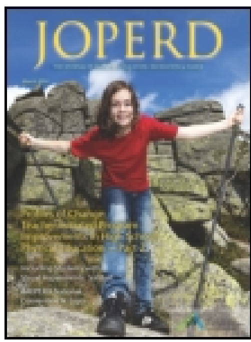

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The Physical Activity Movement

COMES OF AGE

THE DEVELOPMENT AND CONTENT OF THE *2008 PHYSICAL ACTIVITY GUIDELINES FOR AMERICANS*

DAVID M. BUCHNER

During the second half of the 20th century physical inactivity was recognized to be a major public-health problem. A variety of organizations issued recommendations for the public that specified the types and amounts of physical activity required for fitness and/or health benefits (U.S. Department of Health and Human Services [USDHHS], 1996). In 2008 the first-ever national physical activity guidelines were issued by the federal government, entitled the *2008 Physical Activity Guidelines for Americans* (USDHHS, 2008). The purposes of this article are to (1) review the evolution of guidelines in the United States, (2) describe the process for developing the 2008 guidelines, and (3) comment on the key recommendations of the 2008 guidelines. In this article the terms "key guidelines" and "recommendations" are used interchangeably.

Background on the Physical Activity Guidelines

Initially, national recommendations focused on the fitness benefits of structured exercise (USDHHS, 1996). Then recommendations began to adopt a public-health framework where exercise was only one option for obtaining the health benefits of physical activity. Recommendations stated that the health benefits of activity could be obtained from moderate-to-vigorous intensity aerobic activities of daily life, such as walking to school, gardening, biking, and climbing stairs at work (Pate et al., 1995). Many organizations decided to issue physical activity guidelines, resulting in at least 32 different documents with physical activity recommendations issued between 1965 and 1996 (USDHHS, 1996).

However, there were several concerns about this uncoordinated approach to issuing guidelines. Guidelines were not comprehensive and were not issued separately for youth (Sallis & Patrick, 1994), adults (Pate et al., 1995), and older adults (Nelson et al., 2007). At least one major study used recommendations from the United Kingdom Expert Consensus Group as a standard for assessing the activity levels of U.S. children and youth (Pate et al., 2002). As illustrated by the 1995 Centers for Disease Control and Prevention (CDC) and American College of Sports Medicine (ACSM) recommendation (Pate et al., 1995), the idea that more physical activity provides more health benefits was not clearly communicated. Guidelines typically emphasized aerobic activity, yet evidence was accumulating for the health benefits of muscle-strengthening activities in all ages and of balance training for older adults (USDHHS, 2008). There was also a need for evidence-based recommendations on the prevention of injuries, as flexibility activities such as stretching were commonly recommended despite a lack of evidence that stretching actually prevented injuries (Thacker, Gilchrist, Stroup, & Kimsey, 2004).

The decision to include guidance on physical activity in the U.S. Dietary Guidelines for Americans also raised concerns. The guidance was not based on an original evidence review and placed a disproportionate emphasis on body weight. The key recommendations of the *2005 Dietary Guidelines for Americans* did not state the minimum amount of vigorous-intensity activity required to meet the guidelines (USDHHS & U.S. Department of Agriculture [USDA], 2005). In addition, the dietary guidelines did not integrate their basic activity recommendation for adults, "Engage in at least 30 minutes of moderate-intensity activity… on most days of the week" with their recommendation for preventing unhealthy weight gain, "Engage in approximately 60 minutes of moderate-to

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vigorous-intensity activity on most days of the week" (USDHHS & USDA, 2005, p. 21). It became clear that a different and more comprehensive recommendation for physical activity guidelines was needed.

Development of the *2008 Physical Activity Guidelines for Americans*

The 2008 guidelines were issued by the USDHHS. The guidelines were issued without a mandate for regular review and updates from either Congress or the Executive Branch, unlike the dietary guidelines, which are mandated for release (after review) every five years. The development of the 2008 guidelines involved four major stages — each of which produced one or more documents. The first stage was the preparation of an Institute of Medicine (2007) report, titled *Adequacy of Evidence for Physical Activity Guideline Development*. This step assured USDHHS that there was sufficient evidence to justify proceeding with the development of comprehensive guidelines.

The second stage included a large, systematic review of recent scientific evidence. The review was conducted by the Physical Activity Guidelines Advisory Committee (PAGAC) — a federal advisory committee composed of 13 experts in the health benefits of physical activity. To support the PAGAC review, the CDC performed a search of the scientific literature on physical activity and health that had been published since the evidence review done for the 1996 Surgeon General's report *Physical Activity and Health*. The development of the report involved open PAGAC meetings and opportunities for public comment. The PAGAC produced a 650+ page document called the *Physical Activity Guidelines Advisory Committee Report* (PAGAC, 2008).

A key guideline for youth is "children and adolescents should include bone-strengthening physical activity on at least 3 days of the week."

The third stage was the creation of the actual guidelines — the *2008 Physical Activity Guidelines for Americans* (USDHHS, 2008). The main audience for this document is health professionals and practitioners. A committee of USDHHS staff with expertise in physical activity and health drafted the guidelines using the information in the PAGAC report. A draft of the guidelines underwent internal review by USDHHS. The document contains key guidelines for the following groups: children and adolescents, adults, older adults, women during pregnancy and the postpartum period, adults with disabilities, and people with chronic medical conditions. There are also key guidelines for injury prevention. Chapter text explains the key guidelines. For example, a key guideline for youth is "children and adolescents should include bone-strengthening physical activity on at least 3 days of the week." The text goes on to explain, "Running, jumping rope, basketball, tennis, and hopscotch are all examples of bone-strengthening activities" (USDHHS, 2008, p. 16).

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The fourth stage involved the preparation of materials and a plan for communicating the guidelines to the public and to health professionals. The main document created in this stage for the public was a booklet called "Be Active Your Way — A Guide for Adults," available in both English and Spanish. The booklet summarizes information from the 2008 guidelines and provides advice on adopting an active lifestyle. Other resources included a

Table 1.
Key Guidelines for Children, Adolescents, Adults, and Older Adults

Key Guidelines for Children and Adolescents

- Children and adolescents should participate in 60 minutes (1 hour) or more of physical activity daily.
- Aerobic: Most of the 60 or more minutes a day should be either moderate- or vigorous-intensity aerobic physical activity, and should include vigorous-intensity physical activity at least 3 days a week.
- Muscle-strengthening: As part of their 60 or more minutes of daily physical activity, children and adolescents should include muscle-strengthening physical activity on at least 3 days of the week.
- Bone-strengthening: As part of their 60 or more minutes of daily physical activity, children and adolescents should include bone-strengthening physical activity on at least 3 days of the week.
- It is important to encourage young people to participate in physical activities that are appropriate for their age, that are enjoyable, and that offer variety.

Key Guidelines for Adults

- All adults should avoid inactivity. Some physical activity is better than none, and adults who participate in any amount of physical activity gain some health benefits.
- For substantial health benefits, adults should participate in at least 150 minutes (2 hours and 30 minutes) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity. Aerobic activity should be performed in episodes of at least 10 minutes, and preferably, it should be spread throughout the week.
- For additional and more extensive health benefits, adults should increase their aerobic physical activity to 300 minutes (5 hours) a week of moderate-intensity, or 150 minutes a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity activity. Additional health benefits are gained by engaging in physical activity beyond this amount.
- Adults should also do muscle-strengthening activities that are moderate or high intensity and involve all major muscle groups on 2 or more days a week, as these activities provide additional health benefits.

Key Guidelines for Older Adults

The Key Guidelines for Adults also apply to older adults. In addition, the following guidelines are just for older adults:

- When older adults cannot participate in 150 minutes of moderate-intensity aerobic activity a week because of chronic conditions, they should be as physically active as their abilities and conditions allow.
- Older adults should do exercises that maintain or improve balance if they are at risk of falling.
- Older adults should determine their level of effort for physical activity relative to their level of fitness.
- Older adults with chronic conditions should understand whether and how their conditions affect their ability to participate in regular physical activity safely.

fact sheet for professionals, a fact sheet for adults, and answers to frequently asked questions. These and other materials are available online at http://www.health.gov/paguidelines/.

Content of the 2008 Guidelines

The key guidelines for children, adolescents, adults, and older adults are summarized in Table 1. The following are some of the important features of the guidelines.

1. The key guidelines for adults (and older adults) communicate that there is a dose–response relationship between volume of physical activity and health benefits. The dose required for substantial benefits is specified, but it points out that some physical activity is better than nothing and that higher doses provide more health benefits.

2. The complicated recommendations of the *2005 Dietary Guidelines* related to a healthy body weight were integrated using the concept of dose-response. To obtain a healthy weight, first meet the 150-minute aerobic guideline. Then increase physical activity and decrease food intake, until a healthy weight is obtained.

3. Key guidelines deal with more than aerobic and muscle-strengthening activities. Key guidelines for children emphasize the importance of bone-strengthening activity, while a key guideline for older adults emphasizes activities that improve balance and reduce the risk of falls.

4. Key guidelines for children and adolescents state that children should be active every day. The moderate-to-vigorous intensity physical activity that children naturally participate in counts toward meeting the guidelines.

5. There is no key guideline for warm-up activities or flexibility (stretching) activities.

Current Status of Updates for the 2008 Guidelines

It is hoped that the USDHHS will update the 2008 guidelines in 2018. However, as of May 2014, there was no law or regulation requiring regular updates. Notably, limitations in the evidence affected several aspects of the 2008 guidelines. For example, there

Currently, it is not totally clear why as few as 10% of American adults meet the aerobic guidelines when assessed by an objective method (accelerometer), but about 60% meet the guidelines by self-report.

was insufficient evidence that short bouts of aerobic activity (<10 minutes) had health benefits, so only 10+ minute bouts were recommended. Also, there was insufficient evidence as to the importance of activity on most days of the week for adults, so adults can choose how to spread activity out during the week. Finally, there was insufficient evidence as to the importance of limiting sedentary behavior, such as prolonged bouts of sitting, so there are no guidelines dealing with sedentary behavior habits. This situation highlights the importance of regularly updating the physical activity guidelines based on new evidence as it is established and reported.

Using the Guidelines to Assess the Burden of Disease Due to Inactivity

The burden of disease due to inactivity is large. A recent analysis estimated that the worldwide burden of disease due to inactivity is similar to the burden of tobacco use (Lee et al., 2012). The 2008 guidelines provide a basis for assessing the preventable burden of disease in the United States by providing standards for measuring the physical activity levels of Americans. For example, one can assess the percent of adults who are meeting the key aerobic guideline of at least 150 minutes per week of moderate-intensity activity (or an equivalent amount of vigorous-intensity activity). However, understanding how best to assess physical activity in population-based studies remains an important and active area of research. Currently, it is not totally clear why as few as 10% of American adults meet the aerobic guidelines when assessed by an objective method (accelerometer), but about 60% meet the guidelines by self-report (Tucker, Welk, & Beyler, 2011).

Summary

The USDHHS *2008 Physical Activity Guidelines for Americans* represent a major milestone in public-health efforts to address inactivity. These comprehensive federal physical activity guidelines affirm the strong scientific evidence for the health benefits of regular physical activity. The 2008 guidelines provide benchmarks for assessing the health burden of inactivity and inform the design of public-health initiatives to promote physical activity in Americans.

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