CHAPTER 3

Physical Development

Young children learn best by *doing*. Active physical play supports preschool children's brain development[1] and is a primary means for them to explore and discover their world.

Physical activities enhance all aspects of development, including cognitive, emotional, social, as well as physical. For example, cognitive growth occurs when children problem-solve how to negotiate an obstacle course or how to build a fort. Acquisition of physical skills supports emotional development by increasing children's confidence and willingness to try new activities. Physical play creates optimal opportunities for social development. Since much of preschool children's peer play involves physical activities, proficient physical skills enable children to interact with others and to develop friendships. Active physical play also has clear benefits for children's health and fitness. Promoting children's **physical fitness** is critical given the increasing rates of lifestyle-related health issues (including **obesity** and diabetes) among children in California. All children, no matter their ability levels or backgrounds, benefit from engaging in physical activities.

The preschool years are a prime time for children's physical development. Preschool programs have a key role in maximizing children's developmental potential during this important time by providing well-designed, regular, and frequent opportunities for physical play. Although many of young children's physical activities are exploratory and self-directed, children greatly benefit from adult encouragement and guidance when learning new physical skills. Teachers tap into children's intrinsic motivation for movement by designing meaningful, culturally appropriate, and accessible play activities in which all children feel challenged yet successful.

Teachers are important role models in the area of physical development. Children benefit immensely when teachers engage in physical activities alongside children and share in the fun of physical movement. Just as important, preschool programs collaborate with family and community members to promote children's physical development. Family support and participation foster children's active lifestyle habits. Promoting active lifestyles during the preschool years will benefit children throughout their lives.

Guiding Principles

- **Developmentally appropriate movement programs accommodate a variety of individual differences among children.**
  Children of the same chronological age may exhibit a wide range of **movement skills** because of differences in developmental level, previous experience, opportunity for practice, fitness level, socioeconomic status, special needs, and cultural expectations. These differences need to be considered and accommodations made for them in order to create beneficial learning experiences for all children**.**

- **Children often learn best through maximum active participation.**
  There should be a daily quest to minimize sitting, waiting, and watching so children enjoy meaningful participation in physical activities. Maximum purposeful participation at some level is a challenging but attainable goal. To achieve this goal, it is often best to first provide brief, simple explanations that enable children to begin moving as soon as possible. Additional instructions can be provided later as needed.

- **The physical safety of children's play environments should be of paramount importance at all times.**
  Active play, by its very nature, involves an element of risk. It is risk that children enjoy as they test out their newly developing skills. Wise teachers permit children to take reasonable and measured risks but do so in a manner that does not compromise children's safety. A safe environment is one that maximizes learning opportunities and enjoyment while at the same time minimizing situations that compromise a child's physical, emotional, or social "safety net." Adults must continuously strive to provide a safe environment that is healthful in all ways.

- **Family members working as partners with teachers are key to enriching the physical development of children.**
  Each child's unique interests and learning needs are best met through thoughtful and regular collaboration

Research Highlight: Physical Activities Enhance Young Children's Brain Development

Children use multiple senses when they engage in physical activities. Multisensory experiences create and strengthen communication pathways in children's brains.[2] Young children's brains are highly malleable; thus, early experiences have a big impact on their brain development. Movement experiences that are personally meaningful and provide the "just right challenge" (i.e., challenging but doable) have the most impact on brain development.[3] Neuroscientists studying the brain confirm that "exercise provides an unparalleled stimulus, creating an environment in which the brain is ready, willing, and able to learn".[4]

between family members and teachers. Teachers play an important role in providing information to family members about child development, while family members provide valuable insights about their child's unique preferences, abilities, and life contexts (including their home, community, and culture). The partnership between families and teachers creates continuity in supporting children's physical skills development across home, community, and preschool environments.

- **Inclusion of children with special needs is beneficial to all and promotes greater understanding of and respect for diversity.**
  Teachers can modify the environment, materials, or teaching methods during physical activities to facilitate participation and skill development for all children. When working with a child with disabilities or other special needs, they consult with the child's family members and special education specialists for adaptation strategies. All children in the preschool program benefit when provided with opportunities to play alongside peers with diverse abilities; they learn the important values of inclusion, empathy, respect, and acceptance.
- **Children are multisensory learners with unique learning styles.**
  It is important to provide children with various ways to learn new physical skills: exploration and guided discovery, visual demonstration or pictures, verbal or gestural directions, hands-on assistance, or combinations of these strategies. Through intentional observations, teachers become aware of children's individual learning preferences. Teachers support children's learning of new movement skills by providing them with adequate time and opportunities to observe and practice the skill demonstrated, close guidance, and teacher feedback.
- **To maximize teaching effectiveness, movement skill learning should first focus on *how* children are moving their bodies.**
  By designing movement activities focused on the process or quality of the body movements, teachers place emphasis on improving the child's body coordination (e.g., arm/leg actions) and on increasing awareness of body movements. The product, or quantitative aspect of movements (e.g., how far they jumped, or how fast they ran), should not be the initial focus of learning. For children with disabilities and other special needs, the focus should be on the functional aspects of movement for that particular child. Referring to each child's IEP and consulting with special education specialists about movement goals are effective practices.
- **Children generally learn new movement skills more easily when they can focus on one specific aspect of the skill at a time.**
  Providing cues to children for movement skill learning is important. However, it is recommended that teachers guide children on only one aspect of the skill at a time (e.g., stepping in opposition when throwing) while children are doing the overall movement.
- **Children benefit from ample opportunities to practice new physical skills.** When children initially acquire a new physical ability, they are often highly motivated to repeat the activity many times. Repetition should be encouraged because it strengthens the new communication pathways between the brain and the muscle being used.

Introducing slight variations or additional challenges further enhances motor development. For example, if a child has just learned to jump, it would be beneficial to challenge the child to try jumping on uneven surfaces, such as grass or sand, or to count while jumping.

- **Children benefit from integrated learning activities across the curriculum.** Movement experiences provide an ideal context for children's development in not only the physical domain, but also in the cognitive, social–emotional, and language domains.
- **Frequency, intensity, type, and duration are the four key parameters to designing active physical play to enhance children's fitness and health.** The four parameters may be thought of as the FITT principles (Frequency, Intensity, Type, Time [duration]).[5] "Frequency" refers to the regularity of engaging in **physical activity**; frequent short periods of physical activity each day are preferred (children should not be sedentary for more than 60 minutes at a time except when sleeping[6]).* "Intensity" refers to whether activities are **sedentary**, mild, moderate, or vigorous; moderate to vigorous activities are preferred. "Type" deals with the specific kind of physical activity engaged in; for young children, the types of activities usually take the form of active games, child-initiated play, as well as rhythms and dance. "Time" (duration) refers to the amount of time in which the child is engaged in physical activity; accumulating at least 60 minutes, and up to several hours,

of **moderate** to **vigorous physical activity** per day is recommended. Some children with special needs may not have the physical stamina to participate in the same ways in terms of frequency, intensity, type, and time. Teachers may modify activities to accommodate children's individual needs.

- **Physical skills are more easily learned when clear instructions and appropriate feedback are provided in children's home language using familiar communication methods.** Children who are English learners acquire new movement skills more easily when clear instructions are provided in their home language. Similarly, children who communicate using sign language, picture communication systems, or other augmentative communication systems benefit when teachers use appropriate communication methods to teach physical skills. Moreover, all children in the preschool program would benefit from exposure to different languages and communication methods in addition to physical demonstration, modeling, and material cues provided by teachers.

*Recommendation from *Active Start: A Statement of Physical Activity Guidelines for Children from Birth to Age 5* (Reston, VA: National Association for Sport and Physical Education, 2009).

Environmental Factors

- **Teachers promote optimal physical development when they provide children with positive encouragement and quality instruction (both indirect and direct).**
  Teachers must be aware and take advantage of their critical role. They are the ones "setting the stage" and "creating the climate" for movement skill learning. Teachers who truly embrace the value of physical activities effectively communicate it to children, thus encouraging their participation. Often, quality instruction may require teachers to actively participate in physical play alongside children. At other times, children will benefit most when the teacher simply remains close by and shows genuine interest in the children's physical activities.

- **The immediate physical environment is a powerful influence on children's physical development.**
  The physical environment, play materials, and play themes can all be skillfully designed to promote active play. Both indoor and outdoor play environments should encourage fun and enjoyable learning. Indoor and outdoor play environments are fundamentally different. Each offers distinct learning opportunities in terms of the amount and type of activity that takes place, the sensory properties of the play area, and the potential for using the natural materials unique to the local geography and culture. Multipurpose open space and sufficient outdoor time, weather permitting, are important environmental considerations. If weather or air quality does not permit outdoor play, indoor open space should be provided.

- **Indoor and outdoor play environments should include a variety of appropriately sized equipment that promotes both gross and fine motor development.**
  Indoor movement areas can be as small as a corner of the room in which children can move with a scarf and streamers, throw at wall targets with a beanbag or foam-rubber ball, and play with other small materials. The outdoor play space should promote a variety of activities through the use of balls, low balance boards, hula hoops, tricycles, and other wheeled toys. Adaptations to the equipment encourage participation of children with special needs.

- **Learning is most meaningful when the environment and materials reflect and accommodate children's individual interests, backgrounds, and present abilities.**
  Children come to the learning environment with a wide range of needs, interests, and abilities. Children's life context (i.e., culture, language, diversity, abilities) should be represented through movement activities that maximize opportunities for participation, active engagement, and success. Embrace the richness of diversity by learning about children's culture, language, customs, music, physical activities, and focus on the unique gifts that each child brings to the learning environment.

- **Take time to build safety into both the indoor and outdoor play environments.**
  A safe environment reduces the need for adults to say no. It is important to establish clear expectations. Limits should be set rather than rules (rules eliminate reasonable risk) in order to ensure personal safety. Be particularly

cognizant when working with children who have disabilities that impact their impulse control and judgment. Also, differences in cultural expectations for girls and those for boys, as well as language differences, may impact the critical need for building safety into children's regular play environments. Playground equipment, such as climbing, hanging, and sliding structures, should be checked regularly for safety hazards.

Research Highlight: Must Young Children Sit Still in Order to Learn?

Researchers have stated that high activity levels, impulsivity, and short attention span for sedentary activities are characteristics of typically developing preschool-age children.[7] Children naturally need to move in order to learn.[8] Being physically active boosts children's attention span and capitalizes on multisensory learning so that children are more likely to retain academic concepts such as colors, shapes, and the alphabet.[9] The need for movement-based learning experiences may be particularly important for children with special needs. Research has shown that for children who have autism spectrum disorder and attention deficit hyperactivity disorder, being seated on a movable surface (e.g., a therapy ball) resulted in increased ability to stay on task and remain seated during classroom learning activities. However, children seated on a static surface such as a bench, chair, or floor were less able to remain on task.[10, 11] Experts have suggested that adults' efforts to entice young children to sit still, pay attention, and be quiet during learning activities often run contrary to children's natural needs for physical movement.[12]

- **Movement experiences should include exploration, discovery, and appreciation of the natural environment.**
  Children learn by interacting with people, objects, and the natural environment. Nature provides rich, diverse sensory experiences—sounds, smells, textures, and sights—that are beneficial for young children's sensorimotor development. Outdoor play offers an array of opportunities for exploration, discovery, and learning in a natural environment.
- **Thoughtfully designed movement experiences, guided by adults, support children's physical development.**
  Most children need more than just free play to acquire movement skills. Children benefit from teacher-guided, **structured physical activities**, particularly when they are learning new movement skills. Structured but flexible play activities that emphasize active participation, exploration, and self-discovery are ideal for practicing new, challenging physical skills. Skills acquired from structured activities are important building blocks for expanding children's repertoire of skills for spontaneous, child-directed physical play.

Summary of the Physical Development Foundations

The physical development domain is divided into three strands. The first strand is Fundamental Movement Skills. Most preschool children can acquire reasonable levels of competence in a wide range of movement activities, including balance, locomotor skills, and manipulative skills (both gross motor and fine motor), when given opportunities for instruction and practice in an enriched environment. The second strand is Perceptual-Motor Skills and Movement Concepts. This strand focuses on the development of body awareness, spatial awareness, and directional awareness. These skills are important for interacting with others and for exploring the environment. The third strand is Active Physical Play. Active physical play promotes children's health and physical fitness by increasing their levels of active participation, cardiovascular endurance, **muscular strength**, **muscular endurance**, and **flexibility**.

The remainder of this chapter is organized on the basis of the three strands. The introduction to each strand will highlight its importance to preschool children's overall development. Each strand is further divided into substrands, with specific strategies to support children's learning and development. Examples of strategies include both spontaneous interactions and planned activities that support children's physical development. Integration is a key concept in this framework, since the physical development activities also promote children's learning in all other developmental domains. This framework will guide teachers in planning a physical development curriculum that is flexible, inclusive, and responsive to children's unique needs. Suggestions for working with children from diverse cultures, children with special needs, and children who are English learners are provided.

Teachers play a critical role in supporting children's physical development because physical skills need to be explicitly and deliberately taught. Physical play, both indoors and outdoors, is not merely "free time"; it requires thoughtful planning and intentional interactions.

Summary of the Strands and Substrands

Fundamental Movement Skills

1.0 Balance
2.0 Locomotor Skills
3.0 Manipulative Skills (gross motor and fine motor)

Perceptual-Motor Skills and Movement Concepts

1.0 Body Awareness
2.0 Spatial Awareness
3.0 Directional Awareness

Active Physical Play

1.0 Active Participation
2.0 Cardiovascular Endurance
3.0 Muscular Strength, Muscular Endurance, and Flexibility

Please refer to the map of the physical development foundations on page 211 for a visual explanation of the terminology used in the preschool learning foundations.