5

Physical Activity

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LEARNING OBJECTIVES

- To describe the benefits of physical activity for children who attend early learning programs
- To apply the current *Caring for Our Children* standards for physical activity in an early learning setting
- To define the categories of physical activity and how each category applies to different age levels

Physical activity is essential for children's healthy growth and development, both physiologically and emotionally. "Young children need many opportunities throughout the day to develop their large muscles, improve their coordination, and use their limitless energy. Increasing core

strength and hand–eye coordination can help preschoolers improve their gross motor abilities" (Bresson 2018, 28). This chapter discusses why physical activity is important for children, what the recommended amounts and types of activities are for children of different ages, and how early childhood educators can plan for and implement physical activity into their programs.

Benefits of Physical Activity for Young Children

Research has shown that the benefits of daily physical activity are innumerable, both for children and their caregivers, and can promote lifelong health and prevent certain health conditions. Only 24 percent of children in the United States get the nationally recommended 60 minutes or more of moderate-to-vigorous physical activity daily (CDC 2022a). This highlights the importance of normalizing routine physical activity at a young age.

Early learning programs are in a unique position to help young children make regular physical activity a lifelong habit. It is known that physical activity levels of children and among youth and caregivers are correlated; therefore, inactive caregivers will more likely have inactive children. Since many parents are not active either, early learning programs may be the only place a child has the opportunity to consistently engage in physical activity. Physical activity can include outdoor structured or unstructured activities, classroom physical activity, dedicated physical education instruction, or organized sports. All of these activities can help children increase cardiorespiratory fitness, build strong bones and muscles, maintain a healthy weight, improve sleep, and reduce the risk of developing health conditions, such as

- Heart disease
- Cancer
- Type 2 diabetes
- High blood pressure
- Osteoporosis
- Obesity

In addition, physical activity can improve children's mood and self-esteem, which can reduce symptoms of depression and anxiety (Brown et al. 2016). Providing opportunities for regular physical activity as part of the classroom schedule can improve children's cognitive performance and attention levels. Physical activity in the classroom can improve a child's self-regulatory and executive function processes, such as planning, organization, abstract problem-solving, and working memory (Strong et al. 2005). Physical activity can also benefit children who are kinesthetic learners (those who learn through movement and physical experiences). For example, children who are fidgety and unable to sit still for long periods of time may be more engaged and learn better while being physically active or if physical activity occurs just prior to learning activities. Allowing for active time improves gross motor development, decreases stress levels, and helps to promote motivation during classroom learning activities.

Recommendations for Appropriate and Beneficial Physical Activity

Many children do not reach the recommended amount of physical activity per day. For children in early learning programs, the most likely place to participate in physical activity is during their time in an early learning setting. In 2018, the US Department of Health and Human Services (HHS) published a report outlining physical activity guidelines. Activity intensity is categorized into light, moderate, and vigorous (HHS 2018):

1. *Light intensity activity* is defined as activity where a child is able to converse and there is no shortness of breath or sweating.
2. *Moderate intensity activity* is defined as when a child's heart beats faster than normal, they are breathing harder than when they are resting or sitting, they have some difficulty talking, and light sweating occurs.
3. *Vigorous intensity activity* is defined as when a child's heart is beating much faster than normal, their breathing is much harder than normal, they are unable to talk, and their face is red and sweating.

Physical Activity Recommendations by Age

Infants

For infants, physical activity is recommended several times per day, mostly through interactive, floor-based play. At least 30 minutes of supervised tummy time throughout the day while awake is important for gross motor development (HHS 2018). Educators should start by interacting with an infant on their tummy for three to five minutes, increasing time each day. *Caring for Our Children* Standard 3.1.3.1 lists ways to promote tummy time, including placing toys just out of reach of the infant in different locations or having the infant lie on the educator's chest while the educator is on their back. These will promote both lifting of the head and using the arms to lift and reach. *Caring for Our Children* Standard 3.1.3.1 also states infants should not be seated for more than 15 minutes at a time except during meals. Infant equipment (e.g., swings, bouncers, exersaucers) should be used minimally, if at all. Infants should be in an environment that allows safe freedom of movement as much as possible (*CFOC* Standard 5.3.1.10) (Figure 5.1).

Toddlers

Caring for Our Children Standard 3.1.3.1 recommends all children from birth to 6 years old participate in two to three outdoor play times, weather permitting (see the section "Safety" later in this chapter for more information), two or more structured activities that promote movement, and time to work on gross motor skills throughout the day. *Caring for Our Children* Standard 3.1.3.1 recommends children 12–35 months be allowed 60–90 minutes per eight-hour day for moderate-to-vigorous physical activity, either outdoors or indoors. For children in the early learning program for less than eight hours per day, this physical activity goal should be adjusted accordingly. Running should be part of these higher intensity physical activities. Ideally, toddlers should

Figure 5.1. Infants should have space to move and play. (Copyright @ Getty Images.)

also participate in outdoor play for at least 60–90 minutes in a day (*CFOC* Standard 3.1.3.1). Except when sleeping, toddlers should not be sedentary for more than an hour of time or for multiple times throughout the day.

Preschoolers

Children ages 3–5 years should play actively during the day in short bursts. Children should participate in physical activity of any intensity for at least three hours per day (CDC 2022b). Moderate or vigorous activity should occur for more than 60 minutes per day and vigorous activity at least three days per week (HHS 2018). Similar to toddlers, *Caring for Our Children* Standard 3.1.3.1 recommends preschoolers participate in two to three outdoor play times, two or more structured activities that promote movement, and time to work on gross motor skills throughout the day. Like toddlers, preschoolers should also be taken outside for 60–90 minutes of outdoor play daily (weather permitting). Preschoolers should participate in 90–120 minutes of moderate-to-vigorous activity and running should be part of these higher intensity activities.

School-Age Children

Children age 6 years and older should participate in at least 60 minutes per day of moderate or vigorous activity. This daily activity should be vigorous activity at least three days per week (CDC 2022b). Table 5.1 outlines activity guidelines for each age group discussed here and includes optimum time and intensity of activity.

Table 5.1. Physical Activity Guidelines

	Amount of activity	Types of activity
Infants	No set goal recommended but should not be sedentary for more than 15 minutes at a time	Supervised tummy time at least four times per day, otherwise activity recommended throughout day
Toddlers	At least 90–180 minutes per day	At least two structured occasions of 5 to 10 minutes each
Preschoolers	At least 120–180 minutes per day	At least two structured occasions, with a goal of 60 minutes of structured activity. At least 60 minutes moderate-to-vigorous activity.
School-age children	At least 60 minutes per day	Should be moderate-to-vigorous activity

Adapted from and informed by AAP, APHA, & NRC 2019; CDC 2022a, 2022b; HHS 2018; and Ward et al. 2014.

The Educator's Role

Educators can serve as role models for physical activity by encouraging children to be active with them. This can be as simple as taking a group walk. Educators should engage with children during active play times and not just be observers on the sidelines. When educators actively participate in gross motor play with children, children are more likely to participate (CDC 2022c). Educators can also use physical activity to help children who have more difficulty staying on task as well as children who have trouble controlling fidgeting or disengaging behaviors, such as excessive or disruptive talking, gazing off, or moving or getting up during a quiet activity.

Including at least two structured activities daily can encourage higher intensity levels that increase younger children's engagement in active play (*CFOC* Standard 3.1.3.1). *Caring for Our Children* Standard 3.1.3.4 encourages educators to praise children's efforts with prompts (e.g., "That was quick running," "Good catch"). Play or physical activity should not be used as a reward or punishment. Children who misbehave should not be restricted from participating in outdoor play or physical activity unless it is for a maximum of five minutes while calming down (*CFOC* Standard 3.1.3.1).

Educators can also work with families to increase physical activity at home for the whole family.

Administration and Policy

Caring for Our Children Standards 2.1.1.2 and 9.2.3.1 recommend that early learning programs have written policies for promotion of indoor and outdoor physical activity and the removal of barriers to physical activity participation. According to *Caring for Our Children* Standard 9.2.3.1, these policies should include benefits of physical activity and outdoor play, procedures to continue active play in the event of inclement weather, and the expectation of structured and unstructured play in classrooms. Educators should be provided orientation and annual training related to appropriate activities and games to encourage gross motor development during physical activity (*CFOC* Standard 3.1.3.4).

FAMILY CONNECTIONS

Share Resources for Families

There are many family resources that explain how to plan and create fun physical activities. Here are a few:

- **"Healthy Active Living for Families"** is an interactive webpage where families can learn tips and tricks for fun activities at home (**www.healthychildren.org/English/healthy-living/growing-healthy/Pages/default.aspx**).
- **"Kids and Exercise"** for caregivers explains the importance of physical activity and offers ways to incorporate into the home (**https://kidshealth.org/en/parents/exercise.html**).

Activities

Young children are naturally energetic and want to move, so to them exercise and physical activity is fun! With a little encouragement and planning, physical activities can easily be made a part of the regular classroom routine and will likely become a child's favorite time of the day. Physical activity can either be structured or unstructured. *Structured physical activity* is an activity that is planned and intentionally directed by an adult. Examples of structured physical activity include beanbag games, follow the leader, and musical chairs. *Unstructured physical activities* are sometimes called "free time" or "self-selected free play." These are activities that children start by themselves but are facilitated by the educator, who may arrange the environment to allow for play or the materials to do so. Examples of unstructured physical activity include riding a toy or bike, playing tag, imaginative games with friends, or playing on a playground. Time for both structured and unstructured physical activity should be allotted for in a child's daily schedule. Outdoor play is favored over indoor activities when weather and facilities allow for it. Children are more likely to engage in activities that require movement when outdoors compared to indoors, thus promoting physical activity (Tandon et al. 2018).

In general, when planning structured physical activities, educators should adhere to the following guidelines:

- Avoid creating a competitive atmosphere; instead, encourage children to do their best and try to do better than they did before.
- Consider the developmental abilities of the age group.
- Consider the physical abilities of each and every child.
- Make the activities engaging but not so challenging that the children become frustrated.
- Consider the length of the activity and the attention span and interest of the children.

Skills and Abilities

Children's skills and abilities are always developing and changing. Educators must understand that while physical activities are beneficial for children, the types and levels of these activities must be carefully considered and planned. For instance, organized sports like soccer or whiffle ball are not appropriate for infants and toddlers because these activities require more advanced gross motor and coordination skills and include specific rules and instructions to play that go beyond their skills and abilities. Children first need a chance to practice motor skills to enjoy certain physical activities. All activities need to fit children's abilities yet provide space to develop skills.

GROSS MOTOR SKILLS

Below are some guidelines for age ranges and gross motor skills development to help you know generally what to expect, what skills and abilities come first, and what comes next for most children:

Around 3 years old: Children can jump, kick a ball, balance on one foot for three seconds, throw overhand and underhand, switch feet when climbing stairs

Around 4 years old: Children can hop, walk backwards, gallop, walk on a balance beam, bounce a ball and catch a ball, throw to hit a target, balance on one foot for five seconds

Around 5 years old: Children can skip, kick and throw harder and with more accuracy, balance on one foot for 10 seconds (Bresson 2018, 30)

Keeping Their Attention

Attention spans for each age group can vary based on the individual, but typically infants have the shortest attention span and will move rapidly from one activity to the next. Two to three minutes is the most the child will spend with a single toy, and then they will turn to something new. By 12 months, the child may be willing to sit for as long as 15 minutes with a particularly interesting plaything, but most of the time they'll still be a body in motion. The toddler's attention span is a bit longer, about four to six minutes on average and a preschooler's attention span is even longer, eight to 12 minutes on average. These time spans are averages and may vary based on individual needs, time of day, emotional state and support, and how many distractions are nearby (Gaertner, Spinrad, & Eisenberg 2008). Again, this means that toddlers and preschoolers will usually quickly cycle through the structured physical activities that the educator has planned. After two rounds of a particular game, the educator may have some children drifting away from the game and engaging in other activities of their own choosing. Some younger age groups may need several sequential activities or multiple variations of the same activity planned for the same length of time set aside for structured physical activities, whereas educators for older age groups may only need to plan for one activity during the same amount of time. Therefore, it is important for the educator to take into account a child's attention span when planning structured physical activities.

Structured Physical Activities by Age

Infants

Early physical activities for infants involve either the infant moving their own arms and legs or the adult moving the infants' arms or legs while talking and interacting. This can occur after the diapering process is complete (allowing for grasping and kicking), upon waking from a nap (moving arms or legs before getting the infant out of the crib), or during feeding (allowing the infant to grasp the bottle while being fed). Infants thrive on repetition, so they don't mind if the physical activity is the same every time. All infants should engage in supervised tummy time, which promotes head, neck, and truncal control and increases muscle strength. Other movements to be encouraged in this age group are lifting the head, kicking, and reaching during tummy time; reaching for or grasping toys or other objects; playing and rolling on the floor; and crawling around the classroom environment. The educator should smile and praise attempts at any new skills as this will increase the likelihood that the infant will repeat them. The educator should provide an environment that allows freedom of movement as much as possible, that is safe and clean, such as an uncluttered floor space of at least 5 × 7 feet. Infant play space should be out of the caregiver's walking path, away from shelving and objects that could fall, and away from rocking chairs and other potential hazards. Infant rooms generally require caregivers and educators to cover or remove shoes before entering the room to facilitate cleanliness as infants will be spending time on the floor. Ideally, the environment should be comfortable for educators to be on the floor level when interacting with infants.

Toddlers

Toddlers are naturally active and have spurts of energy, although short attention spans. Toddlers often enjoy vigorous, high-energy activities for five to 10 minutes, followed by quieter activities or rest. Children at this age are just beginning to develop new physical skills, and each child will progress at their own rate. It is best to vary activities so that each child has challenges and successes and also to keep their attention. Physical activity should be enjoyable play for every child. The educator should spread out equipment in the classroom or outdoor space and allow plenty of room for activities.

Preschoolers

Children in the preschool age group are learning to hop, skip, and jump forward, and they are eager to show off how they can balance on one foot, catch a ball, or do a somersault. Preschoolers also enjoy playing on a playground, dancing, riding a tricycle, and swimming. The average preschooler has not mastered the basic skills needed to play a particluar sport, such as throwing, catching, and taking turns. There are activities that can help children develop and practice these skills.

School-Age Children

Children in this age group have mastered many of the gross motor skills needed to fully participate and enjoy most organized sports or more complicated games. At this age, they are working on coordination of these skills to allow for success in team or individual sports. Sports

IMMEDIATE IMPACT

Indoor Play for Rainy Days

Plan for outdoor activities two to three times a day, but make sure to have a backup plan for indoor activities if weather doesn't cooperate. For example, garbage ball/sock ball throw is a game that helps children to develop throwing and catching skills and hand–eye coordination, and it is a good indoor option when outside play is not possible.

Garbage ball/Sock ball throw game:

Create garbage balls by wadding up pieces of newspaper or wrapping paper and covering them in packing tape (for sock balls, ball up two or three socks). Mark a chalk or tape line on the floor, where children will stand. Depending on the age of the children, place a target between three and six feet away. Encourage children to aim their throws at the target. For most 3-year-olds, the target is simply there to direct children's throws. Many 4- and 5-year-olds can begin using it for accuracy. Help preschoolers develop underhand and overhand throwing techniques first, and work on accuracy later. (Bresson 2018, 28)

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Figure 5.2. Educator exercising with children. (Copyright @ Getty Images.)

that are easy to incorporate into an early learning program that require little instruction or equipment are soccer or kickball. Children in this age group should be encouraged to join games or sports that are in progress or suggest something to play with their peers. Once again, educators who participate in activities with children model good physical activity habits and sportsmanship and allow for inclusion of more children into the activity (Figure 5.2). Table 5.2 provides multiple examples of activities for children by age.

Table 5.2. Examples of Physical Activity by Age

	Infants (1 year old and younger)	Toddlers (1–2 years old)	Preschoolers (3–5 years old)
Unstructured physical activities	• Reaching and grasping for toys and other objects • Pulling up to stand on furniture or educators • Crawling around classroom • Water tables or water play (outdoors) • Banging on classroom items or pots and pans • Pushing toys when available	• Dancing • Tumbling • Running • Beanbag toss • Bubble catch • Water tables or water play (outdoors)	• Catch and throw with a ball or kicking a ball back and forth • Tag • Running/races • Dancing • Chalk drawing • Swimming (if possible)
Structured physical activities	• Tummy time	• Direction games (e.g., Simon Says; Red Light, Green Light) • Songs with action words (e.g., "Head, Shoulders, Knees, and Toes") • Obstacle courses	• Scavenger hunts or exploration walks • Obstacle courses • Follow the Leader • Musical Chairs • Duck, Duck, Goose

Safety

As with all physical activity, there is a risk for injury, bumps, and bruises. Educators should be equipped and trained to address and handle situations in which a child has been injured or experienced a medical situation during physical activity. (For more on injury prevention and treatment, see "Chapter 7: First Aid and Injuries.")

Children with Medical or Developmental Concerns

Every effort should be made for all children to be able to participate in activities, including physical activity (*CFOC* Standard 8.2). During physical activity, children with underlying medical conditions, developmental delays, or physical disabilities may need special accommodations or preparation. "Chapter 10: Inclusion of Young Children with Special Healthcare Needs and/or Medical Complexity" focuses on children with special healthcare needs and provides more information. For any child with an underlying medical condition or developmental delay, discussion with a child's healthcare provider, early intervention therapist, or a child care health consultant upon enrollment of the child in the program can help to not only accommodate but also enable a child to flourish in an early learning program. It is important to plan and try to accommodate as much as possible children with special needs who may need adaptive equipment. Overall, children with disabilities are less likely to participate in the recommended amount of physical activity and are more likely to be obese.

A common medical condition in early childhood that flares with physical activity or change in temperature or environment is asthma. An individualized care plan should be available from a child's healthcare provider that explains how to keep a child's symptoms from flaring. This may involve administering medication prior to outside or active play or if any symptoms develop. If a child is regularly showing symptoms of their asthma, the family should be instructed to talk with the child's healthcare provider as management of the illness may need to be changed. A special care plan should be available for educators to follow for all children with any medical condition or developmental delay prior to participating in physical activity.

Summary

The benefits of physical activity are numerous for children. The earlier physical activity becomes a daily part of the schedule at a child's early learning program, the more benefits for the child. *Caring for Our Children* guidelines and standards on participating in and staying safe during physical activity can help guide educators as they implement new activities. Continuing education is also important for educators to stay up to date on ways to keep children active.