



Promoting Physical Activity

Theme **6**

INTRODUCTION

Physical activity is an essential component of a healthy lifestyle and must begin in infancy and extend throughout adulthood. Regular physical activity increases lean body mass, muscle, and bone strength and promotes good physical health. It fosters psychological well-being, can increase self-esteem and capacity for learning, and can help children and adolescents handle stress. Vigorous-intensity physical activity (eg, jogging or other aerobic exercise) generally provides more benefits than moderate-intensity physical activity.¹ Families should emphasize physical activity early in a child's life, because, as children mature, modern culture provides many temptations to adopt a sedentary lifestyle.

In recent years, a number of governmental agencies and national organizations have focused on the need for Americans to increase their physical activity levels. The US Surgeon General, the Centers for Disease Control and Prevention, and the President's Council on Physical Fitness have recognized and championed the importance of physical activity to overall health.²⁻⁴

Healthy People 2010 lists physical activity as a leading health indicator and includes goals to improve levels of physical activity and reduce sedentary behavior among adolescents.⁵ In addition, the US Department of Health and Human Services and US

Department of Agriculture's *Dietary Guidelines for Americans* recommend that children and adolescents engage in at least 60 minutes of moderate to vigorous physical activity on most days of the week, preferably daily.¹

The dramatic rise in pediatric obesity in recent years has increased health care professionals' and parents' attention to the importance of physical activity. Along with a balanced and nutritious diet, regular physical activity is essential to preventing pediatric overweight conditions.^{1,3} Therefore, health care professionals are encouraged to review this Bright Futures theme in concert with the Promoting Healthy Nutrition and Promoting Healthy Weight themes.

Physical Inactivity: A Growing Problem for Children and Adolescents

Children and adolescents live in an environment today in which opportunities for physical **inactivity** are increasingly common. Children ride to school rather than walk or



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bike, many schools are reducing or eliminating physical education classes and time for recess, many parents are afraid to let their children play outside, and labor-saving devices abound. Screens (television, videos, computers, and video games) are all around us, and “screen time” is an important component of daily life.

The primary sedentary behavior for preschoolers is watching television. Children 6 years and younger spend an average of 2 hours per day in front of the TV, which is about the same amount of time they spend playing outside.⁶ For adolescents, time spent watching television represents the single greatest source of physical inactivity, second only to sleep.⁷ Therefore, reducing the amount of time children and adolescents spend in front of a screen can provide opportunities for them to be physically active.⁸ Parental awareness and assessment of screen time should encourage a balance that includes adequate time for physical activity. The American Academy of Pediatrics recommends that children younger than 2 years should not watch television, and children 2 years and older should limit media time to no more than 1 to 2 hours of quality programming daily.⁹ (For more information on this topic, see the Promoting Healthy Weight Theme.)

In an environment that supports inactivity, being physically active must be a lifelong, conscious decision. Health care professionals can support children, adolescents, and families in this daily commitment by explaining why physical activity is important to overall health, providing information about community physical activity resources, and being physically active themselves.

Children and Youth With Special Health Care Needs

Children and youth with special health care needs should be encouraged to participate in physical activity, based on their ability and

health status, as appropriate. Participating in physical activity can make their tasks of daily living easier, improve their health status, and, ultimately, reduce morbidity from secondary conditions during adulthood. Health care professionals can help parents and children select appropriate activities and duration by considering the child’s needs and concerns, cognitive abilities, and social skills, as well as adaptations that will enable the child to have a positive experience.

Opportunities for physical activity should be included in the child’s Individualized Education Program (IEP) at school, as well as the care plan for home services. Many organizations (eg, American Physical Therapy Association, Disabled Sports USA, and National Sports Center for the Disabled) provide information on appropriate physical activities and potential adaptations for specific conditions and disabilities. Programs such as the Special Olympics also can encourage children with special health care needs to become involved with physical activity.¹⁰

Promoting Physical Activity: Infancy—Birth to 11 Months

The first year of life is marked by dramatic changes in the amount and type of physical



activity the infant displays. Motor skill development begins with involuntary reflexes that ensure the infant's survival. These reflexes become integrated as the infant gains voluntary control over his body. All infants usually acquire motor skills in the same order, but the rate at which these skills are acquired varies from child to child.

At each visit, the health care professional should provide parents with appropriate guidance about the child's next developmental steps to help them plan safe, educational, and appropriate physical activities (Box 1). Infants need parents and other caregivers to provide consistent, lively, and developmentally appropriate physical activity. Without adequate physical stimulation, infants adopt more sedentary behaviors and tend to roll over, crawl, and walk later than babies who enjoy physical activity with a parent or caregiver.

Part of the infant's day should be spent with a caregiver or parent who provides both systematic and spontaneous opportunities for active play and physical activity. Parents or

caregivers can help the child be active through floor play, supervised "tummy time," and all daily routines, such as diapering, dressing and bathing, pulling to sit, rolling over, lifting arms over head, pulling to stand, and helping to lift a foot for a sock. Games such as pat-a-cake, peek-a-boo, and "how big is the baby?" all encourage active movement of the infant.

Giving infants freedom of movement encourages them to explore their environment and learn about their surroundings. Playpens, swings, and infant seats may be appropriate at certain times, but parents should be encouraged to let the infant move around freely with close supervision. Infant walkers and jumpers and car safety seats should not be used as positioning devices in the home. Consideration should be given to families who live in environments where they do not feel it is safe for their child to explore, such as in shelters or substandard housing. Discussions with parents who live in these environments can help them identify appropriate activities so that their child can meet the daily physical activity recommendations.

Health care professionals should caution parents not to use the television or other media to "entertain" or "educate" fussy or bored infants during the first years of life. At this stage of a child's development, television, videos, and computers are not effective tools for these purposes. Quiet play, such as reading, talking, and singing, is preferable because it helps the child appreciate the social component of physical activity and interactivity.

Infants with special health care needs may have delays in motor movement due to genetic or metabolic conditions, premature birth, developmental delays, or other causes. The health care professional should provide parents with information on Early Intervention Services for their child. These services provide support on ways to promote the infant's development within the family's daily routines.

BOX 1

Physical Activity Guidelines for Infants

- Infants should be placed in safe settings that facilitate physical activity and do not restrict movement for prolonged periods.
- Infants should be placed in settings and environments that meet or exceed recommended safety standards for performing large-muscle activities.

Adapted from National Association for Sport and Physical Education. Active start: a statement of physical activity guidelines for children birth to five years. 2002. Available at: <http://www.aahperd.org/naspe/template.cfm?template=toddlers.html>. Accessed March 1, 2006.¹¹

Without adequate physical stimulation, infants adopt more sedentary behaviors and tend to roll over, crawl, and walk later than babies who enjoy physical activity with a parent or caregiver.

Young children with special health care needs can and should enjoy physical activity as much as any other child. Depending on the child's diagnosis and health status, such activities may need to be modified by parents, preschool teachers, child care workers, or therapists.

Promoting Physical Activity: Early Childhood—1 to 4 Years

A primary reason for promoting physical activity during early childhood is to assist young children in mastering basic motor skills.¹² As a child progresses through infancy into the toddler years, her strength and flexibility increase and she is better able to control her head and neck. Most (but not all) children develop gross motor skills in a typical sequence—walking, marching, galloping, hopping, running, traveling around obstacles, and skipping.¹² Most children also master fine motor skills (manipulation) and spatial relationships during the toddler and preschool years. Eye-hand and eye-foot coordination, balance, and depth perception develop during the preschool years as well. Physical activity can promote the mastery of these skills, all of which are important milestones in the child's development. In addition, physical activity can improve physical and mental health and is fun for the child.

Component activities that build upon each other include gross motor activity (large movement skills), stability activity, manipulative activity (small movement or fine motor skills), and rhythm activity.¹² Some activities, such as dancing, combine several of these components. Movement concepts include learning about where and how the body moves, the effort it takes to move the body (eg, time and force), and the relationship of the body to what is around it. Structured play contributes to stability, flexibility, and stamina.

Engaging young children in all forms of physical activity (active play and interactive guided play) promotes the joy of movement, the sense of control, and the ability to navigate the body through space. The most prevalent form of physical activity in early childhood is active play. Simply playing outside (eg, walking, running, climbing, and exploring the outdoor environment) is an important opportunity for physical activity. Interactive guided play, which includes

developmentally appropriate structured forms of physical activity, such as dancing or simple games, allows a caregiver to help the child master specific motor skills in a safe and supervised manner.

Physical activity in young childhood also has other benefits. An Iowa study of young children showed that physical activity contributes to optimal bone development.¹³ Other research has shown that adolescents who had the highest levels of activity in their preschool years also had lower accretion of body fat.¹⁴ Active play and interactive guided play in the young can prevent pediatric overweight and obesity,¹⁵ and also appear to increase self-esteem and reduce symptoms of depression and anxiety during early childhood.¹⁰

Young children with special health care needs can and should enjoy physical activity as much as any other child. Depending on the child's diagnosis and health status, such activities may need to be modified by parents, preschool teachers, child care workers, or therapists. Young children who have significant physical or cognitive impairments usually are enrolled in Early Intervention programs where physical activity takes place as part of the routine day. Alternatively, they are in preschool or child care settings where physical movement activities are adapted to their particular disability, if necessary. Health care professionals can encourage families to ask teachers and therapists for help in integrating those activities into daily routines at home. In addition, many young children with special health care needs (depending on the type of disability) can be included in physical activities that are enjoyed by all children in the community, from playground swings and slides to preschool gymnastic and dance classes.

Promoting Physical Activity: Middle Childhood—5 to 10 Years

As children grow and develop, their motor skills increase, giving them an opportunity to participate in a variety of physical activities. Children may try different physical activities and establish one or more interests that serve as the foundation for lifelong participation in physical activity. When children have multiple options for physical activity available in the community, they can be encouraged to express their preferences, develop competencies, and find activities that fit their skills and interests.

During the middle childhood years, parents are a major influence on a child’s level of

physical activity. Parents should encourage their children to be physically active. Parents who also participate in physical activity with their children (eg, walking, dancing, biking, hiking, playing outside, or participating in sports such as basketball or baseball) demonstrate the importance of regular physical activity and show their children that physical activity can be fun. Children also can be influenced to participate in physical activity by other family members, peers, teachers, and people depicted in the media.

Children are motivated to participate in physical activity by having fun, by feeling competent, and through variety. Age-appropriate activities, coaching styles, and

BOX 2

Age-Appropriate Physical Activities

Age	Motor Skills Being Developed	Appropriate Physical Activities
5-6 years	Fundamental (eg, running, galloping, jumping, hopping, skipping, throwing, catching, striking, or kicking)	<ul style="list-style-type: none"> • Activities that focus on having fun and developing motor skills rather than on competition • Simple activities that require little instruction • Repetitive activities that do not require complex motor and cognitive skills (eg, running, swimming, tumbling, or throwing and catching a ball)
7-9 years	Fundamental Transitional (eg, throwing for distance or throwing for accuracy)	<ul style="list-style-type: none"> • Activities that focus on having fun and developing motor skills rather than on competition • Activities with flexible rules • Activities that require little instruction • Activities that do not require complex motor and cognitive skills (eg, entry-level baseball or soccer)
10-11 years	Transitional Complex (eg, playing basketball)	<ul style="list-style-type: none"> • Activities that continue to focus on having fun and developing motor skills rather than on competition • Activities that require entry-level complex motor and cognitive skills • Activities that continue to emphasize motor skill development but that begin to incorporate instruction on strategy and teamwork

Physical activity also can reduce symptoms of depression and anxiety and improve overall mood.

techniques are important (Box 2).¹⁰ Feelings of failure, embarrassment, competition, and boredom, and rigid structure, discourage participation.

Parents should be cautioned about relying exclusively on schools to provide physical activity for their child, particularly if the child is not involved in organized sports. Given the emphasis on academics, outdoor recess and physical education have been curtailed in many school systems.

Adequate fluid intake during physical activity is important to prevent dehydration (Box 3). The risk of dehydration becomes greater with increased heat, humidity, intensity, or duration of physical activity, body surface area, and sweating.

Promoting Physical Activity: Adolescence—11 to 21 Years

Participating in regular physical activity helps adolescents develop skills and pastimes they can enjoy throughout their lives. Like the younger child, the adolescent who participates in physical activity increases his muscle and bone strength and lean muscle mass. In addition, physical activity may help him reduce body fat and maintain a healthy body weight. Physical activity also can reduce symptoms of depression and anxiety and improve overall mood.¹⁶ Weight-bearing physical activity contributes to building greater bone density in adolescence and helps maintain peak bone density in adulthood.¹⁶

Some adolescents are aware of diseases that affect their family or community (eg, obesity, diabetes, or cardiovascu-

lar disease). This awareness may make them receptive to actions that may reduce risks of these diseases. Health care professionals can consider linking exercise and physical activities with reduced risk of diseases that negatively affect their families and perhaps many people within their communities.

Adolescents have numerous options for regular physical activity, and the longer an adolescent participates in vigorous physical activity, the greater the health benefits.¹⁶ Competitive sports appeal to some; others enjoy noncompetitive activities that provide variety and opportunities for socialization. Even those adolescents who are heavily scheduled with school, extracurricular activities, and part-time jobs can be physically active through short periods (eg, 10-minute duration) of moderate-intensity activity.

BOX 3

Fluid Intake During Physical Activity

Sports drinks usually contain 6% to 8% sugar as well as replenishing electrolytes. They are generally beneficial for physical activities that last longer than 60 minutes. For brief periods of physical activity, the caloric burden of these drinks outweighs the benefits of fluid and electrolyte replacement.

During extremely hot weather, outdoor physical activity should be scheduled during the coolest times of the day (ie, before 10:00 am and after 6:00 pm).¹⁰

To avoid dehydration, children and adolescents should:

- Drink before feeling thirsty, because mild dehydration occurs before thirst sets in.
- Drink cool water (40°F to 50°F) before, during, and after physical activity.
 - Drink 4 to 8 ounces of water 1 to 2 hours before physical activity.
 - Drink 4 to 8 ounces of water every 15 to 20 minutes during physical activity that lasts longer than 1 hour.



Current recommendations note that physical activity can be accumulated through 3 to 6 ten-minute activities over the course of a day. The accumulated total of 60 minutes daily is the important variable for overall health and calorie burning. The longer an adolescent participates in vigorous physical activity, the greater the health benefits.¹⁶

Social and peer influences can positively or negatively affect participation in physical activities. The best physical activities are those that adolescents enjoy. In some communities, the lack of safe places for recreation requires creative alternatives for physical activity, such as using the steps at school or in apartment complexes.

During early adolescence, girls and boys can participate in competitive sports together. However, with the onset of puberty, weight and strength differences rapidly become great enough to pose a safety concern. Coed activities should be limited to non-collision sports. To promote participation and enjoyment for all adolescents, including adolescents with special health care needs, physical education teachers and coaches should establish teams based on each person's skill level, size, and strength, rather than on gender.

In the pursuit of enhanced performance, adolescents who engage in competitive sports and physical activity can be vulnerable to misinformation and unsafe practices. Pressure to achieve a "competitive edge" can encourage adolescents to experiment with ergogenic aids or performance-enhancing substances (eg, anabolic steroids, creatine, and stimulants). Many performance-enhancing substances offer no benefit, and some can adversely affect performance and endurance, jeopardize health, and undermine the benefits of training. Use of anabolic steroids is dangerous. Although they can help build muscle mass, anabolic steroids cause early closure of the epiphyseal plates, resulting in stunted growth. Adolescents who use steroids also risk sterility.

Healthy People 2010 lists physical activity as a leading health indicator and includes goals to improve levels of physical activity and reduce sedentary behavior among adolescents.⁵ By encouraging increased physical activity, health care professionals, program administrators, and policy makers can help their communities achieve these goals and use community resources efficiently.¹⁷

Preventing injury to adolescents during physical activity is a responsibility shared by parents, physical education teachers, coaches, recreation program staff, and adolescents themselves. (For more information on this topic, see the Promoting Safety and Injury Prevention Theme.) The practices listed in Box 4 have been demonstrated to prevent sports and exercise injury.

BOX 4

Preventing Sports and Exercise Injury

- Stretch before participating in sports.
- Use appropriate safety equipment, such as batting helmets in baseball and softball, athletic supporter and cup for boys in contact sports, bicycle helmets in biking, shin guards in soccer and field hockey, wrist guards and elbow and knee pads in in-line skating, and goggles in handball and racquetball.
- Limit duration of specific, repetitive physical activities that require the use of the same muscles (eg, pitching or running).
- Set an appropriate pace when beginning an activity and be aware of early symptoms of injury (eg, increase in muscle soreness, bone or joint pain, excessive fatigue, or decrease in performance). Adolescents who experience any of these symptoms should decrease participation in physical activity until symptoms diminish, or, if the injury is severe, should cease participation temporarily.

The longer an adolescent participates in vigorous physical activity, the greater the health benefits.

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