

## **1. PHYSICAL ACTIVITY AND FITNESS**

<b>Number</b>	<b>Objective</b>
1	Leisure time physical activity
2	Sustained physical activity
3	Vigorous physical activity
4	Muscular strength and endurance
5	Flexibility
6	Vigorous physical activity, grades 9-12
7	Moderate physical activity, grades 9-12
8	Daily school physical education
9	Physical education requirement in schools
10	School physical education quality
11	Inclusion of physical activity in health education
12	Access to school physical activity facilities
13	Worksite physical activity and fitness
14	Clinician counseling about physical activity



## **Physical Activity and Fitness**

### **Goal**

Improve the health, fitness, and quality of life of all Americans through the adoption and maintenance of regular, daily physical activity.

### **Terminology**

(A listing of all acronyms used in this publication appears on page 27 of the Introduction.)

Different definitions exist for many terms used in this section. For the purposes of establishing and tracking Healthy People 2010 objectives, the definitions below will be used.

**Aerobic** refers to conditions or processes that occur in the presence of, or requiring, oxygen, and **aerobic capacity** is the total amount of work that can be performed by the aerobic energy system.<sup>1</sup>

**Cardiorespiratory endurance (cardiorespiratory fitness)**—A health-related component of physical fitness that relates to the ability of the circulatory and respiratory systems to supply oxygen during sustained physical activity.<sup>2</sup>

**Energy balance** refers to the relationship between energy intake (input of food) and energy output (energy expenditure).<sup>3</sup>

**Energy expenditure** is the energy cost to the body of physical activity, usually measured in kilocalories.<sup>4</sup>

**Exercise** (exercise training) is defined as planned, structured, and repetitive bodily movement done to improve or maintain one or more components of physical fitness.<sup>5</sup>

**Flexibility** describes a health-related component of physical fitness that relates to the range of motion available at a joint.<sup>6</sup>

**Functional living** is the ability to successfully and safely perform activities related to a daily routine with sufficient energy, strength/endurance, flexibility, and coordination.<sup>7</sup>

**Physical activity** is defined as bodily movement that is produced by the contraction of skeletal muscle and that substantially increases energy expenditure.<sup>8</sup>

**Physical fitness** is a set of attributes that people have or achieve that relates to the ability to perform physical activity.<sup>9</sup> The health-related components of physical fitness include body composition, cardiovascular fitness, flexibility, and muscular strength and endurance.<sup>10</sup>

**Sedentary** describes a person who is relatively inactive and has a lifestyle characterized by a lot of sitting.<sup>11</sup>

1 **Overview**

2  
3 The adoption and maintenance of a physically active lifestyle is essential for a healthy life. It has been  
4 known for decades that physical activity prevents heart disease, but more recent data suggest that, on  
5 average, physically active people outlive those who are inactive<sup>12-16</sup> and that regular physical activity  
6 helps to maintain the functional independence of older adults and enhance the quality of life for people of  
7 all ages.<sup>17-20</sup> The potential role of physical activity in preventing coronary heart disease is of particular  
8 importance, given that this disease is the leading cause of death and disability in the United States.  
9 Physically inactive people are almost twice as likely to develop coronary heart disease as people who  
10 engage in regular physical activity.<sup>21</sup> This risk is almost as high as several well-known risk factors such  
11 as cigarette smoking, high blood pressure, and high blood cholesterol. Physical inactivity, though, is  
12 more prevalent than any one of these other risk factors. Finally, persons with other risk factors for  
13 coronary heart disease, such as obesity and hypertension, may particularly benefit from physical activity.

14  
15 Unfortunately, few Americans engage in regular physical activity despite the potential benefits. Less than  
16 10 percent of the U.S. adult population reports regular, vigorous physical activity that involves large  
17 muscle groups in dynamic movement for 20 minutes or longer, 3 or more days per week.<sup>22</sup> Only about  
18 one in four adults reports physical activity for 5 or more days per week for 30 minutes or longer, and  
19 another one in four adults do not participate in any regular physical activity.<sup>23</sup>

20  
21 The 1990s brought a historic new perspective to exercise, fitness, and physical activity by shifting the  
22 focus from intensive aerobic exercise to a broader range of health-enhancing physical activity. Research  
23 over the past decade has made it clear that virtually all Americans will benefit from regular sustained  
24 physical activity. Commissioned by HHS Secretary Donna E. Shalala, the first ever *Surgeon General's*  
25 *Report on Physical Activity and Health*,<sup>24</sup> released in July 1996, concluded that regular sustained  
26 physical activity can substantially reduce the risk of developing or dying from heart disease, diabetes,  
27 colon cancer, and high blood pressure.<sup>25</sup> This hallmark report should provide impetus for Americans to  
28 establish an active and fit lifestyle just as other health-related behaviors were encouraged through  
29 previous Surgeon General's Reports.<sup>26,27</sup>

30  
31 Although vigorous physical activity is necessary for improved cardiorespiratory fitness, increasing  
32 evidence suggests that physical activity that is less intense than vigorous can have significant health  
33 benefits, including a decreased risk of coronary heart disease. For those who are inactive, even small  
34 increases in physical activity are associated with measurable health benefits. In addition, physical  
35 activity is more readily adopted and maintained than vigorous physical activity.<sup>28</sup> As research continues  
36 to elucidate the links between physical activity and selected health outcomes, individuals will be able to  
37 select physical activity patterns optimally suited to individual health risks and physiologic benefits as  
38 well as to individual preferences.

39  
40 The Healthy People 2010 objectives for the physical activity and fitness focus area derive from both the  
41 1990 physical fitness and exercise objectives<sup>29</sup> and the Healthy People 2000 physical activity and fitness  
42 objectives.<sup>30</sup> The content of the current objectives has been guided to a large extent by the concept of  
43 health-related fitness and a growing appreciation of the benefits of less intensive physical activity in  
44 addition to established benefits of vigorous exercise. It is important for those who do not engage in any  
45 physical activity during their leisure time to take the first step toward developing a pattern of regular  
46 physical activity. Public education efforts need to address the specific barriers that inhibit the adoption  
47 and maintenance of physical activity by different population groups. Older adults, for example, need  
48 information about safe walking routes, appropriate foot care and footwear for those with foot problems,  
49 appropriate levels of activity for those with coronary heart disease and other chronic conditions, and the  
50 availability of group activities in the community. It is also important for each person to recognize that

1 starting out slowly with an activity that one enjoys and gradually increasing the frequency and duration  
2 of one's physical activity is central to the behavioral change process. Also, along with the public  
3 education efforts, public programs in a variety of settings (recreation centers, worksites, health care  
4 settings, and schools) need to be developed, evaluated, and shared as potential models to emulate.

5  
6 Disparities exist among population groups in levels of physical activity. According to the 1996 Surgeon  
7 General's Report on Physical Activity and Health, the percentage of the population reporting no leisure-  
8 time physical activity is higher among women than men, among African Americans and Hispanics than  
9 whites, among older than younger adults, and among the less affluent than the more affluent.

10 Furthermore, participation in all types of physical activity declines strikingly as age or grade in school  
11 increases. In general, persons with lower levels of education and income are least active in their leisure  
12 time. Adults in north central and western States tend to be more active than those in the northeastern and  
13 southern States. Finally, people with disabilities and certain health conditions are less likely to report  
14 engaging in either sustained or vigorous physical activity than are people without disabilities. Health  
15 promotion efforts should identify and understand barriers to physical activity faced by particular  
16 population groups and develop interventions that address these barriers.

17  
18 The following year 2010 objectives are proposed to ensure that the dimensions of physical activity and  
19 fitness that encompass key physiologic and physical mechanisms become part of regular behavioral  
20 patterns.

### 21 22 ***Physical Activity Participation***

23  
24 Objectives 1-3 address the dimension of physical activity associated with energy expenditure, which  
25 enhances weight loss or control and produces physiologic changes that favorably affect blood pressure,  
26 platelet aggregation and fibrinolysis, and glucose tolerance, thereby helping to prevent or manage  
27 coronary heart disease and diabetes mellitus.<sup>31</sup> Objective 1 encourages any type or amount of physical  
28 activity in leisure time. There are important health benefits associated with doing any type of activity  
29 compared to a sedentary lifestyle. Objective 2 recognizes the numerous benefits of regular, sustained  
30 physical activity and encourages this activity for at least 30 minutes a day and at least 5 days per week.  
31 Finally, Objective 3 encourages vigorous activity that increases the ability of the body to do physical  
32 work and has an additional beneficial influence on the prevention of cardiovascular disease.

### 33 34 ***Muscular Strength/Endurance and Flexibility***

35  
36 Objectives 4-5 encourage a variety of physical activities that are important because they may protect  
37 against disability, enhance functional independence, and encourage regular physical activity  
38 participation. This section is particularly important for older people, because living a long life involves  
39 keeping functionally independent and able to perform activities of daily living to ensure a good quality of  
40 life.

### 41 42 ***Physical Activity in Young People***

43  
44 Objectives 6-7 highlight the importance of both vigorous and moderate physical activity among youth.  
45 Because children spend most of their time in school, the type and amount of physical activity encouraged  
46 in schools are important components of Objectives 8-11.

### 47 48 ***Facilities/Programs***

49  
50 The major barriers most people face when trying to increase physical activity are time as well as  
51 availability and access to convenient facilities. Objectives 12 and 13 highlight these issues by addressing

1 worksite programs and access of school facilities to the community before and after school hours and  
2 during the weekends and summer vacations.

### 4 ***Counseling***

6 Most studies suggest that physical activity counseling in a primary care setting is successful in increasing  
7 physical activity, at least in the short term. Objective 14 focuses on the practice of counseling for  
8 physical activity by primary care physicians and allied health care professionals, particularly during visits  
9 for routine care.

## 11 **Progress Toward Year 2000 Objectives**

13 Of the 13 physical activity and fitness objectives included in Healthy People 2000, one, the objective for  
14 worksite fitness programs, has surpassed the target (1.10); four show progress toward the year 2000  
15 targets (coronary heart disease (1.1), light to moderate physical activity (1.3), vigorous physical activity  
16 (1.4), and muscular strength/endurance and flexibility (1.6)); while five are moving away from the targets  
17 (overweight (1.2), weight loss practices (1.7), daily school physical education (1.8), school physical  
18 education quality (1.9), and clinician counseling for physical activity (1.12)). Objectives on sedentary  
19 lifestyle (1.5) and functional living for older adults (1.13) depicted noninstitutionalized population only  
20 and show no change. Data to depict the progress made are not yet available for community fitness  
21 facilities (1.11) or for ages 6 to 17 years in three objectives (1.3, 1.4, 1.5). Specific highlights of national  
22 progress toward the objectives are presented below.

- 24 • Coronary heart disease deaths (objective 1.1) continued to decline, moving from 135 per 100,000 in  
25 1985 to 108 per 100,000 in 1995 (20 percent decline), and is very near the 2000 target of 104 per  
26 100,000. Coronary heart disease among African Americans also declined from 168 per 100,000 in  
27 1985 to 147 per 100,000 in 1995. In spite of this 12.5 percent decline, it is unlikely that the target of  
28 115 deaths per 100,000 will be reached by the year 2000.
- 30 • The prevalence of overweight (objective 1.2) increased substantially among all groups between  
31 1976-80 and 1994. For adults aged 20-74 the increase was 35 percent. Similar increases were seen  
32 in the other demographic and age breakdowns.
- 34 • In 1995 about 23 percent of adults were active in light to moderate physical activity for 30 minutes at  
35 least 5 days per week (objective 1.3) compared to 22 percent in 1985.
- 37 • Adults reporting regular vigorous physical activity (objective 1.4) was 12 percent in 1985 compared  
38 to 16 percent in 1995, while 64 percent of students in grades 9-12 participated in vigorous physical  
39 activity in both 1991 and 1995.
- 41 • Adults participating in a sedentary lifestyle (objective 1.5) changed little from a prevalence of 24  
42 percent in 1985 to a prevalence of 23 percent in 1995.
- 44 • Muscular strength, endurance, and flexibility (objective 1.6) has surpassed the 2000 target of 40  
45 percent for students in grades 9 to 12 for participating 3 or more times/week in both stretching and  
46 strengthening exercises (53 and 50 percent, respectively). However, among adults, the prevalence of  
47 stretching (one time/week) was only 27 percent in 1991 and strengthening exercises (three  
48 times/week) only 16 percent in 1991.

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- 1 • Sound weight loss practices among overweight people (objective 1.7) continued to decline  
2 throughout the 1990's in all subgroups except overweight Hispanic women (the lowest subgroup in  
3 1991).  
4
- 5 • Daily school physical education (objective 1.8) moved away from the 2000 target of 50 percent with  
6 42 percent of students in grades 9-12 enrolled in daily physical education in 1991 and only 25  
7 percent enrolled in 1995.  
8
- 9 • Only about one-third of students in grades 9-12 who were enrolled in physical education classes  
10 reported being active during class for at least 21 minutes 3-5 times per week in 1995, compared to 37  
11 percent in 1991 (objective 1.9).  
12
- 13 • Worksite fitness programs (objective 1.10) increased substantially both among small employers (50-  
14 99 employees) as well as large employers (750 or more employees), exceeding the 2000 target in  
15 every category.  
16
- 17 • We are unable to track the progress toward access to community fitness facilities (Objective 1.11)  
18 due to lack of a data system.  
19
- 20 • Except for internists, clinical counseling about physical activity (objective 1.12) for adults is not  
21 making progress toward the 2000 target of 50 percent.  
22
- 23 • The number of people with self-care problems (objective 1.13) is lower among adults aged 85 and  
24 older (223 per 1,000 in 1984-85 compared to 204 per 1,000 in 1991), but higher among African  
25 Americans aged 65 and older (104 per 1,000 compared to 112 per 1,000).  
26

1 **Draft 2010 Objectives**

2  
3 *Physical Activity Participation*

- 4  
5 **1. (Former 1.5) Increase to 85 percent the proportion of people aged 18 and older who engage in**  
6 **any leisure time physical activity. (Baseline: 77 percent in 1995)**  
7

<b>Select Populations</b>	<b>1995 (unless noted)</b>
African American	72%
American Indian/Alaska Native	77%
Asian/Pacific Islander	79%
Hispanic	69%
White	77%
Men	79%
Women	75%
Below census poverty threshold	71%
At or above census poverty threshold	79%
With limitation of activity	71%
No limitation of activity	78%
People with arthritis symptoms	65% (1991)
People without arthritis symptoms	72% (1991)

8  
9 **Target Setting Method:** Retain year 2000 target.

10  
11 **Data Source:** National Health Interview Survey (NHIS), CDC, NCHS.  
12

- 1 **2. (Former 1.3) Increase to at least 30 percent the proportion of people aged 18 and older who**  
2 **engage regularly, preferably daily, in sustained physical activity for at least 30 minutes per**  
3 **day.** (Baseline: 23 percent were active for at least 30 minutes, 5 or more times per week in 1995)  
4

<b>Select Populations</b>	<b>1995 (unless noted)</b>
African American	21%
American Indian/Alaska Native	27%
Asian/Pacific Islander	24%
Hispanic	22%
White	23%
Men	25%
Women	21%
Below census poverty threshold	23%
At or above census poverty threshold	23%
With limitation of activity	17%
No limitation of activity	24%
People with arthritis symptoms	21% (1991)
People without arthritis symptoms	22% (1991)

5  
6 **Note:** Sustained physical activity requires muscular movements and is at least equivalent to brisk  
7 walking. In addition to walking, activities may also include swimming, cycling, dancing, gardening  
8 and yardwork, and various domestic and occupational activities.  
9

10 **Target Setting Method:** Retain year 2000 target.

11  
12 **Data Source:** National Health Interview Survey (NHIS), CDC, NCHS.  
13

- 1 **3. (Former 1.4) Increase to at least 25 percent the proportion of people aged 18 and older who**  
2 **engage in vigorous physical activity that promotes the development and maintenance of**  
3 **cardiorespiratory fitness 3 or more days per week for 20 or more minutes per occasion.**  
4 (Baseline: 16 percent for people aged 18 and older in 1995)  
5

Select Populations	1995 (unless noted)
African American	13%
American Indian/Alaska Native	12%
Asian/Pacific Islander	17%
Hispanic	14%
White	16%
Men	17%
Women	15%
Below census poverty threshold	13%
At or above census poverty threshold	16%
People with arthritis symptoms	11% (1991)
People without arthritis symptoms	16% (1991)

6  
7 **Note:** Vigorous physical activities are rhythmic, repetitive physical activities that use large muscle  
8 groups at 60 percent or more of maximum heart rate for age. An exercise heart rate of 60 percent of  
9 maximum heart rate for age is about 50 percent of maximal cardiorespiratory capacity and is  
10 sufficient for cardiorespiratory conditioning. Maximum heart rate equals roughly 220 beats per  
11 minute minus age.  
12

13 **Target Setting Method:** Better than the best.  
14

15 **Data Source:** National Health Interview Survey (NHIS), CDC, NCHS.  
16

17 The adoption and maintenance of regular physical activity is an important component of any health  
18 regime. The three objectives presented here provide multiple opportunities to improve and maintain  
19 health. Engaging in any amount of physical activity is preferable to none. The highest risk of death and  
20 disability is found among those who do no regular physical activity.<sup>32</sup> The point is to encourage physical  
21 activity as part of a daily routine. Therefore, while sustained physical activity for at least 30 minutes is  
22 preferable, intermittent physical activity also increases caloric expenditure and may be important for  
23 those who cannot fit 30 minutes of sustained activity into their schedules or who are sedentary. For most  
24 people, the greatest opportunity for physical activity is during leisure, because few occupations today  
25 provide sufficient vigorous or sustained physical activity to produce health benefits. People engaging in  
26 physical activity less often than daily also receive some health benefits, but if the frequency falls below  
27 three days per week, they may be less likely to maintain a regular pattern of activity over time.  
28

29 Engaging in sustained physical activity for at least 30 minutes per day will help to ensure sufficient  
30 calories are expended to confer health benefits. A minimum level of intensity for sustained physical  
31 activity is set by the example of a brisk walk for 30 minutes per day that would, for most people, result in  
32 an energy expenditure of about 1,050 calories per week. If caloric intake remains constant, this would  
33 translate into a weight loss of roughly one-third pound per week. Epidemiologic studies suggest that a  
34 weekly expenditure of 1,000 calories could have significant individual and public health benefit for  
35 coronary heart disease prevention and all-cause mortality, especially for those who are originally  
36 sedentary.<sup>33</sup> This level of activity is feasible for most people. The relative intensity of any activity will  
37 vary by age. Those willing and able can also perform vigorous physical activity for the purpose of  
38 improving and maintaining cardiorespiratory fitness. However, sustained physical activities confer

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1 considerable health benefit, are more likely to be adopted and maintained than vigorous activities, and  
2 are less likely to result in injury.

3  
4 Vigorous physical activity helps achieve and maintain cardiorespiratory fitness and also provides  
5 additional protection against coronary heart disease, the leading cause of death and disability in the  
6 United States.<sup>34</sup> Examples of vigorous physical activities include jogging/running, lap swimming,  
7 cycling, aerobic dancing, skating, rowing, jumping rope, cross-country skiing, hiking/backpacking,  
8 racquet sports, and competitive group sports (soccer, basketball, volleyball).

9  
10 Most Americans engage in less physical activity than is proposed by these objectives. In 1995, only 23  
11 percent of people aged 18 and older engaged in at least 30 minutes of activity 5 or more times per week,  
12 and only 15 percent report that they are this active 7 or more times per week. Only 71 percent of men  
13 and women aged 18 and older reported any leisure-time physical activity. In general, men are more  
14 active than women; 18 through 29 year olds are more active than other age groups; and activity is  
15 positively associated with increasing education and income levels. Adults residing in the West tend to  
16 report the highest prevalence of activity compared to adults residing elsewhere.

17  
18 Regular physical activity is especially important for those with joint/bone problems and has been shown  
19 to improve muscle function, cardiovascular function, and physical performance.<sup>35</sup> However, persons with  
20 arthritis, who compose 20 percent of the adult population, are less active than those without arthritis (65  
21 percent report any leisure-time physical activity compared to 72 percent of those without arthritis).<sup>36</sup>  
22 Osteoporosis is another chronic condition, affecting more than 25 million people in the United States.<sup>36a</sup>  
23 Many respond positively to regular physical activity, particularly weight-bearing activities such as  
24 walking. Increased bone mineral density has been positively associated with aerobic fitness, body  
25 composition, and muscular strength.<sup>37</sup> Physical activity may also protect against low back pain and  
26 breast cancer, but the evidence to date is not yet conclusive.<sup>38-40</sup>

27  
28 Increasing public awareness about the many benefits of physical activity will be necessary to attain these  
29 objectives. For example, Americans need to recognize the importance of daily physical activity to weight  
30 management, know that walking is a form of exercise most people can do, and understand that one needs  
31 to remain active throughout life. It is also important for people to realize that starting out slowly and  
32 gradually increasing the frequency and duration of their physical activity over time is the key to  
33 successful behavior change. In the case of walking, the message becomes “if you are not used to daily  
34 walking, then walk slowly and take short, frequent walks, gradually increasing distance and speed.”  
35 Educational messages should be consistent, based on science, and appropriately tailored to reach specific  
36 populations such as older adults, people with disabilities, and racial and ethnic minorities.

1 **Muscular Strength/Endurance and Flexibility**

- 2  
3 **4. (Former 1.6) Increase to at least 40 percent the proportion of people aged 18 and older who**  
4 **regularly perform physical activities that enhance and maintain muscular strength and**  
5 **endurance.** (Baseline: 16 percent did strengthening exercises in the past 2 weeks in 1995)  
6

Select Populations	1995
Men	21%
Women	11%
People aged 18-29	27%
People aged 30-44	17%
People aged 45-64	11%
People aged 65-74	6%
People aged 75 and older	4%

7  
8 **Target Setting Method:** Retain year 2000 target.  
9

10 **Data Source:** National Health Interview Survey (NHIS), CDC, NCHS.  
11

- 12 **5. (Former 1.6) Increase to at least 40 percent the proportion of people aged 18 and older who**  
13 **perform physical activities that enhance and maintain flexibility.** (Baseline: 31 percent did  
14 stretching exercises in the past 2 weeks in 1995)  
15

Select Populations	1995
Men	30%
Women	31%
People aged 18-64	32%
People aged 65 and older	21%

16  
17 **Target Setting Method:** Retain year 2000 target.  
18

19 **Data Source:** National Health Interview Survey (NHIS), CDC, NCHS.  
20

21 Previous objectives in this chapter have focused on physical activities designed to improve  
22 cardiorespiratory fitness and prolong life. The objectives in this section recognize that all adults could  
23 benefit from physical activities designed to ensure functional independence throughout life. The specific  
24 physical fitness components that provide continued physical function as individuals age include muscle  
25 strength and endurance and flexibility. Examples of these activities include weight training, resistance  
26 activities (using elastic bands or dumb bells), and stretching exercises (such as yoga or T'ai Chi Chuan).  
27

28 One of the changing demographic characteristics that drives this section is the growth of the population  
29 between 65 and 84 years and especially those over age 85. Treatment of many chronic conditions has  
30 resulted in more years of life, but many of these extra years are spent with disabling conditions that  
31 prevent independent living and reduce the quality of life. Strengthening activities, while important for all  
32 age groups, are particularly important for older adults. It is well documented that muscle strength  
33 declines with age and that there is a demonstrated relationship between muscle strength and physical  
34 function.<sup>41</sup> Age-related loss of strength may be attenuated by strengthening exercises, thus maintaining a  
35 threshold level of strength that is necessary to perform basic weight-bearing activities such as  
36 walking.<sup>42,43</sup> Strength training has also been shown to preserve bone density in postmenopausal  
37 women.<sup>44</sup>  
38

1 Physical activities that improve muscular strength and endurance and flexibility also improve the ability  
2 to perform tasks of daily living and may improve balance, thus preventing falls.<sup>45,46</sup> Activities of daily  
3 living have been identified as a scale to measure dependencies in basic self-care and other functions  
4 important for independent living and to avoid institutionalization. The performance of routine daily  
5 activities is particularly important to maintaining functional independence and social integration in older  
6 adults.<sup>47</sup>

7  
8 Although flexibility may appear to be a minor component of physical fitness, the consequence of rigid  
9 joints affects all aspects of life, including walking, stooping, sitting, avoiding falls, or driving a vehicle.  
10 Lack of joint flexibility may adversely affect quality of life and will lead to eventual disability.<sup>48</sup>  
11 Activities such as T'ai Chi Chuan routines that consist of slow and graceful movement with low impact  
12 have great promise for maintaining flexibility and can be appropriate for adults of any age.<sup>49</sup>

13  
14 Increasing the public's awareness of all of these potential benefits of strengthening and flexibility  
15 activities and developing and making available and accessible quality programs may help to encourage  
16 the pursuit of activities that will promote muscular strength and endurance and flexibility.

17  
18 ***Physical Activity in Young People***

19  
20 **6. Increase to at least 85 percent the proportion of young people in grades 9 through 12 who**  
21 **engage in vigorous physical activity that promotes the development and maintenance of**  
22 **cardiorespiratory fitness 3 or more days per week for 20 or more minutes per occasion.**

23 (Baseline: 64 percent in 1995 for students in grades 9-12; 80 percent in 1988-94 for young people  
24 ages 8-16)

Select Populations	1995
Boys	
9 <sup>th</sup> grade students	80%
10 <sup>th</sup> grade students	79%
11 <sup>th</sup> grade students	72%
12 <sup>th</sup> grade students	67%
Girls	
9 <sup>th</sup> grade students	62%
10 <sup>th</sup> grade students	59%
11 <sup>th</sup> grade students	47%
12 <sup>th</sup> grade students	42%

25  
26 **Note:** Examples of vigorous physical activities include basketball, jogging, swimming laps, and  
27 tennis.

28  
29 **Target Setting Method:** Better than the best.

30  
31 **Data Sources:** For grades 9-12, Youth Risk Behavior Survey (YRBS), CDC, NCCDPHP; for ages  
32 8-16, National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.

- 1 **7. Increase to at least 30 percent the proportion of young people in grades 9 through 12 who**  
2 **engage in moderate physical activity for at least 30 minutes on 5 or more of the previous 7**  
3 **days.** (Baseline: 21 percent in 1995)  
4

Select Populations	1995
Boys	
9 <sup>th</sup> grade students	25%
10 <sup>th</sup> grade students	24%
11 <sup>th</sup> grade students	21%
12 <sup>th</sup> grade students	17%
Girls	
9 <sup>th</sup> grade students	27%
10 <sup>th</sup> grade students	23%
11 <sup>th</sup> grade students	20%
12 <sup>th</sup> grade students	14%

5  
6 **Note:** Examples of moderate physical activities include walking or bicycling.  
7

8 **Target Setting Method:** 9 percent improvement.  
9

10 **Data Source:** Youth Risk Behavior Survey (YRBS), CDC, NCCDPHP.  
11

- 12 **8. (Former 1.8) Increase to at least 50 percent the proportion of young people in grades 9**  
13 **through 12 who participate in daily school physical education.** (Baseline: 25 percent in 1995)  
14

Select Populations	1995
9 <sup>th</sup> grade students	41%
10 <sup>th</sup> grade students	34%
11 <sup>th</sup> grade students	15%
12 <sup>th</sup> grade students	13%

15  
16 **Target Setting Method:** Retain year 2000 target.  
17

18 **Data Source:** Youth Risk Behavior Survey (YRBS), CDC, NCCDPHP.  
19

- 20 **9. (Developmental) Increase the proportion of the Nation's public and private elementary,**  
21 **middle/junior high, and senior high schools that require daily physical education for all**  
22 **students.**  
23

24 **Potential Data Source:** School Health Policies and Programs Study (SHPPS), CDC, NCCDPHP.  
25

1 **10. (Former 1.9) Increase to at least 50 percent the proportion of young people in grades 9-12 who**  
2 **spend at least 50 percent of school physical education class time being physically active,**  
3 **preferably engaged in lifetime physical activities, at least 3 times per week.** (Baseline: 33  
4 percent of students in grades 9-12 were active in physical education class more than 20 minutes, 3-5  
5 times per week in 1995)  
6

7 **Note:** Lifetime activities are activities that may be readily carried into adulthood because they  
8 generally need only one or two people. Examples include swimming, bicycling, jogging, and racquet  
9 sports. Also counted as lifetime activities are vigorous social activities such as dancing.  
10 Competitive group sports and activities typically played only by young children such as group games  
11 are excluded.  
12

13 **Target Setting Method:** Retain year 2000 target.  
14

15 **Data Source:** Youth Risk Behavior Survey (YRBS), CDC, NCCDPHP.  
16

17 **11. (Developmental) Increase the proportion of the Nation's public and private elementary,**  
18 **middle/junior high, and senior high schools that, in addition to physical education courses,**  
19 **teach about physical activity in required health education courses.**  
20

21 **Potential Data Source:** School Health Policies and Programs Study (SHPPS), CDC, NCCDPHP.  
22

23 The health benefits of vigorous physical activity are not limited to adults. Physical activity among youth  
24 is important both because of health benefits (cardiorespiratory function, lower blood pressure, and weight  
25 management), and because the adoption of a physically active lifestyle may continue into adulthood.  
26 Even among children 3-4 years old, those who were less active tended to remain less active than most of  
27 their peers after 3 years.<sup>50</sup> These findings highlight the need for parents, educators, and health care  
28 providers to become positive role models and actively involved in the promotion of physical activity and  
29 fitness in children and youth.  
30

31 Data demonstrate that major decreases in vigorous physical activity occur during grades 9-12 and this  
32 decrease is more profound for girls than for boys. This is true whether the measure is engaging in  
33 vigorous physical activity in general or team sports. The President's Council on Physical Fitness and  
34 Sports in its report "Physical Activity and Sport in the Lives of Girls"<sup>51</sup> concluded that physical activity  
35 has an increasingly important role in the lives of girls, both because of its physical health and emotional  
36 benefits. Adolescents' interests and participation in physical activity differ by sex. Therefore, strategies  
37 to increase the amount of physical activity for boys and girls will need to be different and will need to  
38 begin before the disparities in levels of physical activity manifest themselves. Compared to boys, girls  
39 are less likely to participate in team sports but more likely to participate in aerobics or dance. Often they  
40 perceive different benefits from physical activity; boys view it as a competition and girls as a means of  
41 weight management. These factors must be considered in developing programs to address the needs of  
42 girls. Since boys are more likely than girls to have higher self-esteem as well as physical strength,  
43 programs addressing the needs of girls should provide instruction and experiences that increase their  
44 confidence, opportunities to participate in activities, and social environments that support involvement in  
45 a range of physical activities.<sup>52</sup>  
46

47 Many children are less physically active than recommended, and physical activity declines during  
48 adolescence.<sup>53,54</sup> Schools are an efficient vehicle for providing physical activity and fitness instruction  
49 because they reach most children and adolescents. Participation in school physical education assures a  
50 minimum amount of physical activity by children and provides a forum to teach physical activity  
51 strategies and activities that can be continued into adulthood. Recent findings suggest that the quantity,

1 and in particular the quality, of school physical education programs have a significant positive effect on  
2 the health-related fitness of children and youth by increasing their participation in moderate to vigorous  
3 activities.<sup>55,56</sup>

4  
5 To achieve the benefits of school-based physical education equitably for all of America's children, daily  
6 adaptive physical education programs should be available for children with special needs. School  
7 physical education requirements are also recommended for students in preschool and postsecondary  
8 programs.

9  
10 It is particularly important to encourage the implementation of high quality physical education programs  
11 that will enhance the fitness of children and youth and encourage life-long physical activity. Providing  
12 students with a substantial amount of time for participation in physical activity is only one of many  
13 objectives for quality physical education classes, but it is perhaps the one most relevant for direct health  
14 benefits; more time spent being active in physical education class might help more adolescents meet  
15 consensus recommendations on physical activity.<sup>57</sup> Studies have shown that spending 50 percent of class  
16 time on activity is an ambitious, but feasible target.<sup>58,59</sup> Being active for at least half of physical  
17 education class time on at least half of school days would provide a substantial portion of the physical  
18 activity time recommended for adolescents.<sup>60</sup>

19  
20 Many physical educators stress the importance of dedicating a major portion of the physical education  
21 curriculum to lifetime physical activities. Developing student knowledge, attitudes, cognitive skills, and  
22 physical skills related to lifetime activities could play an important role in helping students maintain  
23 appropriate levels of physical activity as they pass through adulthood.<sup>61</sup> A 1984 national study found  
24 that physical education courses in 5th through 12th grade devoted 48 percent of their curriculum time to  
25 lifetime fitness activities.<sup>62</sup>

26  
27 Physical education is the primary source of physical activity and fitness instruction. However, health  
28 education and other courses can highlight the important role of physical activity as a component of a  
29 healthy lifestyle. A well-designed health education curriculum can help students develop the knowledge,  
30 attitudes, behavioral skills, and confidence needed to adopt and maintain physically active lifestyles.<sup>63</sup>  
31 To maximize classroom time, instruction on physical activity can also be integrated into the lesson plans  
32 of other school subjects, such as mathematics, biology, and language arts.

33  
34 Programs that have included classroom instruction in physical activity have been effective in enhancing  
35 students' physical activity-related knowledge,<sup>64</sup> attitudes,<sup>65</sup> behavior,<sup>66,67</sup> and physical fitness.<sup>68,69</sup>

36  
37 Increasing physical activity among this important segment of our population will require public  
38 awareness messages targeted to parents. Both the 1997-99 PCPFS public service advertising campaigns  
39 (Get Off It! and Get Up! Get Out!) and the CDC campaign (It's Everywhere You Go!) encourage parents  
40 to exercise with their children (e.g., daily family walks), to advocate for daily school physical education,  
41 and to involve their children in the physical activity programs of community organizations.

#### 42 *Facilities/Programs*

43  
44  
45 **12. (Developmental) Increase the proportion of the Nation's public and private elementary,**  
46 **middle/junior high, and senior high schools that provide access to their physical activity spaces**  
47 **and facilities for young people and adults outside of normal school hours (i.e., before and after**  
48 **the school day, on weekends, and during summer and other vacations).**

49  
50 **Potential Data Source:** School Health Policies and Programs Study (SHPPS), CDC, NCCDPHP.

1 **13. (Former 1.10) Increase to 85 percent the proportion of worksites offering employer-sponsored**  
2 **physical activity and fitness programs.**  
3

<b>Worksite Size</b>	<b>1992</b>
<50 employees	Not available
50-99 employees	33%
100-249 employees	47%
250-749 employees	66%
750 employees	83%

4  
5 **Target Setting Method:** 2 percent better than the best.  
6

7 **Data Source:** National Survey of Worksite Health Promotion Activities, ODPHP.  
8

9 Participation in regular physical activity depends in part on the availability and proximity of community  
10 facilities and conducive environments. Studies of adult participation in physical activity have found that,  
11 as facility distance from residence increases, use generally decreases.<sup>80</sup> People are unlikely to use  
12 community resources located more than a few miles away by car or more than a few minutes away by  
13 bike or on foot.  
14

15 One of the major barriers to youth participation in sports is lack of enough sports facilities.<sup>81</sup> Increased  
16 access to community physical activity facilities would, therefore, help facilitate increases in youth  
17 physical activity. The availability of school facilities for physical activity programs may also be  
18 beneficial for crime and violence prevention or other social programs,<sup>82</sup> because most juvenile crime is  
19 committed between the hours of 3 in the afternoon and 8 at night.  
20

21 School buildings and grounds are potential resources for physical activity participation in practically  
22 every community of the Nation. Making school spaces and facilities available before and after the  
23 schoolday, on weekends, and during summer and other vacations is one of the recommendations of the  
24 Centers for Disease Control and Prevention's (CDC) Guidelines for School and Community Programs to  
25 Promote Lifelong Physical Activity Among Young People.<sup>83</sup> In many communities, however, school  
26 facilities are not made available to the community outside of school hours. A recent survey conducted  
27 for the International Life Sciences Institute (ILSI) by Louis Harris and Associates found that 65 percent  
28 of students in grades 4-12 said they were allowed to use their school's facilities when school is not in  
29 session.<sup>84</sup> In the 1994 SHPPS, 71 percent of middle/junior and senior high schools reported that their  
30 physical education facilities were available beyond regular school hours to all students, and 78 percent  
31 said they were available to the general community.  
32

33 Schools should work with community coalitions and community-based physical activity programs to take  
34 maximum advantage of school facilities for the benefit of young people and the community as a whole.  
35 The needs of all community members, including senior citizens and those with disabilities, should be  
36 considered.  
37

38 Worksite physical activity and fitness programs provide a mechanism for reaching large numbers of  
39 adults. In 1992, a national survey of worksites found that activities to promote physical activity and  
40 fitness were present at 42 percent of worksites with 50 or more employees.<sup>85</sup> Examples of such programs  
41 include onsite exercise facilities and exercise classes, reimbursable membership fees in health clubs and  
42 Y's, informal walking clubs, formal fitness challenges and campaigns, and flexible health benefits that  
43 include exercise-related activities. Employer-sponsored programs can be offered on site or in  
44 conjunction with community organizations. Smaller worksites may prefer to align themselves with a  
45 community recreation facility in order to meet this objective.

1 Worksite fitness programs have been shown to have at least short-term effectiveness in increasing the  
2 physical activity and fitness of program participants.<sup>86</sup> Evidence that worksite programs are cost-  
3 effective is also growing. Such programs may even reduce employer costs for insurance premiums,  
4 disability benefits, and medical expenses.<sup>87</sup> Additional benefits for employers include increased  
5 productivity, reduced absenteeism, reduced employee turnover, improved morale, enhanced company  
6 image, and enhanced recruitment. Benefits to employers and the community can be further increased by  
7 including family members and retirees in worksite programs.

8  
9 As purchasers of group health and life insurance plans, employers can also design employee benefit  
10 packages that include coverage for fitness club membership fees and community-based fitness classes or  
11 reduced insurance premiums and rebates for employees who participate regularly in worksite fitness  
12 programs or who can document regular physical activity.

13  
14 Virtually all life insurance companies offer lower premiums to nonsmokers today. In light of the  
15 scientific evidence that physically active individuals are more likely to live longer than their inactive  
16 counterparts and because of the established association between inactivity and coronary heart disease,  
17 life and health insurers should be encouraged to consider lower insurance premiums for people who  
18 participate regularly in physical activity.

19  
20 ***Counseling***

21  
22 **14. (Former 1.12) Increase to at least 50 percent the proportion of primary and allied health care**  
23 **providers who routinely assess and counsel their patients regarding their physical activity**  
24 **practices.** (Baseline: primary care providers counseled about physical activity for 22 percent of the  
25 visits for patients 18 or older who had a routine or general checkup in 1995)  
26

Select Populations	1995
Men aged 18 and older	30%
Women aged 18 and older	19%
Children aged 6-11	32%
Youth aged 12-17	31%
People aged 18-34	21%
People aged 35-49	19%
People aged 50-64	26%
People aged 65 and older	22%

27  
28 **Target Setting Method:** Retain year 2000 target.

29  
30 **Data Source:** National Ambulatory Medical Care Survey (NAMCS), CDC, NCHS.

31  
32 Physicians and other allied health care providers are viewed as respected sources of information about  
33 preventive as well as curative medicine. Randomized clinical trials of physical activity counseling  
34 support the concept that providers can have an effect on patients' physical activity levels.<sup>88,89</sup> Because of  
35 the potential benefit, the U.S. Preventive Services Task Force recommended that clinicians counsel all  
36 patients to engage in a program of regular physical activity tailored to their health status and personal  
37 lifestyle.<sup>90</sup> While most patients seen by primary care providers could benefit from encouragement and  
38 advice on physical activity, assessment and counseling is not routine practice for most primary and allied  
39 health care providers. In 1995, among the visits for routine medical or gynecologic examinations for  
40 adults 20 years or older, physicians reported counseling only 19 percent about physical activity.<sup>91</sup>  
41 Surveys suggest that many physicians are uncomfortable about their ability to properly counsel and  
42 advise patients about physical activity. A standardized set of questions, prescriptions, and counseling

1 protocols would facilitate attainment of this objective as would training in physical activity assessment  
2 and counseling through professional preparation curricula and continuing education programs and  
3 compensation for counseling. The PCPFS Rx: Exercise,<sup>92</sup> the CDC PACE,<sup>93</sup> and the MCHB Bright  
4 Futures Physical Activity Guidelines offer suggestions that could assist in attaining this goal by the year  
5 2010.  
6

## 7 **Related Objectives From Other Focus Areas**

### 8 **Nutrition**

- 9 1 Healthy weight
- 10 2 Obesity in adults
- 11 3 Overweight and obesity in children/adolescents
- 12 14 Nutrition education, elementary schools
- 13 15 Nutrition education, middle/junior high schools
- 14 16 Nutrition education, senior high schools
- 15 17 Worksite nutrition education and weight management programs
- 16 19 Nutrition counseling

### 17 **Educational and Community-Based Programs**

- 18 2 School health education
- 19 5 Worksite health promotion programs
- 20 6 Participation in employer-sponsored health promotion activities
- 21 10 Community health promotion initiatives
- 22 11 Culturally appropriate community health promotion programs
- 23 12 Elderly participation in community health promotion

### 24 **Injury/Violence Prevention**

- 25 22 Deaths from falls
- 26 23 Hip fractures
- 27 24 Drowning deaths
- 28 25 Bicycle helmet laws
- 29 26 Bicycle helmet use, high school students
- 30 27 Bicycle helmet use
- 31 31 Head, face, eye, and mouth protection in school sports

### 32 **Occupational Safety and Health**

- 33 14 Worksite stress reduction programs

### 34 **Access to Quality Health Services**

- 35 A.3 Routine screening about lifestyle risk factors
- 36 A.5 Training to address health disparities

### 37 **Health Communication**

- 38 1 Public access to health information
- 39 2 Centers for excellence
- 40 4 Satisfaction with health information
- 41 5 Health literacy programs

### 42 **Arthritis, Osteoporosis, and Chronic Back Conditions**

- 43 1 Mean days without severe pain (arthritis)
- 44 2 Activity limitations (arthritis)

- 1 3 Personal care limitations (arthritis)
- 2 9 Arthritis education among patients
- 3 10 Provision of arthritis education
- 4 11 Dietary practices and physical activity (arthritis)
- 5 12 Prevalence (osteoporosis)
- 6 13 Counseling about prevention, 13 and over (osteoporosis)
- 7 14 Counseling about prevention, women 50 and over (osteoporosis)
- 8 15 Activity limitations (chronic back conditions)

9

10 **Cancer**

- 11 1 Cancer deaths
- 12 3 Breast cancer deaths
- 13 4 Cervical cancer deaths
- 14 5 Colorectal cancer deaths
- 15 8 Sun exposure
- 16 9 Provider counseling about preventive measures

17

18 **Diabetes**

- 19 1 Type 2 diabetes
- 20 4 Diabetes-related deaths
- 21 6 Cardiovascular deaths

22

23 **Disability and Secondary Conditions**

- 24 4 Healthy days among adults with activity limitations who need assistance
- 25 9 Inclusion of children with disabilities in regular education programs

26

27 **Heart Disease and Stroke**

- 28 1 Coronary heart disease deaths
- 29 6 High blood pressure
- 30 8 Action to help control blood pressure
- 31 10 Serum cholesterol levels
- 32 11 Blood cholesterol levels

33

34 **Mental Health and Mental Disorders**

- 35 4 Mental disorders among children and adolescents

36

37 **Respiratory Diseases**

- 38 1 Deaths (asthma)
- 39 2 Hospitalizations (asthma)
- 40 4 Activity limitations (asthma)
- 41 5 School or work days lost (asthma)
- 42 6 Patient education (asthma)
- 43 7 Continuing medical education (asthma)

44

45 **Substance Abuse**

- 46 10 Steroid use
- 47 13 Alcohol-related drownings
- 48 18 Services for school-aged children
- 49 21 Community partnerships and coalitions

50

51

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