase children's level of physical activity.
Joyful and safe physical activities supervised by parents, guardians and teachers, and adequate to the child's age.	It was observed that the parents' participation in physical activities with their children was inversely associated with low level of physical activities in preschoolers. In addition, other physical activity Guidelines (USA, Chile and Uruguay) also provide these recommendations. During the public consultation, we observed that both parents and teachers mentioned they fear that the children would get hurt during physical activities, which could be minimized when the activities are supervised and age-adequate.
Types of physical activities	
Up to 1 year old: play and games involving activities in which the child lies on their belly (in prone position) or sits and moves the limbs, and which stimulate the child to reach, grip, push, pull, crawl, roll, balance with or without support, sit and stand, among others.	Studies have shown the importance of movement for this age group, recommending that children should be stimulated to perform interactive floor-based activities and should remain lying on their bellies if they do not know how to crawl yet, aiming at the development benefits associated with physical activity. In addition, other physical activity Guidelines (Chile and Uruguay) also provide these recommendations. During the public consultation, we found that children in this age group prefer activities like rolling, pulling and picking up toys, crawling and playing on the floor.
From 1 to 2 years old: play and games involving activities like balancing on both feet, balancing on one foot, turning, crawling, walking, running, hopping, climbing, jumping, throwing, casting, bouncing and gripping, among others.	Research recommends that children in this age group should be stimulated to perform a variety of activities at any intensity and to develop motor skills, aiming at the benefits associated with physical activity. In addition, other physical activity Guidelines (Chile and Uruguay) also provide these recommendations. During the public consultation, we found that games and play involving running and jumping are considered the most attractive ones for this age group, both by parents/guardians and by teachers.
From 3 to 5 years old: play and games involving activities like walking, running, turning, kicking, throwing, jumping and crossing or climbing objects, among others. In this age group, physical activity can also be performed in physical education, swimming, gymnastics, martial arts, dancing and sports classes. Another option is getting to and from places in an active way, walking or cycling, always accompanied by parents or guardians.	Research recommends that children in this age group should be stimulated to perform a variety of activities at any intensity and to develop motor skills, aiming at the benefits associated with physical activity. In addition, other physical activity Guidelines (Chile and Uruguay) also provide these recommendations. During the public consultation, we found that the child's participation in sports schools, as well as going to and coming back from school in an active way, are good strategies to stimulate physical activity practice. In addition, ball games and playing with balls were considered the most attractive activities for this age group, both by parents/guardians and by teachers.
Types of physical activities	
Up to 1 year old: play and games involving activities in which the child lies on their belly (in prone position) or sits and moves the limbs, and which stimulate the child to reach, grip, push, pull, crawl, roll, balance with or without support, sit and stand, among others.	Studies have shown the importance of movement for this age group, recommending that children should be stimulated to perform interactive floor-based activities and should remain lying on their bellies if they do not know how to crawl yet, aiming at the development benefits associated with physical activity. In addition, other physical activity Guidelines (Chile and Uruguay) also provide these recommendations. During the public consultation, we found that children in this age group prefer activities like rolling, pulling and picking up toys, crawling and playing on the floor.

Continue of **Table 1 –** Physical activity recommendations for children up to 5 years old and justification for inclusion in the Physical Activity Guidelines for the Brazilian Population

Recommendation	Justification
From 1 to 2 years old: play and games involving activities like balancing on both feet, balancing on one foot, turning, crawling, walking, running, hopping, climbing, jumping, throwing, casting, bouncing and gripping, among others.	Research recommends that children in this age group should be stimulated to perform a variety of activities at any intensity and to develop motor skills, aiming at the benefits associated with physical activity. In addition, other physical activity Guidelines (Chile and Uruguay) also provide these recommendations. During the public consultation, we found that games and play involving running and jumping are considered the most attractive ones for this age group, both by parents/guardians and by teachers.
From 3 to 5 years old: play and games involving activities like walking, running, turning, kicking, throwing, jumping and crossing or climbing objects, among others. In this age group, physical activity can also be performed in physical education, swimming, gymnastics, martial arts, dancing and sports classes. Another option is getting to and from places in an active way, walking or cycling, always accompanied by parents or guardians.	Research recommends that children in this age group should be stimulated to perform a variety of activities at any intensity and to develop motor skills, aiming at the benefits associated with physical activity. In addition, other physical activity Guidelines (Chile and Uruguay) also provide these recommendations. During the public consultation, we found that the child's participation in sports schools, as well as going to and coming back from school in an active way, are good strategies to stimulate physical activity practice. In addition, ball games and playing with balls were considered the most attractive activities for this age group, both by parents/guardians and by teachers.
Types of physical activities	
Up to 1 year old: play and games involving activities in which the child lies on their belly (in prone position) or sits and moves the limbs, and which stimulate the child to reach, grip, push, pull, crawl, roll, balance with or without support, sit and stand, among others.	Studies have shown the importance of movement for this age group, recommending that children should be stimulated to perform interactive floor-based activities and should remain lying on their bellies if they do not know how to crawl yet, aiming at the development benefits associated with physical activity. In addition, other physical activity Guidelines (Chile and Uruguay) also provide these recommendations. During the public consultation, we found that children in this age group prefer activities like rolling, pulling and picking up toys, crawling and playing on the floor.
From 1 to 2 years old: play and games involving activities like balancing on both feet, balancing on one foot, turning, crawling, walking, running, hopping, climbing, jumping, throwing, casting, bouncing and gripping, among others.	Research recommends that children in this age group should be stimulated to perform a variety of activities at any intensity and to develop motor skills, aiming at the benefits associated with physical activity. In addition, other physical activity Guidelines (Chile and Uruguay) also provide these recommendations. During the public consultation, we found that games and play involving running and jumping are considered the most attractive ones for this age group, both by parents/guardians and by teachers.
From 3 to 5 years old: play and games involving activities like walking, running, turning, kicking, throwing, jumping and crossing or climbing objects, among others. In this age group, physical activity can also be performed in physical education, swimming, gymnastics, martial arts, dancing and sports classes. Another option is getting to and from places in an active way, walking or cycling, always accompanied by parents or guardians.	Research recommends that children in this age group should be stimulated to perform a variety of activities at any intensity and to develop motor skills, aiming at the benefits associated with physical activity. In addition, other physical activity Guidelines (Chile and Uruguay) also provide these recommendations. During the public consultation, we found that the child's participation in sports schools, as well as going to and coming back from school in an active way, are good strategies to stimulate physical activity practice. In addition, ball games and playing with balls were considered the most attractive activities for this age group, both by parents/guardians and by teachers.
Types of physical activities	
Children should be physically active several times a day.	Studies have shown that the greater the amount of physical activity the child performs, the greater the benefits obtained. In addition, other physical activity Guidelines (Chile, WHO and Uruguay) also provide these recommendations. During the public consultation, we found that organizing various periods to play with the child during the day is a good strategy to increase their practice of physical activity.
It is advisable that the child learns how to swim, float, dive and adapt to the water environment.	Research has shown that participation in swimming classes significantly reduces the risk of water accidents, like drowning. This recommendation was also present in the physical activity Guidelines published by Uruguay. During the public consultation, parents and guardians mentioned that swimming pool activities are among the most attractive ones to children.
Guidance for practice	
Children can be physically active in their homes, participating in activities with the family, mainly when it is not possible to undertake outdoor activities.	Studies have highlighted the importance of outdoor physical activities. Other Guidelines (USA, Canada and Chile) have approached the importance of stimulating children to help with household chores. Parents and guardians mentioned they engage their children in household chores as a strategy to increase physical activity.
Walking or cycling to school or to the day-care center can be a good way of including movement in the child's life.	Studies have shown a positive association between going to and from places actively and level of physical activity. In the public consultation, parents and guardians indicated this strategy.
The support of parents, guardians or caregivers is fundamental for children to participate in games, play and other types of physical activity that stimulate responsibility and autonomy.	A robust body of knowledge shows the importance of parents' or guardians' involvement to increase the child's physical activity levels. This recommendation is present in different Guidelines (USA, Canada, Uruguay and Chile).

Continue of **Table 1 –** Physical activity recommendations for children up to 5 years old and justification for inclusion in the Physical Activity Guidelines for the Brazilian Population

Recommendation	Justification
Guidance for practice	
Music can be a good ally in the promotion of physically active habits.	In the public consultation, this was mentioned by a high number of parents/guardians and teachers as a strategy to promote the physical activity of preschoolers.
Children older than 6 months must drink water before, during and after the practice of physical activity.	Recommendations included in the Dietary Guidelines for the Brazilian Population
Teachers should include movement, active regional play and games in the routine of school activities.	Recommendation contained in other Guidelines (USA and Chile) and suggested for inclusion during the public consultation process.
When parents and guardians participate in the physical activity with their children, the likelihood of these children being physically active increases.	Studies have shown that parents' participation in the activities is positively associated with the children's participation in physical activities and level of physical activity. This recommendation is present in different Guidelines (USA, Canada and Chile).
Sedentary behavior	
Time spent using mobile phones, computers, tablets, videogames and television should be reduced as much as possible.	Excessive sedentary behavior, mainly related to screen use in the free time, is associated with several negative human development indicators in the early years.
Up to 1 year old, screen time is not recommended. Children aged 1 to 5 years can use those devices up to 1 hour per day.	These recommendations are supported by a body of scientific knowledge. It is important that parents/guardians can apply them to their homes to favor the integral development of their children.
Sedentary behavior	
The lower the time children remain in sedentary behavior, the better for health.	The damages to development that are associated with excessive time in sedentary behavior are widely recognized. Thus, it is important to implement restrictive measures and propose active alternatives.
Replacement of sedentary behavior with physical activities should be stimulated.	Respecting contexts and possibilities, it is important that children can engage in active activities, no matter if they are performed at lighter intensities. Complementarily, parents/guardians should also participate in play and games together with the child.
When sedentary behavior is inevitable, stimulate the children to undertake cultural and educational activities like painting, drawing, building blocks, jigsaw puzzles and storytelling with movement.	Sedentary behavior with educational purposes is associated with children's cognitive development. Therefore, it is recommended that, when sedentary behavior is inevitable, children be guided to undertake cultural and educational activities.
Reducing the time spent using mobile phones, computers, tablets, videogames and television helps in weight control, improves motor and cognitive development, and helps the development of social skills.	Excessive screen time is associated with several negative human development indicators. Even though sedentary behavior is necessary to the performance of several daily tasks, breaks should be introduced so that children do not remain sitting for a very long time without interruptions. Children should also be guided to use electronic devices for cultural and educational purposes.
For a healthy development, when infants and children are awake, they should not spend more than 1 hour at a time restrained in strollers, high chairs and cradles.	Avoiding that children remain sitting and restrained in strollers, high chairs and cradles for more than one hour at a time is preferable, in view of its association with motor development. Children should be stimulated to perform movements.

documents converged concerning benefits, like the importance of physical activity in weight control and in the promotion of a healthy growth and development. In relation to types and examples of physical activity, the predominant guidance was related to offering "joyful, safe, supervised and age-adequate physical activities" and "participation in games, play and structured activities". We also found recommendations to stimulate children to perform physical activities several times a day and about the importance of the support and encouragement of parents, guardians or caregivers so that physical activities can be included in the children's routine.

Overall, 194 parents or guardians of children up to five years old participated in the consultation, mainly mothers (72.2%) with mean age of 36.1 years (SD = 6.5); 64.9% of them reported having a postgraduate degree and 63.4% had children aged three to five years. In relation to the children, most attended private schools (58.2%) in the morning period (32.5%). As for teachers, of the 151 participants, the majority of the answers was given by women (94.7%) who worked in public schools (82.5%), aged 22 to 68 years. The participant teachers had completed higher education (52.3%) or held a postgraduate degree (42.4%). The questionnaires were answered by people from all regions of Brazil. The

highest percentage of answers came from the Northeast region, both for parents and caregivers (50%) and for teachers (80%).

The physical activity recommendations were largely understood, both by parents/guardians (100%) and by teachers (98%). Regarding children's adherence to the physical activity recommendations, we found that, in the perception of parents or guardians, 72.2% of the children meet the recommendations of daily amounts of age-adequate physical activities. In the teachers' perception, 84.1% of the children meet the physical activity recommendations. The main strategies mentioned by parents or guardians for children to practice physical activity are the utilization of parks and outdoor locations where the child can play and engage in games, and the creation of a play routine with the children. On the other hand, the main barriers mentioned by them were absence of other children near the residence and being too tired to engage in play.

As for teachers, they mentioned that the main strategies to increase children's engagement in physical activities are outdoor play, participating in the activities with the children, and organizing sessions of motor activities. Fear that the children would get hurt is the main barrier reported by teachers to increasing physical activity practice in this subgroup.

After the physical activity recommendations for children up to 5 years old were submitted to the public consultation, 35 valid suggestions were offered, of which 18 were incorporated into the text and 16 were rejected. The main reasons for not accepting valid suggestions were lack of a theoretical framework for what was proposed and submission of suggestions that were not adequate to the age group or focused on other behaviors and not on physical activity practice, being outside the scope of the Guidelines.

At the end of the process, the chapter of the Physical Activity Guidelines for the Brazilian Population regarding children up to five years old was developed considering a total of 35 recommendations. Table 1 presents the recommendations and a short text synthesizing the theoretical framework and the justification for the inclusion of each recommendation in the Guidelines. The recommendations are organized in four dimensions: (1) health benefits; (2) dose; (3) types and examples; and (4) guidance for practice. Additionally, recommendations to reduce this subgroup's exposure to sedentary behavior were included, forming a fifth dimension.

Discussion

The physical activity recommendations for children up to five years old were developed to provide guidance for Brazilian citizens on how to make children's daily life become more active, respecting the characteristics and sociocultural contrasts of a country with continental dimensions like Brazil. The recommendations are presented in chapter 2 of the Physical Activity Guidelines for the Brazilian Population, an initiative of the Ministry of Health that puts, once again, physical activity promotion in the national public health agenda.

The Guidelines were designed to be a document written in accessible language to different target audiences, so that it can convey a clear public health message about the importance of physical activity for people of all ages, including infants. One of the main messages conveyed in the recommendations for children up to 5 years old is that children are not "naturally active", and low levels of physical activity and high exposure to sedentary behaviors can be seen in children in this age group (early childhood).

The recommendations on daily dose of physical activity converge with what is presented in other international guidelines[1,3,4], including guidelines published by American countries[2,21]. Thus, the findings that supported the proposal of the Brazilian recommendations confirm that children younger than one year should perform at least 30 minutes per day of activity in prone position (lying on the belly), while children aged between one and five years should perform at least 180 minutes per day of physical activity at any intensity. Furthermore, from three to five years of age, it is important to include at least 60 minutes of moderate- to vigorous-intensity physical activity throughout the day.

The recommendations related to the need of restricting sedentary behavior also coincide with what was proposed in other international guidelines[2,4]. Therefore, it is recommended that children younger than one year old should not be exposed to the utilization of electronic devices or screens. From one year of age onwards, it is recommended that the period does not exceed one hour per day. For a healthy development, it is also recommended that infants and children should not be restrained for more than one hour at a time in strollers, high chairs and cradles while awake.

As it was mentioned above, physical activity practice in this age group provides countless benefits[5] and is essential for a healthy growth and development, as the early years are a period of rapid physical, cogni-

tive, social and emotional development[4]. In addition, early childhood is a phase in which stimulation to the incorporation of habits can concur to the adoption of an active lifestyle in the subsequent life cycles. It is in this phase that the child's behaviors in relation to physical activity are established, becoming more stable and gradually difficult to change over time[11,12].

Studies that investigated the sociodemographic, environmental and behavioral determinants and correlates of physical activity practice in different places and geographical regions have found different prevalence values of low level of physical activity in the five regions of Brazil. In addition, it was found that age and level of schooling are the main factors associated with low level of physical activity[22]. It is known that socioeconomic level is an important determinant of development during the preschool period[23], especially when one considers the income discrepancies in the Brazilian population. Additionally, studies with children up to five years old have found that the mother's level of schooling[24], family income[25] and social environment[26] have a direct influence on the child's physical activity levels. Therefore, due to the Brazilian demographic and cultural differences, it is necessary that actions to promote physical activity have different approaches in each of the five regions of Brazil[22].

Furthermore, it is important to highlight that children learn by playing - with adults or with other children. Due to this, teachers should include movement, active regional play and games in the routine of school activities. Studies have shown that the offer of Physical Education classes or structured physical activity at school are factors associated with higher levels of physical activity in children[26]. At the same time, parents' participation and engagement during physical activity increase the likelihood of the child being physically active[13,18,19]. Moreover, studies have found a positive association between the parents' level of physical activity and the child's level of physical activity[24,27]. Therefore, it is important that parents and guardians participate in games, play and other types of physical activity with their children, a recommendation included in the Guidelines.

Low level of physical activity is one of the main risk factors for the development of chronic diseases[28]. In Brazil, a study has found a high prevalence of insufficient levels of physical activity in adults in the Brazilian capitals[29]. A study with Brazilian preschoolers has detected insufficient physical activity levels in the early years[13]. Thus, the WHO has launched the Global Action Plan on Physical Activity 2018-2030, which aims to promote actions to make people become more active during the next decade. These recommendations can and should be used by health professionals and managers in the planning of actions and programs aiming to increase the physical activity level of preschoolers.

However, it is necessary to bear in mind that the mere existence of the Guidelines does not guarantee the increase in the population's physical activity levels[14]. It is essential that strategies of communication and dissemination of the recommendations and appropriate physical activity promotion actions be employed to generate a positive impact on the country's physical activity indicators[20]. Considering that data about Brazilian preschoolers' physical activity level are scarce[30], these recommendations can support the monitoring and assessment of the physical activity levels of children up to five years old and, consequently, guide future research in the area[14]. Furthermore, the Brazilian physical activity recommendations for children up to 5 years old can be the basis for the establishment of goals and objectives for national policies that aim to increase the physical activity of preschoolers[15]. Further studies must be conducted to identify different types and doses of physical activity in this phase, as well as the benefits deriving from increasing physical activity and reducing sedentary behavior.

The recommendations for children up to five years old included in the Physical Activity Guidelines for the Brazilian Population convey a public health message related to guidance on the inclusion of regular physical activity practice in early childhood. They corroborate the guidelines published by the WHO[4], contextualizing them according to the demographic and cultural characteristics of the Brazilian population and including specific recommendations based on knowledge produced by studies conducted in Brazil and South America.

The recommendations emphasize that performing any amount of physical activity is better than none, and that sedentary behavior should be reduced as much as possible. Beyond the well-known benefits of physical activity to health, it is also recognized that active children are more likely to become active adolescents and adults. The importance of playfulness, of games and play as types of activities that can be stimulated in this age group, is highlighted in the set of recommendations, as well as the role that parents, guardians or

caregivers can play in stimulating children to include physical activities in their daily routine.

This study presents some limitations, namely the methodological quality of the studies identified in the scoping review and the reduced number of studies of the intervention type; however, this was only one of the processes that supported the construction of the recommendations. The higher number of respondents from the Northeast region in the process of consultation with target audiences can be seen as a limitation; however, all the regions contributed answers of parents, caregivers and teachers. In this sense, the period of two weeks for the public consultation with specialists can be understood as short to reach a higher number of respondents.

Finally, the recommendations for children up to five years old can contribute to improve the monitoring and assessment of physical activity levels in this age group and, consequently, support the planning of physical activity promotion actions. It is important to highlight that the content of the recommendations must be broadly disseminated. Health professionals and managers can spread the content of the Guidelines and the recommendations through different strategies, in schools, Primary Care Units, and in the community as a whole.

Conflicts of interest

The authors declare no conflict of interest.

Funding

This work describes the physical activity recommendations for children up to 5 years old that are provided in the Physical Activity Guidelines for the Brazilian Population, funded by the Ministry of Health by means of the Decentralized Execution Instrument No. 56/2019 (project: 79224219002/2019; process: 25000.171034/2019-27).

Authors' contribution

Silva LR headed the writing of the manuscript and participated in data collection, analysis and interpretation. Hardman CM, Martins CL, Guerra PH, Souza Filho AN, Queiroz DR and Wanderley Junior RS reviewed the manuscript critically and participated in data collection, analysis and interpretation. Umpierre D, Cavalcante FVSA, Sandreschi PF and Barros MVG reviewed the manuscript critically and participated in data analysis and interpretation. Hallal PC participated in the conception, writing and general review of the manuscript. All the authors participated in all the development stages of the physical activity recommendations for children aged 0 to 5 years and approved the final version of the manuscript.

Acknowledgements

The authors would like to thank the Ministry of Health, especially the team of the Health Promotion Department, and the Delfim Mendes Silveira Foundation of the Federal University of Pelotas. To the parents and teachers who participated in the public consultation and to the specialists and professionals who contributed to the critical review of the Guidelines during the public consultation.

References

1. Canadian Society for Exercise Physiology. Canadian 24-hour movement guidelines: an integration of physical activity, sedentary behaviour, and sleep [Internet]. Canadian 24-hour movement guidelines for the years (0-4 yeras). 2016 [cited 2021 Jan 21]. Available from: https://csepguidelines.ca/
2. Draper CE, Tomaz SA, Biersteker L, Cook CJ, Couper J, de Milander M, et al. The South African 24-hour movement guidelines for birth to 5 years: An integration of physical activity, sitting behavior, screen time, and sleep. J Phys Act Heal. 2020;17(1):109–20.
3. World Health Organization. Guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age [Internet]. World Health Organization. Geneva; 2019 [cited 2021 Jan 22]. Available from: https://apps.who.int/iris/handle/10665/311664
4. Carson V, Lee EY, Hewitt L, Jennings C, Hunter S, Kuzik N, et al. Systematic review of the relationships between physical activity and health indicators in the early years (0-4 years). BMC Public Health. 2017;17(19):33–63.
5. Pate RR, Hillman CH, Janz KF, Katzmarzyk PT, Powell KE, Torres A, et al. Physical activity and health in children younger than 6 years. Med Sci Sport Exerc [Internet]. 2019 Jun 1 [cited 2021 Jan 22]; 51(6):1282–91. Available from: http://journals.lww.com/00005768-201906000-00023
6. Janssen X, Martin A, Hughes AR, Hill CM, Kotronoulas G, Hesketh KR. Associations of screen time, sedentary time and physical activity with sleep in under 5s: A systematic review and meta-analysis. Sleep Med Rev. 2020;49(101226):1–18.
7. Zeng N, Ayyub M, Sun H, Wen X, Xiang P, Gao Z. Effects of physical activity on motor skills and cognitive development in early childhood: A systematic review. Biomed Res Int [Internet]. 2017 [cited 2021 Jan 22]; 2017:1–14. Available from: https://pubmed.ncbi.nlm.nih.gov/29387718/
8. Eaton WO, McKeen NA, Campbell DW. The waxing and waning of movement: implications for psychological development. Dev Rev. 2001;21(2):205–23.
9. Barros SSH, Nahas MV, Hardman CM, Bezerra J, Barros MVG de. Longitudinal follow-up of physical activity from preschool to school age: The ELOS-Pré study. Rev Bras Cineantropometria e Desempenho Hum. 2019;21:1–11.
10. Caldwell HAT, Proudfoot NA, King-Dowling S, Di Cristofaro NA, Cairney J, Timmons BW. Tracking of physical activity and fitness during the early years. Appl Physiol Nutr Metab . 2016;41(5):504–10.
11. Telama R, Yang X, Leskinen E, Kankaanpää A, Hirvensalo M, Tammelin T, et al. Tracking of physical activity from early childhood through youth into adulthood. Med Sci Sports Exerc. 2014;46(5):955–62.

12. Martins CML, Lemos LFGBP, Souza Filho AN, Bezerra TA, Soares IAA, Mota JG, et al. Adherence to 24-hour movement guidelines in low-income Brazilian preschoolers and associations with demographic correlates. Am J Hum Biol [Internet]. 2020 Oct 19 [cited 2021 Jan 15]; e23519. Available from: https://onlinelibrary.wiley.com/doi/10.1002/ajhb.23519

13. Milton K, Bauman AE, Faulkner G, Hastings G, Bellew W, Williamson C, et al. Maximising the impact of global and national physical activity guidelines: the critical role of communication strategies. Br J Sports Med [Internet]. 2020 Dec 1;54(24):1463 LP – 1467. Available from: http://bjsm.bmj.com/content/54/24/1463.abstract

14. Troiano RP, Stamatakis E, Bull FC, Factor R. How can global physical activity surveillance adapt to evolving physical activity guidelines? Needs, challenges and future directions Risk Factor Assessment. Br J Sport Med [Internet]. 2020 [cited 2021 Jan 11];54(1):1468–73. Available from: http://bjsm.bmj.com/

15. Guerra PH, Garcia LMT, Ribeiro EHC, Maretti ALR, Andrade DR., Florindo AA. Identificação e análise das diretrizes nacionais de atividade física nas Américas. Cienc Saude Coletiva [periodico online] [Internet]. 2020 [cited 2021 Jan 22];Jun 2020. Available from: http://www.cienciaesaudecoletiva.com.br/artigos/identificacao-e-analise-das-diretrizes-nacionais-de-atividade-fisica-nas-americas/17643

16. Liberati A, Altman DG, Tetzlaff J, Mulrow C, Gøtzsche PC, Ioannidis JPA, et al. The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. Vol. 6, PLoS Medicine. 2009.

17. Hesketh KR, Lakshman R, Van Sluijs EMF. Barriers and facilitators to young children's physical activity and sedentary behaviour: a systematic review and synthesis of qualitative literature. Vol. 18, Obesity Reviews. 2017. p. 987–1017.

18. Hoyos-Quintero AM, García-Perdomo HA. Factors related to physical activity in early childhood: A systematic review. J Phys Act Heal. 2019;16(10):925–36.

19. Romo ML, Abril-Ulloa V. Improving nutrition habits and reducing sedentary time among preschool-aged children in Cuenca, Ecuador: A trial of a school-based intervention. Prev Chronic Dis. 2018;15(96):1–9.

20. Gobierno de Chile. Recomendaciones para la práctica de actividad física según curso de vida. Santiago de Chile; 2017.

21. Mielke GI, Malta DC, de Sá GBAR, Reis RS, Hallal PC. Diferenças regionais e fatores associados à prática de atividade física no lazer no Brasil: Resultados da pesquisa nacional de saúde-2013. Rev Bras Epidemiol [Internet]. 2015 Dec 1 [cited 2021 Jan 15];18:158–69. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1415-790X2015000600158&lng=en&nrm=iso&tlng=pt

22. Lu C, Black MM, Richter LM. Risk of poor development in young children in low-income and middle-income countries: an estimation and analysis at the global, regional, and country level. Lancet Glob Heal [Internet]. 2016 Dec 1 [cited 2021 Jan 15];4(12):e916–22. Available from: www.thelancet.com/lancetgh

23. Ricardo LIC, Silva ICM da, Leão OADA, Domingues MR, Wehrmeister FC. Objectively measured physical activity in one-year-old children from a Brazilian cohort: Levels, patterns and determinants. Int J Behav Nutr Phys Act. 2019;16(131):1–13.

24. Goncalves WSF, Byrne R, Viana MT, Trost SG. Parental influences on screen time and weight status among preschool children from Brazil: A cross-sectional study. Int J Behav Nutr Phys Act. 2019;16(27):1–8.

25. Melo EN, Barros M, Reis RS, Hino AAF, Santos CM, Farias Junior JC. O ambiente no entorno da escola está associado ao deslocamento ativo para escola em pré-escolares? Rev Bras Cineantropometria e Desempenho Hum [Internet]. 2013 [cited 2021 Jan 21];15(4):393–404. Available from: http://dx.doi.org/10.5007/1980-0037.2013v15n4p393

26. Wanderley Júnior R, Hardman C, Oliveira E, Brito A, Barros S, Barros M. Fatores parentais associados à atividade física em pré-escolares: a importância da participação dos pais em atividades físicas realizadas pelos filhos. Rev Bras Ativ Fís Saúde. 2013;18(2):205–14.

27. Hallal PC, Andersen LB, Bull FC, Guthold R, Haskell W, Ekelund U. Global physical activity levels: surveillance progress, pitfalls, and prospects. Lancet [Internet]. 2012;380(9838):247–57. Available from: http://www.sciencedirect.com/science/article/pii/S0140673612606461

28. Streb AR, Matias TS, dos Santos Leonel L, Tozetto WR, Vieira CG, del Duca GF. Association between physical inactivity in leisure, work, commuting, and household domains and nutritional status in adults in the capital cities of Brazil. Rev Nutr [Internet]. 2019 [cited 2021 Apr 2];32. Available from: http://dx.doi.org/10.1590/1678-9865201932e180276

29. Guerra PH, Barbosa Filho VC, Almeida A, Silva L de S, Pinto MTV, Leonel RM, et al. Revisão sistemática dos indicadores de atividade física e de comportamento sedentário em pré-escolares sul-americanos. Rev Paul Pediatr [Internet]. 2020 [cited 2021 Jan 21];38:1–10. Available from: http://dx.doi.org/10.1590/1984-0462/2020/38/2018112

Received: 01/31/2021
Approved: 04/13/2021

Quote this article as:

Silva LR, Hardman CM, Martins CL, Guerra PH, Souza Filho AN, Queiroz DR, Umpierre D, Wanderley Junior RS, Cavalcante FVSA, Sandreschi PF, Hallal PC, Barros MVG. Physical activity for children up to 5 years old: Physical Activity Guidelines for the Brazilian Population. Rev Bras Ativ Fís Saúde. 2021;26:e0213. DOI: 10.12820/rbafs.26e0213