

Physical Activity Guidelines for the Brazilian Population: Development and Methods

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Background: This article describes the process and methods used in the development of the first ever Physical Activity Guidelines for the Brazilian Population. **Methods:** The steering committee established 8 working groups based on other guidelines and the Brazilian agenda for public health and physical activity (PA) promotion: (1) understanding PA; (2) children up to 5 years; (3) children and youth (6–17 y); (4) adults; (5) older adults (60 years and above); (6) physical education at school; (7) pregnant and postpartum women; and (8) people with disabilities. Working groups were formed to (1) synthesize the literature on each topic; (2) conduct workshops with stakeholders, health professionals, researchers, and the public; and (3) prepare a draft chapter for open online consultation. **Results:** The document provides guidance for the population on the benefits of being active and recommendations regarding the amount (frequency, intensity, and duration) of PA recommended across all chapters. It also includes information on supporting networks for PA. **Conclusions:** The PA guidelines are widely accessible in Portuguese, including versions in English, Spanish, audiobook, and Braille, and will assist policy makers and professionals from several sectors to promote PA. The ultimate goal is to increase population levels of PA in Brazil.

Keywords: guidelines and recommendations, public health

Since the turn of the 21st century, Brazil's contributions to the science, surveillance, and promotion of physical activity (PA) have established it as a leader in the field of PA and health.¹ These contributions include building infrastructure (eg, creation of a journal, a society, and a congress specifically to cover PA and health), establishing surveillance (inclusion of PA in the Surveillance System of Risk and Protection Factors for Chronic Diseases by Telephone Survey, the Brazilian National School-Based Survey, and the National Health Survey), delivering wide PA interventions (eg, Agita São Paulo and Academia da Saude),² and engaging in high-level scientific activities (eg, leadership role in the Lancet PA Series, and hosting the International Congress of PA and Public Health) (Figure 1).

Despite being one of the protagonists in the field of PA and health, Brazil is challenged by high rates of physical inactivity, which represent a crucial public health issue. According to the Global PA Observatory, 13.2% of all deaths in the country are due to physical inactivity, well above the global rate.³ Alarming data reveal that only one-fifth of Brazilian adolescents are considered

physically active,⁴ while almost half of the adult population does not reach the recommended levels of PA.⁵

Considering the pandemic of physical inactivity and the global target to reduce levels of physical inactivity in adults and adolescents by 15% by 2030,⁶ the World Health Organization (WHO) recently launched the 2020 Guidelines on PA and Sedentary Behavior,⁷ an updated version of the 2010 Global Recommendations on PA for Health. The WHO guidelines are a pivotal document guiding global and national actions on PA, which can be tailored to the unique aspects of each country. In this sense, the WHO recommends that countries establish national guidelines and set their PA targets,⁷ to enable people of all ages and abilities to be physically active and improve health.

Given that country characteristics have a profound impact on the thinking, policy, and practice of PA, adequate guidance for the population, health professionals, and other sectors, and policy-makers are required. With 26 states and 1 federal district, Brazil is the fifth largest country in the world, spread over 5 geographic regions. The country faces inequalities in income, sociodemographic, cultural, and health conditions, which make important the existence of PA guidelines.

To address this gap in 2019, the Brazilian Ministry of Health funded the development of the first ever evidence-based PA guidelines. These guidelines, targeted to end users (eg, general public,

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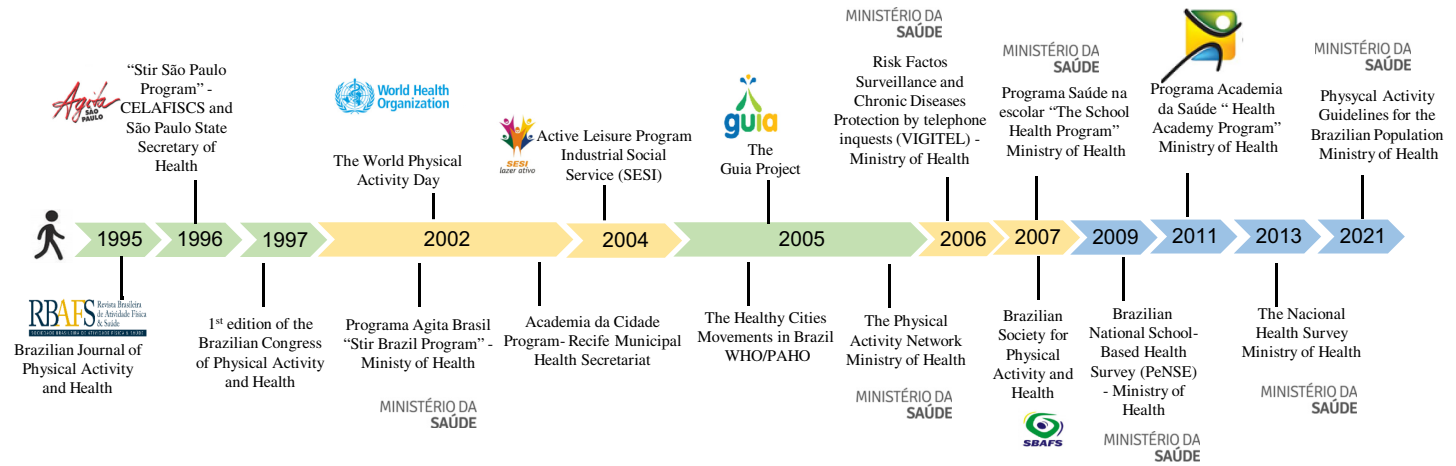


Figure 1 — A series of landmark events taking place in the Brazil.

public health practitioners, health care personnel, and policy makers), could encourage the Brazilian population to continue to be active or to become active. The aim of this manuscript was to outline the process and methods used to develop the recently released Physical Activity Guidelines for the Brazilian Population.⁸

Methods

Historical Context

The idea of developing Physical Activity Guidelines for the Brazilian Population is not new. Between 2000 and 2015, several researchers in the field attempted to engage the Ministry of Health to produce such a document. A change in attitude took place in 2015, when the Brazilian Society of PA and Health carried out a series of activities to discuss the development of PA guidelines for Brazil. The starting point was a meeting at the University of São Paulo School of Public Health, which included representatives from the Ministry of Health and researchers.

As a consequence of the meeting, the Brazilian Society created a working group that led a series of discussions on the topic between 2018 and 2019 through webinars, presentations in scientific meetings, and a public comment answered by 687 researchers, practitioners, and policymakers, with the objective of hearing what the potential end users of a PA guideline would expect from its content and structure. The majority reported that the guideline should target the general population and policy makers and include suggestions and recommendations to promote active lifestyles. In addition, it was suggested that the guidelines should involve health, education, and leisure sectors. All results were presented at the XII Brazilian Congress on Physical Activity and Health in October 2019, in Bonito, Mato Grosso do Sul.

In 2019, the Brazilian Ministry of Health, through the Coordination for the Promotion of Physical Activity and Intersectoral Actions (CGPOROFI from the Portuguese initials), commissioned the development of the national PA guidelines to the Federal University of Pelotas, the most productive research group in the field since 2000.

Establishing Domains for Working Groups

A steering committee was composed as follows: committee's chair, 5 scientific experts, each representing one of the 5 Brazilian regions;

1 representative from the Brazilian Society of Physical Activity and Health; 1 representative from the Pan American Health Organization; 1 international consultant; and 5 representatives from the Ministry of Health (Table 1). This committee met once a week, from March to October 2020, through a virtual platform.

In March 2020, the steering committee held a meeting to agree on the main chapters that should be covered by the guidelines. Eight working groups were defined: (1) understanding PA; (2) children up to 5 years; (3) children and youth (6–17 y); (4) adults; (5) older adults (60+ y); (6) physical education (PE) at school; (7) pregnant and postpartum women; and (8) people with disabilities.

A selection committee was established to recruit 7 to 8 participants for each working group. Candidates were required to have academic degrees, proven professional experience, and expertise in the field of PA. Separate selection processes were undertaken for working group coordinators and members, which took place in March and April 2020, respectively. Each working group was composed of 2 Scientific Committee representatives (1 scientific expert and 1 member of the Ministry of Health), 1 coordinator, and 8 members. Federal University of Pelotas and Coordination for the Promotion of Physical Activity and Intersectoral Actions served as administrative leads of the project. The steering committee and working group participants declare that there was no conflict of interest.

Establishing a Standardized Working Template

A template specifying the structure and expected content of each chapter of the Physical Activity Guidelines for the Brazilian Population was co-developed by the steering committee and the working group coordinators. The document included the following central questions: (1) What type and when to practice PA? (referring to examples of physical activities, considering the different domains, and contexts); (2) Why practice PA? (referring to the benefits of PA); (3) How to practice PA? (referring to recommendations on “how” to adopt a physically active lifestyle and overcome PA barriers); (4) How much to practice? (referring to the volume of PA), as well as complementary topics; (5) PA risks, safety, and health counseling; (6) sedentary behavior; (7) other relevant recommendations; and (8) settings and support networks for PA.

Table 1 Members of the Steering Committee

Panel member	Affiliation
Andrade, Douglas Roque	School of Arts, Sciences and Humanities. University of São Paulo, Brazil
Autran, Roseanne	Federal University of Amazonas, Brazil
Bandeira, Luisete Moraes	Pan American Health Organization
Cavalcante, Fabiana Vieira Santos Azevedo	Ministry of Health. Secretariat of Primary Health Care. Health Promotion Department, Brazil.
Florindo, Alex Antonio	School of Arts, Sciences and Humanities. University of São Paulo, Brazil
Garcia, Leandro Martin Totaro	Centre for Public Health, Queen's University Belfast, United Kingdom
Hallal, Pedro	Federal University of Pelotas, Brazil
Magalhães, Lorena Lima	Ministry of Health. Secretariat of Primary Health Care. Health Promotion Department, Brazil
Manta, Sofia Wolker	Ministry of Health. Secretariat of Primary Health Care. Health Promotion Department, Brazil
Ravagnani, Christianne Coelho	Federal University of Mato Grosso do Sul, Brazil
Sandreschi, Paula Fabricio	Ministry of Health. Secretariat of Primary Health Care. Health Promotion Department, Brazil
Silva, Juliana Rezende Melo da	Ministry of Health. Secretariat of Primary Health Care. Health Promotion Department, Brazil
Tenório, Maria Cecília Marinho	Federal Rural University of Pernambuco, Brazil
Umpierre, Daniel	Federal University of Rio Grande do Sul, Brazil

The project team participated in weekly online meetings. The PA guidelines per se were developed between May and November 2020, following 3 main phases: review of the evidence, public involvement workshops, and formal public comment. The methodological processes are described below and outlined in Figure 2.

Each working group drafted 2 documents. The first was the chapter for the target population group (eg, adults). The second was a technical report detailing the methodological aspects and results of the systematic reviews, public involvement workshops, and public comment.

Identifying and Assessing the Evidence

The working groups were instructed to develop a comprehensive review of the literature, including the evidence base of other recently published national guidelines and the 2020 WHO guidelines. These documents were critically reviewed in relation to the reported health effects, dose–response associations, and benefits of PA for health. Institutional websites were visited from scientific organizations such as the American College of Sports Medicine and the American Heart Association. In addition, a systematic review of reviews on the efficacy and effectiveness of PA promotion efforts in the target groups was conducted by some working groups. Detailed information on the evidence base informing the guidelines is provided in other publications.^{9–16} This phase focused on the benefits of PA, volume and type of PA for health benefits, and determinants, barriers, and facilitators of PA (overall and specifically for the Brazilian population). According to the specificities of each target theme and population group, scoping or systematic reviews of reviews or of original papers such as clinical trials, interventions, or observational studies, were conducted.

Electronic databases (PubMed, Scopus, SPORTDiscus, Web of Science, PsycINFO, ERIC, Literatura Latino-Americana e do Caribe em Ciências da Saúde, and Scientific Electronic Library Online) were systematically searched for specific terms in Portuguese, Spanish, or English, including only peer-reviewed original systematic reviews and/or meta-analysis. The usual scoping/systematic review steps and standards were followed. Two independent reviewers screened titles and abstracts for relevance based on the inclusion criteria established by each working group. Two independent reviewers conducted subsequent screening of the

entire text based on the same criteria. Finally, additional papers were identified in the reference lists of selected articles and recommendations of scientific experts.

Public Involvement Workshops

A public engagement process was conducted to enhance the comprehensiveness and implementation of the guidelines by bringing different lenses and perspectives from the population and considering the cultural and socioeconomic contrasts in Brazil.

Each working group conducted online surveys and/or focus groups with their key primary and/or secondary audiences, such as older adults, adults, youth, children, parents, and other family members, people with disability, PE teachers, researchers, policy makers, opinion leaders, health care professionals, caregivers, and community organizations. Stakeholders from multiple sectors (municipal, state, and federal health and education department) segments of the population were involved in this step. The online forms contained open and closed questions, based on the literature reviews. The leading questions were related to the importance of PA, barriers, and facilitators to PA, enjoyment, and preference for PA, and supporting networks for PA. A total of 1098 people of the 5 Brazilian regions participated in the online survey, and 75 people participated in the focus groups. The main goal was to contribute to the understanding of the process by which individuals and specific groups can exercise greater control over health determinants, and thereby improve their health status and that of the community through an active lifestyle.

The respondents (surveys and/or focus groups) were recruited using a “snowball” process or were invited directly via email or social media. Online forms were used for surveys. An online platform was used to conduct the focus groups, and each session lasted 60 to 120 minutes. The participation was voluntary, and the anonymity of respondents was guaranteed.

Public Comment

Once a draft version of the Physical Activity Guidelines for the Brazilian Population was ready, a public comment was carried out through an online survey. In addition, some technical areas from the Ministry of Health, as well as national institutions and health

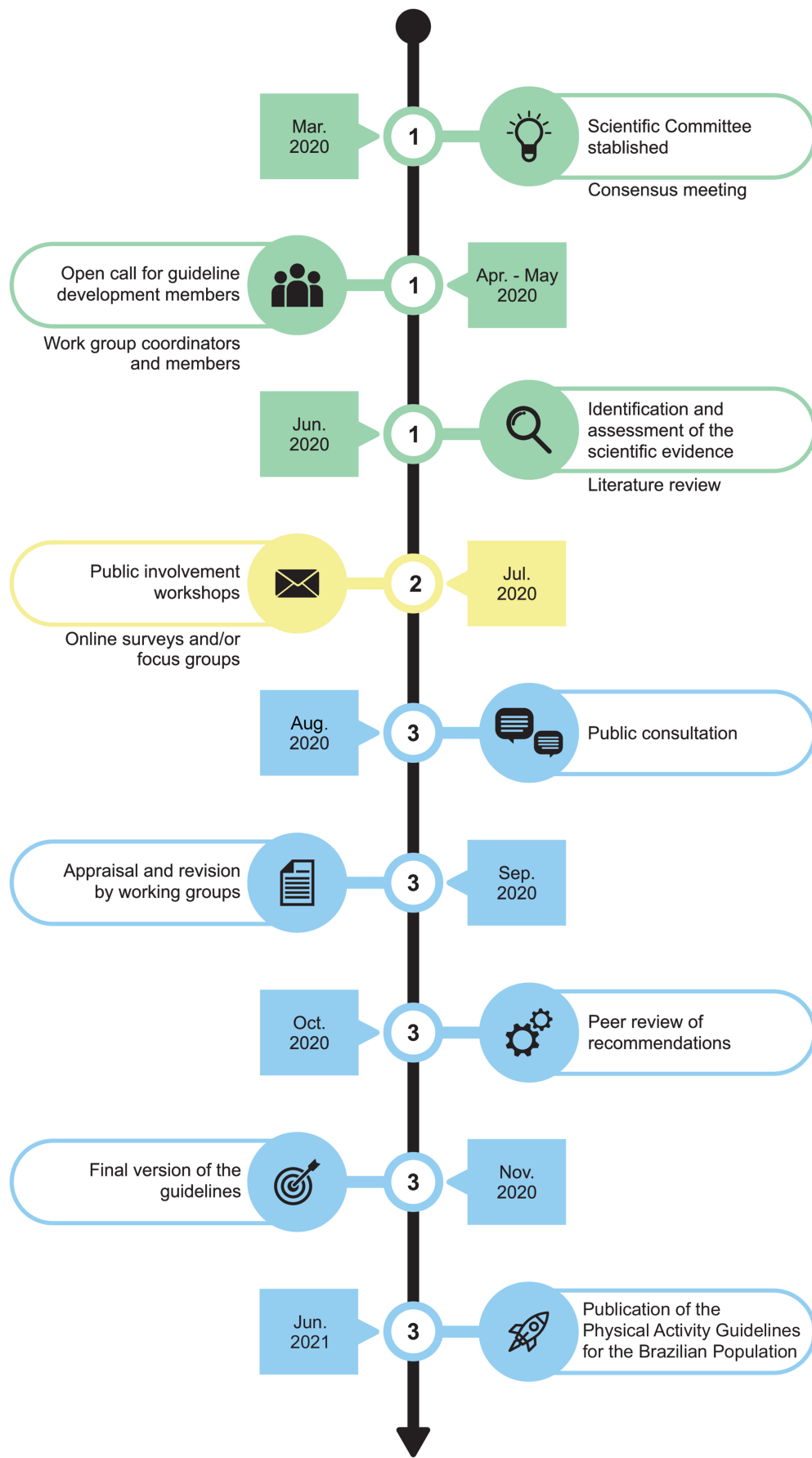


Figure 2 — Timeline and sequence of steps involved in the development of the Physical Activity Guidelines for the Brazilian Population.

professional bodies, and societies related to PA, were invited to participate through official invitation letters. Individuals from the 5 Brazilian regions participated, including policy makers, teachers, undergraduate and graduate students, researchers, health care professionals, health managers, and community organizations.

Participants were invited to suggest text edits (changes, exclusions, or inclusions) between August 14 and 31, 2020. All suggestions were compiled and appraised by the working groups based on the scientific literature and social context; of the 264 suggestions received from 25 states from all regions of Brazil, 174 (66%) were accepted and incorporated into the final guidelines. After all the adjustments in the text were incorporated, the Scientific Committee reviewed and forwarded the final version of the guidelines to the Ministry of Health.

Discussion

This manuscript outlines the process and methods used in the development of the first ever Physical Activity Guidelines for the Brazilian Population. These guidelines were developed through an iterative process which involved researchers, health professionals, and stakeholders to translate the best evidence available into meaningful and practical PA recommendations that take into account the cultural, economic, and geographical diversity of the Brazilian population. The Physical Activity Guidelines for the Brazilian Population provide recommendations concerning the amount (frequency, intensity, and duration) of PA for health across all groups and are consistent with other recently developed PA guidelines, especially the WHO Guidelines.¹⁷

Despite the underlying principles consistent with other international guidelines,^{17–19} the document presents some unique aspects that must be highlighted. First, we established the population as the primary audience (eg, older adults, adults, youth, parents, and other family members, people with disability, PE teachers, and caregivers), in order to facilitate their understanding of the Guidelines and promote autonomous motivation toward PA. Our main audience was contrary to other international guidelines or other documents previously published that target health professionals and policy makers as primary audiences,^{17–19} and, thus, we use appropriate language for this purpose, that is, the guidelines were written with informal Portuguese, avoiding technical medical terms and using more popular ones (eg, high blood pressure vs arterial hypertension). The primary audiences and users of the WHO 2020 guidelines on PA and sedentary behavior¹⁷ are policy makers in ministries of health, education, sport, transport, environment, social or family welfare, and related sectors, working in high-income as well as low- and middle-income countries, who formulate country-specific guidelines, and who develop national or subnational plans and programs to increase PA and reduce sedentary behaviors across the life course. The main intended audience of the UK Chief Medical Officers' Physical Activity Guideline¹⁸ is professionals, practitioners, and policy makers from a wide range of organizations concerned with formulating and implementing policies and programs that promote PA, sport, exercise, and active travel to achieve health gains. The primary audience for the Physical Activity Guidelines for Americans¹⁹ is policy makers and health professionals, although it may also be useful for interested members of the public.

The Physical Activity Guidelines for the Brazilian Population contains one specific chapter targeted to people with disabilities. According to the latest Brazilian demographic census, approximately 6% of the population (approximately 13 million) has some

kind of disability.²⁰ The Physical Activity Guidelines for the Brazilian Population calls attention to the higher prevalence of comorbidities in people with disabilities (eg, obesity, cardiovascular diseases, and osteoporosis) compared with the general population,²¹ due in part to the longer time this population spend in sedentary behavior, and less time in active behavior.²² With the Physical Activity Guidelines for the Brazilian Population, Brazil joins a small group of countries with recommendations for this public,^{17,23,24} which include strategies to face the barriers and identify facilitators to increase PA time and decrease sedentary behavior. It is worth noting that messages on how to overcome barriers to PA appear in virtually every chapter of the documents (eg, “Remember that you don't have to spend money to be physically active. Practice the activities you are able to do” or “Encourage the involvement of all students in classes, regardless of abilities, disabilities, and health conditions”—a special message for PE teachers).

A unique chapter dedicated to PE was included in the Physical Activity Guidelines for the Brazilian Population. This strategic chapter aims to stimulate increased attention to the importance of guaranteeing sufficient and quality PE classes. PE is a curricular subject in primary and secondary education in Brazil, with a mandatory minimum of 2 hours per week. Based on the best scientific evidence on the benefits of PE classes to different dimensions of students' health (eg, motor, cognitive, social, and environmental), as well as the best strategies that have been implemented in PE, the Physical Activity Guidelines for the Brazilian Population advocates an appropriate amount of at least 3 classes/week. The chapter also provides recommendations for the school community, including students, teachers, parents, and staff, to improve the quality of PE.

As well as volume of PA, the guidelines present supporting networks for PA. Institutional websites were consulted to identify supporting networks for PA, such as programs, services, and environments to promote PA. We also considered the support networks indicated by public involvement workshops. Thus, some programs offered by the Ministry of Sport (eg, Health at School) are emphasized as support networks for students, while PA programs from the Ministry of Health, or places recognized for offering Physical Activities (eg, SESC, SENAC) are given more emphasis in the chapter for older adults. These clues are essentials to help the population seek information about how and where to include PA in their routine.

In addition, a special document including advice for disseminating, implementing, monitoring, and maintenance/sustainability strategies was developed to help managers and health professionals to disseminate and implement the Physical Activity Guidelines for the Brazilian Population at the population level.²⁵ This document is available in Portuguese (including an audiobook version), Spanish,²⁶ English,²⁷ and Braille.

There are 2 major limitations in the process of development of these guidelines. First, the research team included mainly PE researchers and professionals. However, representatives from several population subgroups, including older adults, teachers, people with disabilities, managers, and professionals in health, sport, education, and other health professionals such as nurses, and physicians, participated in the public comment. Delegates from professional boards could be included to help identify and address the political and cultural need in the next guidelines edition. The second limitation concerns the nonuse of a standard evidence evaluation approach across all the working groups. Each working group defined its own approach to evidence evaluation according to

their needs, following principles or adapting from standardized approaches, like GRADE-ADOLPMENT.

With the launching of the Physical Activity Guidelines for the Brazilian Population, the Coordination for the Promotion of Physical Activity and Intersectoral Actions is working on a national campaign to promote PA for specific groups of the population to achieve our primary audience, and governmental agencies, across sectors (eg, health, sports, education, transport), the latter with the purpose of calling for and informing policy actions to increase much needed spaces and opportunities for PA for all. The Physical Activity Guidelines for the Brazilian Population is a landmark in the country's long PA history, but the work for a more active and healthier Brazil is not yet complete.

Acknowledgments

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