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Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People

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American Academy of Pediatrics
American Alliance for Health, Physical Education, Recreation, and Dance
American Association for Active Lifestyles and Fitness
American Association for Health Education
American Association for Leisure and Recreation
American Association of School Administrators
American College of Sports Medicine
American Federation of Teachers
American Heart Association
American Medical Association
American Public Health Association
American School Health Association
Council of Chief State School Officers
Council for Exceptional Children
Indian Health Service (U.S. Department of Health and Human Services [USDHHS])
National Association of Elementary School Principals
National Association for Girls and Women in Sport
National Association of Governor's Councils on Physical Fitness and Sports
National Association of Physical Education in Higher Education
National Association of Secondary School Principals
National Association for Sport and Physical Education
National Association of State Boards of Education
National Congress of Parents and Teachers
National Dance Association
National Education Association
National Handicapped Sport and Recreation Association
National Heart, Lung, and Blood Institute (USDHHS)
National Institute for Child Health and Human Development (USDHHS)
National Institute of Mental Health (USDHHS)
National Recreation and Parks Association
National School Boards Association
National School Health Education Coalition
President's Council on Physical Fitness and Sports
Society of State Directors of Health, Physical Education, and Recreation
U.S. Department of Education
U.S. Office of Disease Prevention and Health Promotion (USDHHS)
Young Men's Christian Association of the United States of America
Young Women's Christian Association

Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People

Summary

Regular physical activity is linked to enhanced health and to reduced risk for all-cause mortality and the development of many chronic diseases in adults. However, many U.S. adults are either sedentary or less physically active than recommended. Children and adolescents are more physically active than adults, but participation in physical activity declines in adolescence. School and community programs have the potential to help children and adolescents establish lifelong, healthy physical activity patterns.

This report summarizes recommendations for encouraging physical activity among young people so that they will continue to engage in physical activity in adulthood and obtain the benefits of physical activity throughout life. These guidelines were developed by CDC in collaboration with experts from universities and from national, federal, and voluntary agencies and organizations. They are based on an in-depth review of research, theory, and current practice in physical education, exercise science, health education, and public health.

The guidelines include recommendations about 10 aspects of school and community programs to promote lifelong physical activity among young people: policies that promote enjoyable, lifelong physical activity; physical and social environments that encourage and enable physical activity; physical education curricula and instruction; health education curricula and instruction; extracurricular physical activity programs that meet the needs and interests of students; involvement of parents and guardians in physical activity instruction and programs for young people; personnel training; health services for children and adolescents; developmentally appropriate community sports and recreation programs that are attractive to young people; and regular evaluation of physical activity instruction, programs, and facilities.

INTRODUCTION

In recent years the public health benefits of reducing sedentary lifestyles and promoting physical activity have become increasingly apparent (*1–8*). The Surgeon General's report on physical activity and health emphasizes that regular participation in moderate physical activity is an essential component of a healthy lifestyle (*1*). Although regular physical activity enhances health and reduces the risk for all-cause mortality (*9–18*) and the development of many chronic diseases among adults (*10,12–14,17,19–45*), many adults remain sedentary (*46*). Although young people are more active than adults are (*1*), many young people do not engage in recommended levels of physical activity (*47,48*). In addition, physical activity declines precipitously with age among adolescents (*47,48*). Comprehensive school health programs have the potential to slow this age-related decline in physical activity and help students establish lifelong, healthy physical activity patterns (*49,50*).

This report is one in a series of CDC documents that provide guidelines for school health programs to promote healthy behavior among children and adolescents (*51–53*). These physical activity guidelines address school instructional programs, school psychosocial and physical environments, and various services schools provide. Because the physical activity of children and adolescents is affected by many factors beyond the school setting, these guidelines also address parental involvement, community health services, and community sports and recreation programs for young people.

The guidelines are written for professionals who design and deliver physical activity programs for young people. At the local level, teachers and other school personnel, community sports and recreation program personnel, health service providers, community leaders, and parents may use the guidelines to promote enjoyable, lifelong physical activity among children and adolescents. Policymakers and local, state, and national health and education agencies and organizations may use them to develop initiatives that promote physical activity among young people. In addition, personnel at postsecondary institutions may use these guidelines to train professionals in education, public health, sports and recreation, and medicine.

CDC developed these guidelines by reviewing published research; considering the recommendations in national policy documents; convening experts in physical activity; and consulting with national, federal, and voluntary agencies and organizations. When possible, these guidelines are based on research; however, many are based on behavioral theory and standards for exemplary practice in physical education, exercise science, health education, and public health. More research is needed on the relationship between physical activity and health among young people, the relationship between physical activity during childhood and adolescence and that during adulthood, the determinants of physical activity among children and adolescents, and the effectiveness of school and community programs promoting physical activity among young people.

PHYSICAL ACTIVITY, EXERCISE, AND PHYSICAL FITNESS

Distinctions between physical activity, exercise, and physical fitness are useful in understanding health research. Physical activity is "any bodily movement produced by skeletal muscles that results in energy expenditure.... Exercise is a subset of physical activity that is planned, structured, and repetitive" and is done to improve or maintain physical fitness. Physical fitness is "a set of attributes that are either health- or skill-related." Health-related fitness includes cardiorespiratory endurance, muscular strength and endurance, flexibility, and body composition; skill-related fitness includes balance, agility, power, reaction time, speed, and coordination (*54*).

Specific forms of physical activity and exercise in which young people might participate include walking, bicycling, playing actively (i.e., unstructured physical activity), participating in organized sports, dancing, doing active household chores, and working at a job that has physical demands. The places or settings in which young people can engage in physical activity and exercise include the home, school, playgrounds, public parks and recreation centers, private clubs and sports facilities, bicycling and jogging trails, summer camps, dance centers, and religious facilities.

HEALTH BENEFITS OF PHYSICAL ACTIVITY AND PHYSICAL FITNESS

Regular moderate physical activity results in many health benefits for adults. For example, it improves cardiorespiratory endurance, flexibility, and muscular strength and endurance (*1,55*). Physical activity may also reduce obesity (*56–60*), alleviate depression and anxiety (*61–65*), and build bone mass density (*66–71*). Physically active and physically fit adults are less likely than sedentary adults to develop the chronic diseases that cause most of the morbidity and mortality in the United States: cardiovascular disease (*10,12–14,17,19–29,72–77*), hypertension (*30–32,78*), non-insulin-dependent diabetes mellitus (*33–37*), and cancer of the colon (*38–45*). All-cause mortality rates are lower among physically active than sedentary people (*9–18*).

Although more research is needed on the association between physical activity and health among young people (*79–81*), evidence shows that physical activity results in some health benefits for children and adolescents. For example, regular physical activity improves aerobic endurance (*82–86*) and muscular strength (*82,86*). Among healthy young people, physical activity and physical fitness may favorably affect risk factors for cardiovascular disease (e.g., body mass index, blood lipid profiles, and resting blood pressure) (*87–100*). Regular physical activity among children and adolescents with chronic disease risk factors is important (*101–105*): it decreases blood pressure in adolescents with borderline hypertension (*81*), increases physical fitness in obese children (*106,107*), and decreases the degree of overweight among obese children (*108–111*). Physical activity among adolescents is consistently related to higher levels of self-esteem and self-concept and lower levels of anxiety and stress (*112*). Although the relationship between physical activity during youth and the development of osteoporosis later in life is unclear (*113*), evidence exists that weight-bearing exercise increases bone mass density among young people (*114,115*).

RECOMMENDED PHYSICAL ACTIVITY FOR YOUNG PEOPLE

Increased awareness of the health benefits of physical activity has led to increased recognition of the need for initiatives to reduce sedentary lifestyles (*1–3,5–8,116–127*). The International Consensus Conference on Physical Activity Guidelines for Adolescents recommends that "all adolescents...be physically active daily, or nearly every day, as part of play, games, sports, work, transportation, recreation, physical education, or planned exercise, in the context of family, school, and community activities" and that "adolescents engage in three or more sessions per week of activities that last 20 minutes or more at a time and that require moderate to vigorous levels of exertion" (*128*).

PREVALENCE OF PHYSICAL ACTIVITY AMONG YOUNG PEOPLE

Although children and adolescents are more physically active than adults, many young people do not engage in moderate or vigorous physical activity at least 3 days a week (*47,48,129–131*). For example, among high school students, only 52% of girls and 74% of boys reported that they exercised vigorously on at least 3 of the previous

7 days (*48*). Physical activity among both girls and boys tends to decline steadily during adolescence. For example, 69% of young people 12–13 years of age but only 38% of those 18–21 years of age exercised vigorously on at least 3 of the preceding 7 days (*47*), and 72% of 9th-grade students but only 55% of 12th-grade students engaged in this level of physical activity (*48*).

FACTORS INFLUENCING PHYSICAL ACTIVITY

Demographic, individual, interpersonal, and environmental factors are associated with physical activity among children and adolescents. Demographic factors include sex, age, and race or ethnicity. Girls are less active than boys, older children and adolescents are less active than younger children and adolescents, and among girls, blacks are less active than whites (*47,48,132–134*).

Individual factors positively associated with physical activity among young people include confidence in one's ability to engage in exercise (i.e., self-efficacy) (*133,135,136*), perceptions of physical or sport competence (*137–141*), having positive attitudes toward physical education (*133,138*), and enjoying physical activity (*142,143*). Perceiving benefits from engaging in physical activity or being involved in sports is positively associated with increased physical activity among young people (*133,137,138*). These perceived benefits include excitement and having fun; learning and improving skills; staying in shape; improving appearance; and increasing strength, endurance, and flexibility (*132,137,144–147*). Conversely, perceiving barriers to physical activity, particularly lack of time, is negatively associated with physical activity among adolescents (*133,137,148*). In addition, a person's stage of change (i.e., readiness to begin being physically active) (*149–153*) influences physical activity among adults and may also influence physical activity among young people.

Interpersonal and environmental factors positively associated with physical activity among young people include peers' or friends' support for and participation in physical activity (*133,142,154*). Among older children and adolescents, physical activity is positively associated with that of siblings (*155,156*), and research generally reveals a positive relationship between the physical activity level of parents and that of their children, particularly adolescents (*133,135,141,142,154,156–163*). Parental support for physical activity is correlated with active lifestyles among adolescents (*133,141,154,157*). Physical activity among young people is also positively correlated with having access to convenient play spaces (*133,160*), sports equipment (*142,157*), and transportation to sports or fitness programs (*158*).

OBJECTIVES FOR PHYSICAL ACTIVITY AMONG YOUNG PEOPLE

The following national health promotion and disease prevention objectives for the year 2000 are related to physical activity and fitness among children and adolescents (*164*).

1.2 Reduce overweight to a prevalence of ≤20% among people aged ≥20 years and ≤15% among adolescents aged 12–19 years.

1.3 Increase to ≥30% the proportion of people aged ≥6 years who engage regularly, preferably daily, in light to moderate physical activity for ≥30 minutes per day.

1.4 Increase to ≥20% the proportion of people aged ≥18 years and to ≥75% the proportion of children and adolescents aged 6–17 years who engage in vigorous physical activity that promotes the development and maintenance of cardiorespiratory fitness ≥3 days per week for ≥20 minutes per occasion.

1.5 Reduce to ≤15% the proportion of people aged ≥6 years who engage in no leisure-time physical activity.

1.6 Increase to ≥40% the proportion of people aged ≥6 years who regularly perform physical activities that enhance and maintain muscular strength, muscular endurance, and flexibility.

1.7 Increase to ≥50% the proportion of overweight people aged ≥12 years who have adopted sound dietary practices combined with regular physical activity to attain an appropriate body weight.

1.8 Increase to ≥50% the proportion of children and adolescents in 1st through 12th grade who participate in daily school physical education.

1.9 Increase to ≥50% the proportion of school physical education class time that students spend being physically active, preferably engaged in lifetime physical activities.

1.11 Increase community availability and accessibility of physical activity and fitness facilities.

1.12 Increase to ≥50% the proportion of primary care providers who routinely assess and counsel their patients regarding the frequency, duration, type, and intensity of each patient's physical activity practices.

RATIONALE FOR SCHOOL AND COMMUNITY EFFORTS TO PROMOTE PHYSICAL ACTIVITY AMONG YOUNG PEOPLE

Schools and communities should promote physical activity among children and adolescents because many young people already have risk factors for chronic diseases associated with adult morbidity and mortality (*165*). For example, the prevalence of overweight is at an all-time high among children and adolescents (*166*). In addition, physical activity has a beneficial effect on the physical and mental health of young people (*81–100,106–112,114,115*).

People begin to acquire and establish patterns of health-related behaviors during childhood and adolescence (*167*); thus, young people should be encouraged to engage in physical activity. However, many children are less physically active than recommended (*47,48,129–131*). Physical activity declines during adolescence (*47,48*), and enrollment in daily physical education has decreased (*48,168*).

Schools and communities have the potential to improve the health of young people by providing instruction, programs, and services that promote enjoyable, lifelong physical activity (*116–121,124,125*). Schools are an efficient vehicle for providing physical activity instruction and programs because they reach most children and adolescents (*49,125,169*). Communities are essential because most physical activity among young people occurs outside the school setting (*129,170*).

Schools and communities should coordinate their efforts to make the best use of their resources in promoting physical activity among young people (*49,50*). School personnel, students, families, community organizations, and businesses should collaborate to develop, implement, and evaluate physical activity instruction and programs for young people. One way to achieve this collaboration is to form a coalition (*171*). National, state, and local resources that might be useful in promoting physical activity among young people are available to schools and community groups (Appendix A).

Within the school, efforts to promote physical activity among students should be part of a coordinated, comprehensive school health program, which is "an integrated set of planned, sequential, and school-affiliated strategies, activities, and services designed to promote the optimal physical, emotional, social, and educational development of students. The program involves and is supportive of families and is determined by the local community based on community needs, resources, standards, and requirements. It is coordinated by a multidisciplinary team and accountable to the community for program quality and effectiveness" (*172*). This coordinated program should include health education; physical education; health services; school counseling and social services; nutrition services; the psychosocial and biophysical environment; faculty and staff health promotion; and integrated efforts of schools, families, and communities (*173*). These programs have the potential to improve both the health and the educational prospects of students (*49,50*).

Some school health programs have implemented educational and environmental interventions to promote physical activity among students (*132,174–187*). These programs have been effective in enhancing students' physical activity-related knowledge (*174,175,183*), attitudes (*187*), and behavior (*132,186*) and their physical fitness (*183*). Programs that seem to be most effective focus on social factors that influence physical activity (e.g., peers' support for physical activity (*188*).

RECOMMENDATIONS FOR SCHOOL AND COMMUNITY PROGRAMS PROMOTING PHYSICAL ACTIVITY AMONG YOUNG PEOPLE

Listed below are 10 broad recommendations for school and community programs to promote physical activity among young people. Following this list, each recommendation is described in detail.

1. Policy: Establish policies that promote enjoyable, lifelong physical activity among young people.

2. Environment: Provide physical and social environments that encourage and enable safe and enjoyable physical activity.

3. Physical education: Implement physical education curricula and instruction that emphasize enjoyable participation in physical activity and that help students develop the knowledge, attitudes, motor skills, behavioral skills, and confidence needed to adopt and maintain physically active lifestyles.

4. Health education: Implement health education curricula and instruction that help students develop the knowledge, attitudes, behavioral skills, and confidence needed to adopt and maintain physically active lifestyles.

5. Extracurricular activities: Provide extracurricular physical activity programs that meet the needs and interests of all students.

6. Parental involvement: Include parents and guardians in physical activity instruction and in extracurricular and community physical activity programs, and encourage them to support their children's participation in enjoyable physical activities.

7. Personnel training: Provide training for education, coaching, recreation, health-care, and other school and community personnel that imparts the knowledge and skills needed to effectively promote enjoyable, lifelong physical activity among young people.

8. Health services: Assess physical activity patterns among young people, counsel them about physical activity, refer them to appropriate programs, and advocate for physical activity instruction and programs for young people.

9. Community programs: Provide a range of developmentally appropriate community sports and recreation programs that are attractive to all young people.

10. Evaluation: Regularly evaluate school and community physical activity instruction, programs, and facilities.

Recommendation 1. Policy: Establish policies that promote enjoyable, lifelong physical activity among young people.

Policies provide formal and informal rules that guide schools and communities in planning, implementing, and evaluating physical activity programs for young people. School and community policies related to physical activity should comply with state and local laws and with recommendations and standards provided by national, state, and local agencies and organizations. These policies should be included in a written document that incorporates input from administrators, teachers, coaches, athletic trainers, parents, students, health-care providers, public health professionals, and other school and community personnel and should address the following requirements.

Require comprehensive, daily physical education for students in kindergarten through grade 12.

Physical education instruction can increase students' knowledge (*183*), physical activity in physical education class (*177,179,189*), and physical fitness (*183,190–195*). Daily physical education from kindergarten through 12th grade is recommended by the American Heart Association (*118*) and the National Association for Sport and Physical Education (*196*) and is also a national health objective for the year 2000 (*164*). The minimum amount of physical education required for students is usually set by state law. Although most states (94%) and school districts (95%) require some physical education (*173,197*), only one state requires it daily from kindergarten through 12th grade. Less than two thirds (60%) of high school students are enrolled in physical education classes, and only 25% take physical education daily (*48*). Enrollment in both physical education (9th grade, 81%; 12th grade, 42%) and daily physical education (9th grade, 41%; 12th grade, 13%) declines at higher grades, and enrollment in daily physical education and active time in physical education classes decreased from 1991 to 1995 among high school students (*48*). Further, 30% of schools exempt students from physical education if the students participate in band,

chorus, cheerleading, or interscholastic sports (*197*). Substitution of these programs for physical education reduces students' opportunities to develop knowledge, attitudes, motor skills, behavioral skills, and confidence related to physical activity (*196,198*).

Require comprehensive health education for students in kindergarten through grade 12.

Comprehensive health education, which includes instruction on physical activity topics, can complement the instruction students receive in comprehensive physical education (*179*). Health education may improve students' health knowledge, attitudes, and behaviors (*199*). Many educational organizations recommend that students receive planned and sequential health education from kindergarten through 12th grade (*200–203*), and such education is a national health objective for the year 2000 (*164*). Although many states (90%) and school districts (91%) require that schools offer health education, fewer school districts require that a separate course be devoted to health topics (elementary school, 19%; middle school, 44%; senior high school, 66%) (*204*). Administrators of public schools and parents of adolescents in public schools believe that these students should be taught more health information and skills (*205*).

Require that adequate resources, including budget and facilities, be committed for physical activity instruction and programs.

The National Association for Sport and Physical Education and the Joint Committee for National Health Education Standards note that adequate budget and facilities are necessary for physical education, health education, extracurricular physical activities, and community sports and recreation programs to be successful (*198,206–208*). However, these programs rarely have sufficient resources (*168,209*). Schools and communities should be vigilant in ensuring that physical education, health education, and physical activity programs have sufficient financial and facility resources to ensure safe participation by young people (*198,206–208*). Schools should have policies that ensure that teacher-to-student ratios in physical education are comparable to those in other subjects (*198,206,207,210*) and that physical education spaces and facilities are not usurped for other events. Schools should have policies requiring that physical education classes be scheduled so that students in each class are of similar physical maturity and grade level (*198,206,207*).

Require the hiring of physical education specialists to teach physical education in kindergarten through grade 12, elementary school teachers trained to teach health education, health education specialists to teach health education in middle and senior high schools, and qualified people to direct school and community physical activity programs and to coach young people in sports and recreation programs.

Planning, implementing, and evaluating physical activity instruction and programs require specially trained personnel (*125,198,206–208,211*). Physical education specialists teach longer lessons, spend more time on developing skills, impart more knowledge, and provide more moderate and vigorous physical activity than do classroom teachers (*189,212*). Schools should have policies requiring that physical

education specialists teach physical education in kindergarten through grade 12, elementary school teachers trained to teach health education do so in elementary schools, health education specialists teach health education in middle and senior high schools, and qualified people direct school and community physical activity programs and coach young people in sports and recreation programs (*198,206–208,211*).

Some states have established minimum standards for teachers. Eighty-four percent of states require physical education certification for secondary school physical education teachers, and 16% require such certification for elementary school physical education teachers (*197*). Only 69% of states require health education certification for secondary school health education teachers (*204*). These data indicate the need for a greater commitment to hiring professionally trained physical education specialists and health education specialists for our nation's schools.

Some states have established minimum standards for athletic coaches. Both schools and communities should have policies that require employing people who have the coaching competency appropriate to participants' developmental and skill levels (*213*). Coaches who work with beginning athletes should meet at least the Level I, if not Level II, coaching competencies identified by the National Association for Sport and Physical Education (*213*). Entry-level interscholastic coaches and master coaches should achieve at least Level III and Level IV coaching competencies, respectively (*213*).

Require that physical activity instruction and programs meet the needs and interests of all students.

All students, irrespective of their sex, race/ethnicity, health status, or physical and cognitive ability or disability should have access to physical education, health education, extracurricular physical activity programs, and community sports and recreation programs that meet their needs and interests (*214,215*). In addition, physical activity programs that overemphasize a limited set of team sports and underemphasize noncompetitive, lifetime fitness and recreational activities (e.g., walking or bicycling) could exclude or be unattractive to potential participants (*131,216*).

Adolescents' interests and participation in physical activity differ by sex (*47, 48,217*). For example, compared with boys, girls engage in less physical activity (*47,48*), are less likely to participate in team sports (*47,48,218*), and are more likely to participate in aerobics or dance (*47*). Girls and boys also perceive different benefits of physical activity (*132,137,145,147*); for example, boys more often cite competition and girls more often cite weight management as a reason for engaging in physical activity (*132,137*). Because boys are more likely than girls to have higher perceptions of self-efficacy (*136*) and physical competence (*137,219*), physical activity programs serving girls should provide instruction and experiences that increase girls' confidence in participating in physical activity, opportunities for them to participate in physical activities, and social environments that support their involvement in a range of physical activities. Adolescents' participation in physical activity also differs by race and ethnicity (*47,48*).

Children and adolescents who are obese or who have physical or cognitive disabilities, chronic health conditions (e.g., diabetes, heart disease, or asthma), or low levels of fitness need instruction and programs in which they can develop motor skills, improve fitness, and experience enjoyment and success (*3,124,143,164,220*). Young

people who have these disabilities or health concerns are often overtly or unintentionally discouraged from engaging in regular physical activity even though they may be in particular need of it (*220,221*). For example, 59% of high schools allow students who have physical disabilities to be exempt from physical education courses (*197*). Schools should be required to provide modified physical education and health education for these students (*221,222*). By modifying physical education, health education, extracurricular physical activities, and community sports and recreation programs, schools and communities can help these young people acquire the physical, mental, and social benefits of physical activity.

Physical education, health education, extracurricular physical activity programs, and community sports and recreation programs can also provide opportunities for multicultural experiences (e.g., American Indian and African dance). These experiences can meet children's and adolescents' interests and foster their awareness and appreciation of different physical activities enjoyed by different cultural groups (*223*).

Recommendation 2. Environment: Provide physical and social environments that encourage and enable safe and enjoyable physical activity.

The physical and social environments of children and adolescents should encourage and enable their participation in safe and enjoyable physical activities. These environments are described by the following guidelines.

Provide access to safe spaces and facilities for physical activity in the school and the community.

School spaces and facilities should be available to young people before, during, and after the school day, on weekends, and during summer and other vacations. These spaces and facilities should also be readily available to community agencies and organizations offering physical activity programs (*3,118,119,124,127,198,200, 206,207,224*).

National health objective 1.11 calls for increased availability of facilities for physical activity (e.g., hiking, bicycling, and fitness trails; public swimming pools; and parks and open spaces for recreation) (*164*). Community coalitions should coordinate the availability of these open spaces and facilities. Some communities may need to build new facilities, whereas others may need only to coordinate existing community spaces and facilities. The needs of all children and adolescents, particularly those who have disabilities, should be incorporated into the building of new facilities and the coordination of existing ones.

Schools and communities should ensure that spaces and facilities meet or exceed recommended safety standards for design, installation, and maintenance (*206,207, 225,226*). For example, playgrounds should have cool water and adequate shade for play and rest (*227*). Young people also need places that are free from violence and free from exposure to environmental hazards (e.g., fumes from incinerators or motor vehicles). Spaces and facilities for physical activity should be regularly inspected, and hazardous conditions should be immediately corrected (*206,207,228*).

Establish and enforce measures to prevent physical activity-related injuries and illnesses.

Minimizing physical activity-related injuries and illnesses among young people is the joint responsibility of teachers, administrators, coaches, athletic trainers, other school and community personnel, parents, and young people (*226*). Preventing injuries and illness includes having appropriate adult supervision, ensuring compliance with safety rules and the use of protective clothing and equipment, and avoiding the effects of extreme weather conditions. Explicit safety rules should be taught to, and followed by, young people in physical education, health education, extracurricular physical activity programs, and community sports and recreation programs (*164,206, 229–231*). Adult supervisors should consistently reinforce safety rules (*231*).

Adult supervisors should be aware of the potential for physical activity-related injuries and illnesses among young people so that the risks for and consequences of these injuries and illnesses can be minimized (*228,229*). These adults should receive medical information relevant to each student's participation in physical activity (e.g., whether the child has asthma), be able to provide first aid and cardiopulmonary resuscitation, and practice precautions to prevent the spread of bloodborne pathogens (e.g., the human immunodeficiency virus) (*198,207*). Written policies on providing first aid and reporting injuries and illnesses to parents and to appropriate school and community authorities should be established and followed (*198,207*). Adult supervisors can take the following steps to avoid injuries and illnesses during structured physical activity for young people: require physical assessment before participation, provide developmentally appropriate activities, ensure proper conditioning, provide instruction on the biomechanics of specific motor skills, appropriately match participants according to size and ability, adapt rules to the skill level of young people and the protective equipment available, avoid excesses in training, modify rules to eliminate unsafe practices, and ensure that injuries are healed before further participation (*198,207,227,228*).

Children and adolescents should be provided with, and required to use, protective clothing and equipment appropriate to the type of physical activity and the environment (*164,198,206,207,227–229,231*). Protective clothing and equipment includes footwear appropriate for the specific activity; helmets for bicycling; helmets, face masks, mouth guards, and protective pads for football and ice hockey; and reflective clothing for walking and running. Protective gear and athletic equipment should be frequently inspected, and they should be replaced if worn, damaged, or outdated.

Exposure to the sun can be minimized by use of protective hats, clothing, and sunscreen; avoidance of midday sun exposure; and use of shaded spaces or indoor facilities (*164,227,232*). Heat-related illnesses can be prevented by ensuring that children and adolescents frequently drink cool water, have adequate rest and shade, play during cool times of the day, and are supervised by people trained to recognize the early signs of heat exhaustion and heat stroke (*227*). Cold-related injuries can be avoided by ensuring that young people wear multilayered clothing for outside play and exercise, increasing the intensity of outdoor activities, using indoor facilities during extremely cold weather, ensuring proper water temperature for aquatic activities, and providing supervision by persons trained to recognize the early signs of frostbite and hypothermia (*227*). Measures should be taken to avoid health problems

associated with poor air quality (e.g., reduce the intensity of physical activity or hold physical education classes or programs indoors).

Teachers, parents, coaches, athletic trainers, and health-care providers should promote a range of healthy behaviors. These adults should encourage young people to abstain from tobacco, alcohol, and other drugs; to maintain a healthy diet; and to practice healthy weight management techniques (*227*). Adult supervisors should be aware of the signs and symptoms of eating disorders and take steps to prevent eating disorders among young people (*227*).

Provide time within the school day for unstructured physical activity.

During the school day, opportunities for physical activity exist within physical education classes, during recess, and immediately before and after school. For example, students in grades one through four have an average recess period of 30 minutes (*233*). School personnel should encourage students to be physically active during these times. The use of time during the school day for unstructured physical activity should complement rather than substitute for the physical activity and instruction children receive in physical education classes.

Discourage the use or withholding of physical activity as punishment.

Teachers, coaches, and other school and community personnel should not force participation in or withhold opportunities for physical activity as punishment. Using physical activity as a punishment risks creating negative associations with physical activity in the minds of young people. Withholding physical activity deprives students of health benefits important to their well-being.

Provide health promotion programs for school faculty and staff.

Enabling school personnel to participate in physical activity and other healthy behaviors should help them serve as role models for students. School-based health promotion programs have been effective in improving teachers' participation in vigorous exercise, which in turn has improved their physical fitness, body composition, blood pressure, general well-being, and ability to handle job stress (*234,235*). In addition, participants in school-based health promotion programs may be less likely than nonparticipants to be absent from work (*235*).

Recommendation 3. Physical education: Implement physical education curricula and instruction that emphasize enjoyable participation in physical activity and that help students develop the knowledge, attitudes, motor skills, behavioral skills, and confidence needed to adopt and maintain physically active lifestyles.

Physical education curricula and instruction are vital parts of a comprehensive school health program. One of the main goals of these curricula should be to help students develop an active lifestyle that will persist into and throughout adulthood (*3,174,180,236,237*).

Provide planned and sequential physical education curricula from kindergarten through grade 12 that promote enjoyable, lifelong physical activity.

School physical education curricula are often mandated by state laws or regulations. Many states (76%) and school districts (89%) have written goals, objectives, or outcomes for physical education (CDC, unpublished data), and only 26% of states require a senior high school physical education course promoting physical activities that can be enjoyed throughout life (*197*). Planned and sequential physical education curricula should emphasize knowledge about the benefits of physical activity and the recommended amounts and types of physical activity needed to promote health (*3,116–118,124,164*). Physical education should help students develop the attitudes, motor skills, behavioral skills, and confidence they need to engage in lifelong physical activity (*116–118,122,125, 164,237*). Physical education should emphasize skills for lifetime physical activities (e.g., dance, strength training, jogging, swimming, bicycling, cross-country skiing, walking, and hiking) rather than those for competitive sports (*116–118,164,197, 237–239*).

If physical fitness testing is used, it should be integrated into the curriculum and emphasize health-related components of physical fitness (e.g., cardiorespiratory endurance, muscular strength and endurance, flexibility, and body composition). The tests should be administered only after students are well oriented to the testing procedures. Testing should be a mechanism for teaching students how to apply behavioral skills (e.g., self-assessment, goal setting, and self-monitoring) to physical fitness development and for providing feedback to students and parents about students' physical fitness. The results of physical fitness testing should not be used to assign report card grades (*193,240,241*). Also, test results should not be used to assess program effectiveness; the validity of these measurements may be unreliable, and physical fitness and improvements in physical fitness are influenced by factors (e.g., physical maturation, body size, and body composition) beyond the control of teachers and students (*193,240,241*).

Use physical education curricula consistent with the national standards for physical education.

The national standards for physical education (*211*) describe what students should know and be able to do as a result of physical education. A student educated about physical activity "has learned skills necessary to perform a variety of physical activities, is physically fit, does participate regularly in physical activity, knows the implications of and the benefits from involvement in physical activities, [and] values physical activity and its contribution to a healthful lifestyle" (*196*). The national standards emphasize the development of movement competency and proficiency, use of cognitive information to enhance motor skill acquisition and performance, establishment of regular participation in physical activity, achievement of health-enhancing physical fitness, development of responsible personal and social behavior, understanding of and respect for individual differences, and awareness of values and benefits of physical activity participation (*211*). These standards provide a framework that should be used to design, implement, and evaluate physical education curricula that promote enjoyable, lifelong physical activity.

Use active learning strategies and emphasize enjoyable participation in physical education class.

Enjoyable physical education experiences are believed to be essential in promoting physical activity among children and adolescents (*3,124,125*). Physical education experiences that are enjoyable and actively involve students in learning may help foster positive attitudes toward and encourage participation in physical education and physical activity (*133,138*). Active learning strategies that involve the student in learning physical activity concepts, motor skills, and behavioral skills include brainstorming, cooperative groups, simulation, and situation analysis.

Develop students' knowledge of and positive attitudes toward physical activity.

Knowledge of physical activity is viewed as an essential component of physical education curricula (*117,118,124,125,164*). Related concepts include the physical, social, and mental health benefits of physical activity; the components of health-related fitness; principles of exercise; injury prevention; precautions for preventing the spread of bloodborne pathogens; nutrition and weight management; social influences on physical activity; and the development of safe and effective individualized physical activity programs. For both young people and adults, knowledge about how to be physically active may be a more important influence on physical activity than is knowledge about why to be active (*237,242*).

Positive attitudes toward physical activity may affect young people's involvement in physical activity (*116–118,124,125,164*). Positive attitudes include perceptions that physical activity is important and that it is fun. Ways to generate positive attitudes include providing students with enjoyable physical education experiences that meet their needs and interests, emphasizing the many benefits of physical activity, supporting students who are physically active, and using active learning strategies.

Develop students' mastery of and confidence in motor and behavioral skills for participating in physical activity.

Physical education should help students master (*243–245*) and gain confidence in (*3,125,219,242*) motor and behavioral skills used in physical activity. Students should become competent in many motor skills and proficient in a few to use in lifelong physical activities (*117,118,122,124,164,211*). Elementary school students should develop basic motor skills that allow participation in a variety of physical activities, and older students should become competent in a select number of lifetime physical activities they enjoy and succeed in. Students' mastery of and confidence in motor skills occurs when these skills are broken down into components and the tasks are ordered from easy to hard (*246*). In addition, students need opportunities to observe others performing the skills and to receive encouragement, feedback, and repeated opportunities for practice during physical education class (*246*).

Behavioral skills (e.g., self-assessment, self-monitoring, decision making, goal setting, and communication) may help students establish and maintain regular involvement in physical activity. Active student involvement and social learning experiences that focus on building confidence may increase the likelihood that children

and adolescents will enjoy and succeed in physical education and physical activity (*246*).

Provide a substantial percentage of each student's recommended weekly amount of physical activity in physical education classes.

For physical education to make a meaningful and consistent contribution to the recommended amount of young people's physical activity, students at every grade level should take physical education classes that meet daily and should be physically active for a large percentage of class time (*3,125,164,247*). National health objective 1.9 calls for students to be physically active for at least 50% of physical education class time (*164*), but many schools do not meet this objective (*212,248–251*), and the percentage of time students spend in moderate or vigorous physical activity during physical education classes has decreased over the past few years (*48*).

Promote participation in enjoyable physical activity in the school, community, and home.

Physical education teachers should encourage students to be active before, during, and after the school day. Physical education teachers can also refer students to community physical sports and recreation programs available in their community (*3*) and promote participation in physical activity at home by assigning homework that students can do on their own or with family members (*122*).

Recommendation 4. Health education: Implement health education curricula and instruction that help students develop the knowledge, attitudes, behavioral skills, and confidence needed to adopt and maintain physically active lifestyles.

Health education can effectively promote students' health-related knowledge, attitudes, and behaviors (*199,252,253*). The major contribution of health education in promoting physical activity among students should be to help them develop the knowledge, attitudes, and behavioral skills they need to establish and maintain a physically active lifestyle (*208,209,254*).

Provide planned and sequential health education curricula from kindergarten through grade 12 that promote lifelong participation in physical activity.

Many states (65%) and school districts (82%) require that physical activity and physical fitness topics be part of a required course in health education (*204*). Planned and sequential health education curricula, like physical education curricula, should draw on social cognitive theory (*188*) and emphasize physical activity as a component of a healthy lifestyle.

Use health education curricula consistent with the national standards for health education.

The national standards for health education developed by the Joint Committee for National Health Education Standards (*208*) describe what health-literate students

should know and be able to do as a result of school health education. Health literacy is "the capacity of individuals to obtain, interpret, and understand basic health information and services and the competence to use such information and services in ways which enhance health" (*208*). The standards specify that, as a result of health education, students should be able to comprehend basic health concepts; access valid health information and health-promoting products and services; practice health-enhancing behaviors; analyze the influence of culture and other factors on health; use interpersonal communication skills to enhance health; use goal-setting and decision-making skills to enhance health; and advocate for personal, family, and community health. These standards emphasize the development of students' skills and can be used as the basis for health education curricula.

Promote collaboration among physical education, health education, and classroom teachers as well as teachers in related disciplines who plan and implement physical activity instruction.

Physical education and health education teachers in about one third of middle and senior high schools collaborate on activities or projects (*197,204*). Collaboration allows coordinated physical activity instruction and should enable teachers to provide range and depth of physical activity-related content and skills. For example, health education and physical education teachers can collaborate to reinforce the link between sound dietary practices and regular physical activity for weight management. Collaboration also allows teachers to highlight the influence of other behaviors on the capacity to engage in physical activity (e.g., using alcohol or other drugs) or behaviors that interact with physical activity to reduce the risk of developing chronic diseases (e.g., not using tobacco).

Use active learning strategies to emphasize enjoyable participation in physical activity in the school, community, and home.

Health education instruction should include the use of active learning strategies. Such strategies may encourage students' active involvement in learning and help them develop the concepts, attitudes, and behavioral skills they need to engage in physical activity (*209,254*). Additionally, health education teachers should encourage students to adopt healthy behaviors (e.g., physical activity) in the school, community, and home.

Develop students' knowledge of and positive attitudes toward healthy behaviors, particularly physical activity.

Health education curricula should provide information about physical activity concepts (*3*). These concepts should include the physical, social, and mental health benefits of physical activity; the components of health-related fitness; principles of exercise; injury prevention and first aid; precautions for preventing the spread of bloodborne pathogens; nutrition, physical activity, and weight management; social influences on physical activity; and the development of safe and effective individualized physical activity programs.

Health instruction should also generate positive attitudes toward healthy behaviors. These positive attitudes include perceptions that it is important and fun to participate in physical activity. Ways to foster positive attitudes include emphasizing

the multiple benefits of physical activity, supporting children and adolescents who are physically active, and using active learning strategies.

Develop students' mastery of and confidence in the behavioral skills needed to adopt and maintain a healthy lifestyle that includes regular physical activity.

Children and adolescents should develop behavioral skills that may enable them to adopt healthy behaviors (*116,164*). Certain skills (e.g., self-assessment, self-monitoring, decision making, goal setting, identifying and managing barriers, self-regulation, reinforcement, communication, and advocacy) may help students adopt and maintain a healthy lifestyle that includes regular physical activity. Active learning strategies give students opportunities to practice, master, and develop confidence in these skills (*209,254*).

Recommendation 5. Extracurricular activities: Provide extracurricular physical activity programs that meet the needs and interests of all students.

Extracurricular activities are any activities offered by schools outside of formal classes. Interscholastic athletics, intramural sports, and sports and recreation clubs are believed to contribute to the physical and social development of young people (*196*), and schools should extend these benefits to the greatest possible number of students. These activities can help meet the goals of comprehensive school health programs by providing students with opportunities to engage in physical activity and to further develop the knowledge, attitudes, motor skills, behavioral skills, and confidence needed to adopt and maintain physically active lifestyles.

Provide a diversity of developmentally appropriate competitive and noncompetitive physical activity programs for all students.

Interscholastic athletic programs are typically limited to the secondary school level and usually consist of a few highly competitive team sports. Intramural sports programs are not common but, where they are offered, usually emphasize competitive team sports. Such programs usually underserve students who are less skilled, less physically fit, or not attracted to competitive sports (*145,255,256*). One reason that participation in sports declines steadily during late childhood and adolescence is that undue emphasis is placed on competition (*145*).

After the needs and interests of all students are assessed, interscholastic, intramural, and club programs should be modified and expanded to offer a range of competitive and noncompetitive activities. For example, noncompetitive lifetime physical activities include walking, running, swimming, and bicycling (*118*).

Link students to community physical activity programs, and use community resources to support extracurricular physical activity programs.

Schools should work with community organizations to enhance the appropriate use of out-of-school time among children and adolescents (*224*) and to develop effective systems for referring young people from schools to community agencies and organizations that can provide needed services. To help students learn about

community resources, schools can sponsor information fairs that represent community groups, physical education and health education teachers can provide information about community resources as part of the curricula (*3*), and community-based program personnel can be speakers or demonstration lecturers in school classes.

Frequently schools have the facilities but lack the personnel to deliver extracurricular physical activity programs. Community resources can expand existing school programs by providing intramural and club activities on school grounds. For example, community agencies and organizations can use school facilities for after-school physical fitness programs for children and adolescents, weight management programs for overweight or obese young people, and sports and recreation programs for young people with disabilities or chronic health conditions.

Recommendation 6. Parental involvement: Include parents and guardians in physical activity instruction and in extracurricular and community physical activity programs, and encourage them to support their children's participation in enjoyable physical activities.

Parental involvement in children's physical activity instruction and programs is key to the development of a psychosocial environment that promotes physical activity among young people (*116,117,208,231,257,258*). Involvement in these programs provides parents opportunities to be partners in developing their children's physical activity-related knowledge, attitudes, motor skills, behavioral skills, confidence, and behavior. Thus, teachers, coaches, and other school and community personnel should encourage and enable parental involvement. For example, teachers can assign homework to students that must be done with their parents and can provide flyers designed for parents that contain information and strategies for promoting physical activity within the family (*259*). Parents can also join school health advisory councils, booster clubs, and parent-teacher organizations (*209,259*). Parents who have been trained by professionals can also serve as volunteer coaches for or leaders of extracurricular physical activity programs and community sports and recreation programs.

Encourage parents to advocate for quality physical activity instruction and programs for their children.

Parents may be able to influence the quality and quantity of physical activity available to their children by advocating for comprehensive, daily physical education in schools and for school and community physical activity programs that promote lifelong physical activity among young people (*164*). Parents should also advocate for safe spaces and facilities that provide their children opportunities to engage in a range of physical activities (*164,257*).

Encourage parents to support their children's participation in appropriate, enjoyable physical activities.

Parents should ensure that their children participate in physical education classes, extracurricular physical activity programs, and community sports and recreation programs in which the children will experience enjoyment and success (*145*). Parents

should learn what their children want from extracurricular and community physical activity programs and then help select appropriate activities (*145*). Fun and skill development, rather than winning, are the primary reasons most young people participate in physical activity and sports programs (*145,255*). Parents should help their children gain access to toys and equipment for physical activity and transportation to activity sites (*145*).

Encourage parents to be physically active role models and to plan and participate in family activities that include physical activity.

Parental support is a determinant of physical activity among children and adolescents (*133,141,154,157*), and parents' attitudes toward physical activity may influence children's involvement in physical activity (*260*). Parents and guardians should try to be role models for physical activity behavior and should plan and participate in family activities (e.g., going to the community swimming pool or using the community trails for bicycling or walking) (*3,116,117,164,231,239,257,258*).

Because peers and friends influence children's physical activity behavior (*133, 142,154*), parents can encourage their children to be active with their friends. Children's participation in sedentary activities (e.g., watching television or playing video games) should be monitored and replaced with physical activity (*164,242*), and parents should encourage their children to play outside in safe places and in supervised playgrounds and parks (*231,261*).

Recommendation 7. Personnel training: Provide training for education, coaching, recreation, health-care, and other school and community personnel that imparts the knowledge and skills needed to effectively promote enjoyable, lifelong physical activity among young people.

The lack of trained personnel is a barrier to implementing safe, organized, and effective physical activity instruction and programs for young people. National, state, and local education and health agencies; institutions of higher education; and national and state professional organizations should collaborate to provide teachers, coaches, administrators, and other school personnel pre-service and in-service training in promoting enjoyable, lifelong physical activity among young people (*116,121, 124,164,247,262*). Instructor training has proven to be efficacious; for example, physical education specialists teach longer and higher quality lessons (*189,212*), and teacher training is important in successful implementation of innovative health education curricula (*263,264*). Institutions of higher education should use national guidelines such as those for athletic coaches (*213*), entry-level physical education teachers (*265*), entry-level health education teachers (*266*), and elementary school classroom teachers (*267*) to plan, implement, and evaluate professional preparation programs for school personnel. In addition, physicians, school nurses, and others who provide health services to young people need pre-service training in promoting physical activity and providing physical activity assessment, counseling, and referral (*116, 121,124,164*).

Although many states and school districts provide in-service training on physical education topics (72% and 50%, respectively) (*197*), all states and school districts need to do so. School personnel often want more training than they receive. For example, more than one third of lead physical education teachers want additional training in developing individualized fitness programs, increasing students' physical activity inside and outside of class, and involving families in physical activity (*197*).

Train teachers to deliver physical education that provides a substantial percentage of each student's recommended weekly amount of physical activity.

The proportion of physical education class time spent on moderate or vigorous physical activity is insufficient to meet national health objective 1.9 (*212,248–251*). In-service teacher training that focuses on increasing the amount of class time spent on moderate or vigorous physical activity is effective in increasing students' physical activity during physical education classes (*176,177,179,189*). Although 52% of states have offered training to physical education teachers on increasing students' physical activity during class, only 15% of school districts have provided this training (*197*). National, state, and local education and health agencies; institutions of higher education; and national and state professional organizations should augment efforts to provide this training to teachers.

Train teachers to use active learning strategies needed to develop students' knowledge about, attitudes toward, skills in, and confidence in engaging in physical activity.

Physical education and health education teachers should observe experienced teachers using active learning strategies, have hands-on practice in using these strategies, and receive feedback (*268*). Such training should increase teachers' use of these strategies.

Train school and community personnel how to create psychosocial environments that enable young people to enjoy physical activity instruction and programs.

Pre-service and in-service training should help teachers, coaches, and other school and community personnel plan and implement physical education as well as extracurricular and community physical activity programs that meet a range of students' needs and interests. Training should also encourage these school and community personnel to place less emphasis on competition and more emphasis on students' having fun and developing skills.

Train school and community personnel how to involve parents and the community in physical activity instruction and programs.

Few teachers, coaches, and other school personnel have been trained to involve families and the community in physical activity instruction and programs (*197*). Instruction on communication skills for interacting with parents and the community as well as strategies for obtaining adults' support for physical activity instruction and programs is beneficial (*124,259*). Teachers should have the knowledge, skills, and

materials for creating fact sheets for parents and assigning physical education and health education homework for students to complete with their families (*259*).

Train volunteers who coach sports and recreation programs for young people.

Volunteer coaches who work with beginning athletes in schools and communities should have the Level I coaching competency delineated by the National Association for Sport and Physical Education (*213*). Like professional coaches, volunteer coaches should receive professional training on how to provide experiences for young people that emphasize fun, skill development, confidence-building, and self-knowledge (*145*) and injury prevention, first aid, cardiopulmonary resuscitation, precautions against contamination by bloodborne pathogens, and promotion of other healthy behaviors (e.g., dietary behavior).

Recommendation 8. Health services: Assess physical activity patterns among young people, counsel them about physical activity, refer them to appropriate programs, and advocate for physical activity instruction and programs for young people.

Physicians, school nurses, and other people who provide health services to young people have a key role in promoting healthy behaviors. Health-care providers are important in promoting physical activity, especially among children and adolescents who have physical and cognitive disabilities or chronic health conditions.

Regularly assess the physical activity patterns of young people, reinforce physical activity among active young people, counsel inactive young people about physical activity, and refer young people to appropriate physical activity programs.

As a routine part of care, health-care providers should assess the physical activity of their young patients (*117,164,230,231,258,269*). Young people and their families should be counseled about the importance of physical activity and be provided information that enable young people to initiate and maintain regular, safe, and enjoyable participation in physical activity (*3,164,230,231,239,258*). Children and adolescents who are already active should be encouraged to continue their physical activity. Health-care providers should work with inactive young people and their families to develop exercise prescriptions and should refer these young people to school and community physical activity programs appropriate to the youths' needs and interests (*117,258*). Children with chronic diseases, risk factors for chronic diseases, and physical and cognitive disabilities have special physical activity needs (*257,269*). Obese children and adolescents, for example, should be referred to a physical activity and nutrition program for overweight young people.

Advocate for school and community physical activity instruction and programs that meet the needs of young people.

To help create physical and social environments that encourage physical activity, health-care providers should advocate for physical education curricula, extracurricular

activities, and community sports and recreation programs that emphasize lifetime physical activities and that enable participation in safe, enjoyable physical activities (*116,239,257,258*). Physicians, school nurses, and other health-care professionals can support physical activity among children and adolescents by becoming involved in school and community physical activity initiatives. Within schools, many nurses are already involved in joint activities or projects with physical education teachers and health education teachers (*270*). Physicians can volunteer to serve as advisors to schools and other community organizations that provide physical activity instruction and programs to young people (*269*). Health-care providers should advocate that coaches be trained to ensure that young people compete safely and thrive physically, emotionally, and socially (*271*). Health-care providers also should encourage parents to be role models for their children, plan physical activities that involve the whole family, and discuss with their children the value of healthy behaviors such as physical activity (*117,231,239,258,269*).

Recommendation 9. Community programs: Provide a range of developmentally appropriate community sports and recreation programs that are attractive to all young people.

Most physical activity among children and adolescents occurs outside the school setting (*129*). Thus, community sports and recreation programs are integral to promoting physical activity among young people (*3*). These community programs can complement the efforts of schools by providing children and adolescents opportunities to engage in the types and levels of physical activity that may not be offered in school. Community sports and recreation programs also provide an avenue for reaching out-of-school young people.

Provide a diversity of developmentally appropriate community sports and recreation programs for all young people.

Young people become involved in structured physical activity programs for various reasons: to develop competence, to build social relationships, to enhance fitness, and to have fun (*145,272*). However, adolescents' participation in community sports and recreation programs declines with age (*48,145*). Many young people drop out of these programs because the activities are not fun, are too competitive, or demand too much time (*145,256*). Because definitions of fun and success vary with each person's age, sex, and skill level, community sports and recreation programs should assess and try to meet the needs and interests of all young people. These programs should also try to match the skill level of the participants with challenges that encourage skill development and fun and to develop programs that are not based exclusively on winning (*145,255*).

Provide access to community sports and recreation programs for young people.

In most communities, physical activity programs for young people exist, but these opportunities often require transportation, fees, or special equipment. These limitations often discourage children and adolescents from low-income families from participating. Communities should ensure that all young people, irrespective of their

family's income, have access to these programs. For example, community sports and recreation programs can collaborate with schools and other community organizations (e.g., places of worship) to provide transportation to these programs. Communities can also ask businesses to sponsor youth physical activity programs and to provide children and adolescents from low-income families appropriate equipment, clothing, and footwear for participation in physical activity.

Recommendation 10. Evaluation: Regularly evaluate school and community physical activity instruction, programs, and facilities.

Evaluation can be used to assess and improve physical activity policies, spaces and facilities, instruction, programs, personnel training, health services, and student achievement. All groups involved in and affected by school and community programs to promote lifelong physical activity among young people should have the opportunity to contribute to evaluation. Valid evaluations may increase support for and involvement in these programs by students, parents, teachers, and other school and community personnel.

Evaluate the implementation and quality of physical activity policies, curricula, instruction, programs, and personnel training.

Evaluation is useful for gaining insight about the implementation and quality of physical activity policies, physical activity spaces and facilities, physical education and health education curricula and instruction, extracurricular and community sports and recreation programs, and pre-service and in-service training programs for personnel. The Child and Adolescent Trial for Cardiovascular Health (CATCH) (*180*) has developed a model that can be used to assess the quantity and quality of physical education instruction, lesson content, fidelity of curriculum implementation, and opportunities for other physical activity (*273,274*). National competency frameworks, including *Quality Sports, Quality Coaches: National Standards for Athletic Coaches* (*213*), *National Standards for Beginning Physical Education Teachers* (*265*), *A Guide for the Development of Competency-Based Curricula for Entry Level Health Educators* (*266*), and *Health Instruction Responsibilities and Competencies for Elementary (K–6) Classroom Teachers* (*267*) can be used to assess the competencies of coaches, entry-level physical education and health education teachers, and elementary school teachers and the quality of professional training programs for these people. Parents and guardians can use the checklist developed by the National Association for Sport and Physical Education to evaluate the quality of sports and physical activity programs for their children (*275*). Other guidelines exist to assess the provision of health services for children and adolescents (*231,258*) and the safety of playgrounds (*225,226*).

Measure students' attainment of physical activity knowledge, achievement of motor skills and behavioral skills, and adoption of healthy behaviors.

Measuring students' achievement in physical education requires a comprehensive assessment of their knowledge, motor and behavioral skills, and behavior related to physical activity. Measuring students' achievement in health education requires an assessment of their knowledge, behavioral skills, and behaviors. *Moving into the Future:*

National Standards for Physical Education (*211*) and *National Health Education Standards: Achieving Health Literacy* (*208*) describe what students should know and be able to do as a result of comprehensive physical education and health education programs. Student's achievement may be measured using paper-and-pencil tests that assess knowledge and performance tests that assess motor and behavioral skills. Portfolios of students' work that reflect their knowledge, motor and behavioral skills, and progress toward personal physical activity goals are appropriate for assessing students' achievement (*276*). Although fitness testing is a common component of many school physical education programs, the test results should not be used to assign report card grades or assess program effectiveness (*193,240,241*).

CONCLUSION

School and community programs that promote regular physical activity among young people could be among the most effective strategies for reducing the public health burden of chronic diseases associated with sedentary lifestyles. Programs that provide students with the knowledge, attitudes, motor skills, behavioral skills, and confidence to participate in physical activity may establish active lifestyles among young people that continue into and throughout their adult lives. These programs can promote physical activity by establishing physical activity policies; providing physical and social environments that enable safe and enjoyable participation in physical activity; implementing planned and sequential physical education and health education curricula and instruction from kindergarten through 12th grade; providing extracurricular physical activity programs; including parents and guardians in physical activity instruction and programs; providing personnel training in methods to effectively promote physical activity; providing health services that encourage and support physical activity; providing community-based sports and recreation programs; and evaluating school and community physical activity instruction, programs, and facilities.

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APPENDIX A: PHYSICAL ACTIVITY INFORMATION RESOURCE LIST

Several resources for promoting safe and enjoyable physical activity among young people are available from government agencies, professional organizations, and voluntary organizations. On the state and local levels, these materials might be available from affiliates of voluntary health organizations (e.g., the American Heart Association); state and local health departments; governor's councils on physical fitness and sports; state associations for health, physical education, recreation, and dance; state and local organizations that serve young people (e.g., the Young Women's Christian Association); and state physical activity contact networks. On the national level, materials can be obtained from the following agencies and organizations:

American Alliance for Health, Physical Education, Recreation, and Dance
1900 Association Drive
Reston, VA 20191-1599
(703) 476-3400
(800) 213-7193

American Cancer Society
1599 Clifton Road, NE
Atlanta, GA 30329-4251
(800) 227-2345

American Heart Association
7272 Greenville Avenue
Dallas, TX 75231-4596
(800) 242-8721

American School Health Association
PO Box 708
Kent, OH 44240-0708
(330) 678-1601

National Association for Sport and Physical Education
1900 Association Drive
Reston, VA 20191-1599
(703) 476-3410
(800) 213-7193 ext. 410

National Association of Governor's Councils on Physical Fitness and Sports
201 South Capitol Avenue
Suite 560
Indianapolis, IN 46225
(317) 237-5630

Division of Adolescent and School Health Resource Room
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention
MS K-32
4770 Buford Highway, NE
Atlanta, GA 30341-3724
(888) CDC-4NRG

National Heart, Lung, and Blood Institute Information Center
PO Box 30105
Bethesda, MD 20824-0105
(301) 251-1222

National Recreation and Park Association
2775 South Quincy Street
Suite 300
Arlington, VA 22206-2204
(703) 578-5558
(800) 649-3042

President's Council on Physical Fitness and Sports
701 Pennsylvania Avenue, NW
Suite 250
Washington, DC 20004
(202) 272-3421

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