

COMMENTARY ON PROMOTION OF PHYSICAL ACTIVITY IN CHILDREN AND YOUTH

Russell Pate¹, Marsha Dowda¹, Ruth Saunders²

¹The University of South Carolina, Departments of Exercise Science;

²Health Promotion, Education, and Behavior, Columbia, South Carolina, United States; rpate@mailbox.sc.edu

<https://doi.org/10.29038/2220-7481-2024-01-47-52>

Abstracts

Topicality. Multiple studies have confirmed the significance of physical activity for the health of children and adolescents. However, in the majority of young individuals, their level of physical activity is insufficient. **The aim** of this article is to draw on the extensive experience of the Children's Physical Activity Research Group (CPARG) team to develop a set of recommendations on promoting physical activity in children and youth. **Methods of the research.** The CPARG has applied public health research methods to the study of physical activity, that could be used to promote children's physical activity at the population level. **Results of the work and the key conclusions.** A conceptual model for a set of recommendations regarding physical activity for children and youth has been developed, based on research and experience from CPARG, and divided into five categories. Two recommendations focus on persuading, prompting, and praising children and youth for engaging in physical activity at the individual and societal levels. Two recommendations emphasize the importance of providing places where children can engage in safe structured (programs), unstructured (play), and transportation physical activity, and one additional recommendation in the play, programs, participation & pleasure category stresses the importance of structuring these opportunities to facilitate fun, engagement, and enjoyment for children of all ages and abilities. Two recommendations address the need for enacting and enforcing practices and policies to promote physical activity at the local to national levels. Finally, three recommendations build toward the goal of engaging in behaviors at the individual to societal levels to convey physical activity as the normative pattern, communicating that physical activity is what we do.

Key words: public health, health promotion, societal norms, physical and social environment, public policy.

Рассел Пейт, Марша Довда, Рут Сандерс. Коментар щодо популяризації фізичної активності серед дітей та молоді. Актуальність. У численних дослідженнях підтверджено важливість фізичної активності для здоров'я дітей і молоді. Однак у більшості молодих людей рівень їхньої фізичної активності не є достатнім. **Мета цієї статті** – використання великого досвіду групи дослідників із вивчення фізичної активності дітей (CPARG) для розробки рекомендацій щодо заохочення до фізичної активності дітей та молоді. **Методи дослідження.** CPARG застосувала методи дослідження громадського здоров'я щодо фізичної активності, які можуть бути використані для сприяння фізичній активності дітей на популяційному рівні. **Результати та ключові висновки.** Розроблено концептуальну модель набору рекомендацій щодо фізичної активності дітей і молоді, заснованих на дослідженнях та досвіді CPARG і розподілених на п'ять категорій. Дві рекомендації зосереджені на переконанні, заохоченні та похвалі дітей і молоді за участь у фізичній активності на індивідуальному й суспільному рівнях. Дві рекомендації наголошують на важливості забезпечення місць, де діти можуть брати участь у безпечній структурованій (програми), неструктурованій (ігри) фізичній активності та транспортуванні, а одна додаткова рекомендація в категорії «ігри, програми, участь і задоволення» підкреслює важливість структурування цих можливостей для сприяння розвагам, залученню й задоволенню для дітей різного віку та здібностей. Дві рекомендації стосуються необхідності впровадження та забезпечення дотримання практик і політик, спрямованих на популяризацію фізичної активності на місцевому та національному рівнях. Нарешті, три рекомендації спрямовані на формування поведінки на індивідуальному й суспільному рівнях, щоб донести фізичну активність як нормативну модель, повідомляючи про те, що фізична активність – це те, що ми робимо.

Ключові слова: громадське здоров'я, зміцнення здоров'я, суспільні норми, фізичне та соціальне середовище, державна політика.

Introduction. An extensive body of research has demonstrated that physical activity provides important health benefits for children and youth (2018 Physical Activity Guidelines Advisory Committee, 2018) [1]. Accordingly, public health agencies, including the World Health Organization, have produced physical activity guidelines for young people across the age continuum from 3 to 18 years (WHO, 2020; US Department of Health and Human Services, 2018) [6; 7]. Unfortunately, surveillance studies conducted around the world, using objective measures of physical activity, have shown that most children and youth in

developed countries do not meet these guidelines (Guthold et al., 2020) [2]. This observation points to the need for effective intervention strategies that can be implemented widely, in order to increase physical activity to the recommended level in populations of children and youth.

The Children's Physical Activity Research Group (CPARG) at the University of South Carolina is an interdisciplinary team of investigators that has been studying physical activity behavior in children and youth for more than thirty years. CPARG has applied public health research methods to the study of physical activity, with the overall goal of identifying methods that could be used to promote children's physical activity at the population level. The group's work has included studies aimed at identifying salient influences on children's physical activity, across levels of influence that range from individual child characteristics to broad societal factors, including policies, regulations, and laws. In addition, the group has designed and tested the effectiveness of physical activity interventions implemented in school, preschool, and community settings. CPARG investigators have presented and disseminated this work in hundreds of research articles, many of which have been widely cited by other investigators and expert panels (Pate & Dowda, 2019; Pate et al., 2022; Pate & Saunders, 2023) [3; 4; 5].

The aim of this article is to draw on the extensive experience of the CPARG team to develop a set of recommendations on promoting physical activity in children and youth. The intent is to advance approaches to promoting physical activity that, if broadly implemented, would collectively have the effect of increasing children's physical activity at the population level. Some of the recommendations advanced in this article have been studied extensively and should be considered evidence-based strategies. Others have not been investigated extensively in formal studies but are consistent with the experiences of the CPARG team. Figure 1 provides a conceptual model for the set of recommendations presented in the article, organized into five components. Each model component is described in the Recommendations section below.



Fig. 1. Conceptual Model for Promoting Physical Activity in Children and Youth

Section 1: Persuade, Prompt and Praise Children to Promote Physical Activity.

This component of the conceptual model includes actions to cue, encourage, and reinforce physical activity in children and youth. These actions can take place at the individual child level, illustrated by the first recommendation below, and at the societal level, illustrated by the second recommendation.

Recommendation 1: Positively reinforce physical activity in very young children. The quality of children's early-life physical activity experiences exerts an important influence on their physical activity behaviors later in life. Young children are natural movers. They are genetically programmed to move, and by moving they learn about the world. In particular, they learn from and about the people who are closest to them – their parents, siblings, and caregivers. Our research group and others have shown that children's physical activity "tracks" over time – that is, children who are more active at a younger age are likely to be more active at an older age. This suggests that the factors that influence physical activity are established

when children are very young. We know, based on extensive research, that enjoyment of physical activity and physical activity self-efficacy are important determinants of physical activity during childhood and adolescence. While it would be difficult to conduct enjoyment and efficacy research in very young children, it is reasonable to hypothesize that children who receive positive reinforcement when they are physically active are likely to grow up with beliefs, feelings, and habits that will result in them being highly active as older children, adolescents, and adults. Hence, we recommend that parents support, encourage, and reinforce physical activity in their infants, toddlers, and preschool-age children.

Recommendation 2: Refine and expand public communication efforts regarding promotion of physical activity in children and youth. An important strategy for enhancing public health is to disseminate, through mass media channels, carefully designed and targeted messages that influence the public's behavior. To be effective, the messages must draw the attention of the intended audience and be seen as personally relevant and important to them. Further, the messages must provide clear guidance as to how the recipient could/should act or change his or her behavior. And, to be effective at the public health level, the messages must be disseminated widely and repeated frequently. We believe that well-designed mass media campaigns can be an important, perhaps essential, element in a comprehensive public health effort to increase physical activity in children. Such campaigns should be directed at parents, who are positioned to exert a powerful influence on their children's physical activity. The messages should be aimed at communicating: 1) the powerful impact that physical activity exerts on the health and fitness of children; and 2) specific strategies that parents can use to increase their children's physical activity. In our view, most parents understand that physical activity is important for children, but often they do not prioritize it. Further, parents may lack an understanding of the specific actions they can take that will most effectively increase their children's physical activity on a consistent, long-term basis. Public health agencies and youth service organizations can fill this gap by collaborating to develop and deliver well-designed media campaigns aimed at helping parents become better promoters and providers of physical activity.

Section 2: Provide Places for Children and Youth to be Physically Active.

This component of the model emphasizes the importance of providing safe environments for both unstructured (e.g., play) and structured (e.g., sports and organized programs) opportunities for physical activity in children and youth. It also addresses providing safe conditions that enable access and transportation to physical activity for all children.

Recommendation 3: Ensure that all children and youth, regardless of sex, ability-level, or race/ethnicity, have access to safe places for physical activity. Parents of young children may be hesitant to allow their children to play outside due to safety concerns. These concerns can include fear of injury, risk of encountering people selling drugs, and even fear of someone taking the child. In these cases, parents or other designated adult(s) can take turns supervising children's outside play. We have observed that adults in physically active communities and neighborhoods ensure that vacant properties, green spaces, and streets are kept clean of trash, and that they work together to help reduce violence and crime. In communities where heavy traffic, stray dogs, and poorly maintained park equipment create concerns, individuals and organizations can take action to reduce those risks, such as ensuring the installation of crosswalks so that pedestrian traffic can cross busy streets. Neighborhood features that help children be active include dead-end roads, cul-de-sacs, and streets with low-speed limits. Neighbors working together can emulate these features by blocking off a street to allow children to play safely for an hour or two. Finally, it is important that parents, coaches, and school personnel provide well-maintained safety equipment, such as bicycle helmets, sports equipment, and playground equipment, and ensure that is properly used and maintained.

Recommendation 4: Ensure equity in the built environment to support physical activity in children and youth. We know that some children who do not meet the physical activity guidelines are inactive because of where they live. Not all children have access to places to be active, and sidewalks, community parks, green spaces, recreational facilities, and physical activity programs are often less available in lower socioeconomic communities. Our experience shows that racial/ethnic differences exist between neighborhoods, resulting in physical activity disparities. Disparities may also exist in the quality of school physical education in lower socioeconomic areas. Furthermore, children with disabilities often are less active than children without disabilities due in part to limited access to physical activity programs. Better education for staff about the physical activity needs of disabled children and about how to use effective strategies to promote physical activity in disabled children would improve programs. We believe it is important for churches, schools, neighborhoods, and communities to work together to improve the availability of programs and activities and to offer them to children regardless of race/ethnicity, socioeconomic status, or disability,

so that all children have places to be active. Parents, schools, and communities can provide transportation, small grants for program fees, sports clothing, and sports equipment to help ensure that all children are included.

Section 3: Prioritize Play, Programs, Participation and Pleasure in Physical Activity Programs.

This component of the model recognizes the importance of providing fun and enjoyable options for unstructured and structured physical activity opportunities for children and adolescents of all ages and abilities.

Recommendation 5: Youth-serving organizations should prioritize programs that support physical activity in children and youth. We believe that all youth-serving organizations should prioritize providing physical activity programs, even if their mission does not focus on physical activity. Physical activity-focused organizations include recreation centers and physical activity and sport programs; organizations that are not physical activity-focused include academic after-school programs, faith-based children and youth programs, and community service programs. Our experience shows that it is important for all organizations to establish written policies and informal practices and procedures for providing physical activity opportunities for children and adolescents of all ages and abilities, led by qualified adult staff. These physical activity opportunities can range from brief bouts of physical activity throughout the day to longer programs in which youth engage in 30 or more minutes of moderate-to-vigorous physical activity. Our research and experience indicate that structured physical activity programs are particularly effective. These programs offer indoor and/or outdoor organized games, sports, and activities, with formalized procedures/rules and adult leaders or coaches. We also know that children and adolescents are more active when adult staff lead physical activity in an age-appropriate manner that offers them choices, creates a sense of belonging, facilitates fun/enjoyment, builds skills and confidence for physical activity, and creates social support and positive norms for physical activity participation. Organizations should also provide unstructured physical activity opportunities by making equipment, facilities, playgrounds, and/or green/open spaces available for free play under adult supervision. These elements work together to develop youth motivation to be physically active beyond the specific setting and for life.

Section 4: Enact Practices and Policies that Promote Physical Activity in Children and Youth.

This component includes actions to enact and enforce policies and practices that support physical activity at all levels, from national to local. These actions apply to all youth-serving organizations, youth programs, and schools and school classrooms.

Recommendation 6: Expand development of and advocacy for policies aimed at promoting physical activity in children and youth. Policies are formal, established rules, regulations, or laws that are intended to mandate actions based on current knowledge of best practices. In the context of public health, policies are often developed and recommended by professional societies or non-profit health organizations, adopted by governments, and implemented by agencies and organizations that serve the public. For example, professional organizations, such as the International Council for Sports Science and Physical Education, have developed policies related to providing physical education in schools that have been implemented by education authorities in many countries around the world. While policies for school physical education programs are common, similar policies are less common for other settings in which children and youth can and should engage in physical activity, including community recreation programs, sports organizations, health care providers, faith-based organizations, and transportation authorities. To support development of physical activity policies for those settings, policy research is needed to identify effective policies, and professional organizations must expand their efforts to advocate for appropriate regulatory agencies to adopt those policies.

Recommendation 7: Design and fully implement accountability systems that support compliance with professional standards for youth physical activity programs. Professional physical activity program settings, such as physical education programs in schools, are typically guided by standards or regulations that are established by regulatory bodies. For example, physical education programs in US schools are guided by federal government policies, as well as national professional organization recommendations. Holding individual teachers, physical education programs, and schools accountable for carrying out standards and regulations encourages policy implementation. It also enables programs to monitor and adjust physical activity program activities to meet the needs and interests of children, and to document program effectiveness, which is important for sustaining these activities and programs. Furthermore, a lack of accountability conveys a low priority for providing physical activity programming, which results in reduced resource availability for promoting physical activity and increased challenges for implementing physical activity opportunities. When administrators and decision-makers at the state, school district, and school

levels prioritize physical activity, accountability systems are more likely to be put into place. This is important for achieving the desired health and academic benefits of physical activity for students. We strongly recommend having accountability in professional physical activity program settings as a necessary part of implementing policies that support physical activity.

Section 5: Promote Physical Activity as the Normative Pattern.

The final component of the conceptual model espouses engaging in behaviors at the individual, family, community, organizational, and societal levels that convey positive social norms for physical activity. The goal is to communicate that physical activity is *what we do*.

Recommendation 7: Schools, ranging from preschools to universities, should normalize high levels of physical activity for students. Our research group has conducted much of its work in school settings, and we have contributed to the extensive body of scientific evidence which shows that factors in the school environment exert important influences on students' physical activity. These factors range from policies that dictate exposure to physical activity opportunities, such as outdoor recess and physical education, to teacher-determined practices, such as classroom exercise breaks and physically active teaching/learning activities. While it is clear that school-based factors influence students' physical activity, it is also clear that schools vary greatly in the extent to which they implement practices that promote student physical activity. We have found that this level of variability is striking. Some schools strongly support and create conditions that support student physical activity, but others create barriers to physical activity. This disparity is important for multiple reasons. First, students at all levels spend a sizeable portion of their time in the school environment and, aside from the home environment, the school setting likely exerts the greatest cumulative influence on students' physical activity. Second, though educators and parents once believed that physical activity during the school day detracted from student learning, substantial evidence now shows that physical activity enhances academic achievement. Third, and perhaps most importantly, when the social and physical environment of the school reinforces certain student behaviors, those behaviors are likely to be seen by students as societal norms and carried forward into life after formal schooling. Our group believes strongly that normalizing a high level of physical activity while students are in the school setting is a key process through which schools can promote students' lifelong fitness and health.

Recommendation 9: Disincentivize sedentary behavior in children and youth. Children can meet the physical activity guideline of 60 minutes of moderate-to-vigorous physical activity each day but also spend many hours sitting. Studies have shown that higher amounts of sedentary behavior, such as sitting, reclining, or lying down, have detrimental effects on fitness and cardiometabolic health, adiposity, social behavior, and sleep. We support the WHO recommendation that children and adolescents should limit the amount of time they spend sedentary, and especially the amount screen time, each day (WHO recommendations). We believe that parents and caregivers of children under age five should limit their TV viewing/screen time to one hour or less per day. Our experience shows that sedentary behaviors track from childhood into adolescence, which suggests that young people should form healthy habits early in life. Sedentary behavior decreases when children are encouraged to be active in safe spaces and have access to active toys and sports equipment, and when parents are active with their young children and provide transportation for their children and adolescents to active places such as parks. We support physically active breaks during academic classes at school; some schools have even introduced standing desks to reduce sitting time. At home we strongly suggest that parents limit screen time, which includes watching television, computer games and phone use, not allow televisions in children's bedrooms, and not allow watching television while eating.

Recommendation 10: Establish a physically active lifestyle as a societal norm, particularly for children and their parents. Norms, which are unwritten rules that guide behavior in specific situations, are conveyed unconsciously by important people around us, organizations to which we belong, and the actions of other people. We believe that physically active lifestyles will become the norm in society when families, peers, and schools and other organizations convey explicitly and implicitly that being physically active, regardless of age, sex, race/ethnicity, or ability, is *what we do*. This message can be reinforced by seeing children and adults being physically active at home, in organizational and community settings, and in the media. We know that if physical activity is the priority, it is taken care of *first* because it is fundamental to mental, physical, academic, family, and community health. We suggest beginning with small changes in norms within a single family or community organization; over time this can positively influence other families and the whole community. For example, after a family meal or holiday gathering, all family members can go for a walk (with babies in a stroller) and/or play active games, rather than engaging with an electronic screen.

We also suggest that adults make positive comments about children walking through the neighborhood and playing games and pick-up sports and encourage their children to do the same. It is important for adults to talk with neighbors, schools, and faith-based organizations to find safe options for child and family physical activity opportunities. We also believe that, in addition to these small “bottom up” suggestions, it is important to create “top down” messages at the organization, community, and society levels by featuring physical activity prominently and positively in mass and social media.

Summary. These 10 recommendations for promoting physical activity, if implemented broadly and collectively, would increase children’s physical activity at the population level. These recommendations, based on CPARG’s research and experience, are organized into five categories. Two recommendations focus on persuading, prompting, and praising children and youth for engaging in physical activity at the individual and societal levels. Two recommendations emphasize the importance of providing places where children can engage in safe structured (programs), unstructured (play), and transportation physical activity, and one additional recommendation in the play, programs, participation & pleasure category stresses the importance of structuring these opportunities to facilitate fun, engagement, and enjoyment for children of all ages and abilities. Two recommendations address the need for enacting and enforcing practices and policies to promote physical activity at the local to national levels. Finally, three recommendations build toward the goal of engaging in behaviors at the individual to societal levels to convey physical activity as the normative pattern, communicating that *physical activity is what we do*.

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Стаття надійшла до редакції 14.02.2024 р.