

## MOTOR EDUCATION: AN INDISPENSABLE TOOL IN EARLY CHILDHOOD EDUCATION PROGRAMME

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### ABSTRACT

Integrating physical activity into young children's lives is essential for creating a foundation for movement and activity that they will carry with them throughout the rest of their lives. This is the reason for this study which examined motor education: an indispensable tool in early childhood education programme discovered that physically active children learn habits in early childhood that: greatly increase their chances of remaining physically active throughout their lifetime, have fewer chronic health problems, are sick less frequently, miss school less, and have significantly reduced risk for a number of childhood and adult diseases, including heart disease, diabetes obesity, depression, and mental illness. Since cognitive learning and physical activity go hand-in-hand and reinforce one another in early childhood development, it is essential for daycare centre's preschools to adopt a curriculum that emphasizes both and uses movement to promote and teach cognitive development.

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### INTRODUCTION

Early childhood is a crucial stage of life terms of a child's physical, intellectual emotional and social development. Growth of mental and physical abilities progress at an astounding rate and a very high proportion of learning take place from birth to age six. It is a time when children particularly need high quality personal care and experiences. Movement is one of the most important aspects of a young child's life. Most early interaction involves movement. It is true that all children progress through developmental motor sequence, however some may move at a slower, and more awkward and uneven rate. It is important for adults who are beginning to instruct a child who moves more slowly or awkwardly to understand the child's abilities.

David's (2004) asserts movement that can help children develops, not only meteorically but emotionally and socially as well. Their well-being can be greatly enhanced if they are given simple foundation in all areas during their early years. These foundations will carry through as they continue to develop and learn at home and school. In physical education (motor) programs, the social, communication, emotional, and cognitive skills of children are "exercised" as well as motor skills. Motor activities are valuable component for all early childhood education programs. Parents, teachers, or even friends should initiate play at the level which will enable the child to participate safely and successfully. As the child becomes more comfortable

and component with the activity, the expectations can be changed to allow for more challenges. Since all children like to succeed and to feel component, careful attention to skills level and ability would help ensure a positive motor experience.

Problem-solving or cognitive skills such as counting, identifying colors, or learning body parts, are stimulated during games. Participation in motor activities with peers who are accepting influence friendships, and are social and emotional growth of all children. Young children can benefit from many different motor activities. Broad categories of possible activity areas include physical fitness, basic motor skills, dance and music, individual and group activities, and cooperative games. Within each category, activities can be simple, short, and promote success for all children involved. Physical fitness may involve simple stretching, bending, twisting and other body movements. Some imaginative activities such as bear walking or other animal walks can encourage initiative movement and rhythms movement created by the child.

### Concept of Motor Development

Motor development is simply the development of movement. The ability to move is essential to human development. Many motor skills are necessary for everyday life activities e.g. sitting, walking, running, climbing stars, picking up object, using cup, knives and forks, pouring drinks, dressing, holding and using pencils, pens, scissors and using keyboards.

According to Adolph, Wise & Marin(2007),motor development refers to change in children's ability to control their body movements, from infants' first spontaneous waving and kicking movement to the adaptive control of reaching, locomotion, and complex sport skills. Movement is the very center of your children's lives. It is an important facet of all aspect of their development, whether in the motor, cognitive, or effective domains of human behavior. Therefore to deny children the opportunity to reap the benefits of regular, vigorous physical activities is to deny them opportunity to experience the joy of efficient movement.

Physical activities are essential for health. In the past, it was assumed that physical inactivity and its attendant health problem – Obesity, diabetes, high blood pressure, and cancer were of concern only in adult. Today these are also problems in children including children under the age of 6 (CDC, 2000; & Dietz 2001, Dames 2004). Most children today live in a social and physical environment that makes it easy to be sedentary and inconvenient to be active.

Most communities are centered on cars, walking is discouraged and it is difficult for children to play with others without a chauffeuring adult. The concerns about safety, limit outside play for children instead little children engage in sedentary activities like watching television and playing computer games instead.

Movement (physical) skill contributes to academic learning. It was once assumed that academic and physical skills have little to do with one another. Today we know that brain and body develop together. Large motor activities let children experience concepts that would otherwise be abstract example (high, low, twist, turn) and present them with problems to be solved. The attention span and concentration that children bring into academic and creative endeavors is greatly enhanced as they use their bodies in challenging physical movement (Payne & Isaac, 2007).

Physical ability influences self concept. A scene of physical competence contributes to self esteem and self confidence. Children feel capable if they can walk without getting tired, run quickly in play or cross a stream. Feeling capable helps them to feel good about themselves (Sanders, 2002). Exercise promotes mental health. Being physically active reduces stress, anxiety and depression. By participating regular physical activity, children gain a wide array of mental health benefits.

In addition to creating healthy habits and fostering a lifelong academic learning, children whose early childhood education is based on movement also enjoy the following benefits in both in early

childhood and their entire lives,better social and motor skill development, increased school readiness skill, building developing muscles, bones, and joints faster, reducing fat and lowering blood Pressure, developing healthier social and emotional skills. Children obtain these benefits when they are able to participate in a variety of motor activities and are motivated to engage in regular, vigorous play (Leppo, Davis & Crim, 2000). In addition, physical play is an important part of children life, competence as a participant enables children to interact with others, solve problems as they arise during play and develop concepts of fairness.

### **Motor Education: Connection to Cognitive Development**

Early childhood education is rooted in the belief that learning through doing is fundamental for young children. For example, infants beginning to crawl are working hard to master a physical skill that will enable them to explore more fully at home or environment. At a slightly older age, walking allows creating with the object around them. During the preschool years, building with a set of blocks allows young children to learn such mathematical concepts as proportionality and number. Finally, the refinement of fine motor skills in play makes it possible for children to succeed with writing tasks in the primary classroom.

Physical competence is fundamental to cognitive development during early childhood. Montessori (1967) stated that, for learning to reach its full potential, it must be directly connected to physical movement for the young child. This unity of mental and physical activities is at the heart of the Montessori Method of education. When motor skill is directly related to the task being learned, children can understand concepts more completely and quickly. For example, a Montessori earning material called pink tower is a collection of pink cubes of differing sizes that are designed to be stacked from the largest on the bottom to the smallest on top. As children practice this physical task, they learn about serration (ordering from largest to smallest), which is a concept essential to later mathematical conception.

### **Fundamental Motor Skill**

After the first year of life, children learn to walk on their own, exploring their environment, manipulating objects, climbing on furniture and moving around their near environment with curiosity and interest. Their initial movements are short and they fall often. Gradually these skills improve qualitatively in a predictable sequence. Some gross motor skill such as walking and striking are fundamental motor skills which form the basis for games or the more complex movements. The early childhood period is the time when children become mature enough to acquire

these movement competences on their own or with adult guidance.

Gross motor or large motor developments are large movements of the body including sitting, walking, running and climbing stairs. To be physically competent, children must develop the basic attribute component of physical fitness of the bodying strength, balance, flexibility, coordination and agility.

**Strength** is the physical energy available for movement and resistance. Stamina or endurance is the capacity to sustained use of strength or physical energy.

Older children are generally stronger and have greater and predictable endurance. Strength and stamina increase as children exert energy and effort for prolonged period of time in challenging activities like walking, running, and group name.

**Balance** is stimulated through activities such as climbing, running, jumping and rolling. Such activities help children to develop the ability to identify their position in space and control their physical motion. This ability is called kinesthetic awareness. Swinging, turning somersaults, walking on a beam are skills that are dependent on kinesthetic awareness and control.

**Flexibility** refers to the ease and range of movement. Physical suppleness lessens with age as the muscle system becomes less elastic. An infant easily brings his toes to his mouth, but the flexibility wanes as children gets older. One of the goals of physical development curriculum is to help children retain flexibility while they develop muscular strength.

**Coordination** involves being able to move different body parts in relation to one another. A child pushing a swing pulls arms and legs forward and backward in unison. A baby crawling moves arms and legs in opposition. Initially young children learn to coordinate their actions by experimenting with, imitating and exploring to gain control. Opportunities for children to move freely encourage experimentation and practice.

**Agility** refers to the ability to stop abruptly and change directions. It requires flexibility, strength, coordinative and a well developed kinesthetic sense. As children gain speed, grace and precision, they feel sense of mastery. Much of the pressure children find in large muscles play stems from enjoyment of their growing agility. Like other areas of physical development, the development of agility requires ample opportunities for children to use their bodies in ways that are challenging and that led to success.

Early Childhood is time when fundamental or basic movement skills are developing. These skills include

common motor activities that have specific movement patterns such as walking or running. Movement that involves bending, balancing and twisting while you stay in one spot is called non-loco motor. Fundamental movement skills form the foundation for the more advanced and specific movement activities that children will learn as they get older such as sports, active games, gymnastic and dance. Another category of large motor skills developed during early childhood years is called object control skills which involve the use of the arms, hands and feet to move balls.

Knowing about locomotors, non-locomotors and object control skills will help you understand and plan for the children you teach. Walking, running, hopping and jumping are called fundamental locomotors skills.

### **Locomotors skills**

#### **Walking**

For transportation, health, learning and recreation, walking is perhaps the most important form of physical activity for human beings. Walking helps children build bones and muscles, maintain healthy weight, reduce stress, increase flexibility and stamina, concentrate, have a positive self-image, sleep better and learn about the world. Almost all children begin to walk around their first birthday. The achievement of walking is one of the most notable milestones of development. In order to walk, children have sufficient leg strength to support their body weight. They must have stamina (energy and strength) to transport them over distance and flexibility to adapt to different surface; they must stay balanced as they walk (requiring a brief moment on one foot). When children walk along a line or on a beam they are using dynamic balance.

#### **Running**

Running is locomotion characterized by a short phase during which the body is propelled forward to 'fight' (both feet leaving the ground simultaneously). Children cannot run until they have acquired enough leg strength to propel themselves through the air and handle the force of landing and enough coordination to control rapidly moving legs. An immature run is 'flat footed' with toes pointed out. When running for the first time, children use a white base of support. (Legs far apart) and their arms are held high. As children mature, the stride lengthens feet are held closer together, toes point forward and the child leans forward.

#### **Jumping**

Jumping refers to diverse moment in which a person which a person pushes his or her body in the air using leg force and then lands on one or both feet. Jumping is challenging for young children because it requires leg strength and control both in the air and upon landing. A jumping includes four phase-preparatory,

takeoff, flight and landing. Most children do not gain proficiency in standing long jump until age 6 (Gabbard 2004). During the preschool and kindergarten years children takeoff and land on only one foot. Hopping requires the prerequisite static balance skill of standing on one foot. This does not usually appear until 2 and half of age. By three and half years of age, most children can hop one of three times (Gabbard, 2004). By five years of age, the ability to hop 10 times in succession is typical. In general girls demonstrate hopping skills six months before boys (Payne & Isaac, 1995)

### **Combined Loco Motor Skills**

Galloping, sliding and skipping are skills that combine basic locomotor movement. They are normally not mastered until the end of early childhood years. These combined locomotor are learned in early childhood and are later used in sports and dance.

### **Non-Loco Motor Skills**

Movement that are performed in place while standing, kneeling, sitting, lying down or moving from one place to another are called **non-locomotor motion**. They are sometimes referred to as axial or ability. All non-locomotor motions require balance, coordination and flexibilities (a joint range of motion)

Motor development seems to follow a pattern. Large muscles develop before smaller ones e.g very young children find it easier to run than cutting with scissors. Children also tend to develop in a head-to-toe pattern. For instance, babies move their eyes, head and hands long before they learn to crawl.

As infant develop increasing motor competence, they use perceptual information to inform their choices about which motor actions to take (Adolph and Joh 2007). For example, they may adjust their crawling or walking in response to the rigidity, slipperiness, or slant of surface (Adolph 1997). Motor movements, including movements of the eyes, arms, legs, and hands, provide most of the perceptual information infant receive (Adolph and Berger 2006). Young children's bodies undergo remarkable changes in the early childhood years. In describing this development, Adolph and Avila (2000) states that Newborns are extremely top-heavy with large heads and torsos and short, weak legs. As infant grow, their body fat and muscle mass are distributed. In contrast to newborns, toddlers' bodies have more cylindrical shapes, and they have a large ratio of muscle mass to body fat, especially in the legs," These changes in weight, size, percentage of body fat, and muscle strength provide perceptual/motor challenges to infants as they practice a variety of actions (Adolph and Berger 2006). This dramatic physical development occurs within the broad context of

overall development. As infants master each challenge, their perceptual and motor behavior reflects their ever-present interpersonal orientation and social environment.

The extent and variety if infant perceptual and motor behavior is remarkable. Infant and toddlers spend a significant part of their days engaged in motor behavior of one type or another. By three and half months of age, infant have made between three and six million eye movements during their walking hours (Haith, Hazen, and Goodman 1998). Infant who crawl and walk have been found to spend roughly half of their working hours involved in motor behavior, approximately five to six hour per day. On a daily basis infants who are walking "... take more than 9,000 steps and travel the distance of more than 29 football fields. They travel over nearly a dozen different indoor and outdoor surfaces varying in friction, rigidity and texture. They visit nearly every room in their home and they engage in balance and locomotion in the context of varied activities" (Adolph and Berger 2006).

### **What should we know about motor development?**

- New behavior is made possible when a child's body develops e.g. a toddler can be toilet trained once the necessary anal sphincter muscles have developed.
- So many new experiences and learning opportunities are open up when the body is able to do more e.g being able to hold the head firmly in the midline means the child can focus more easily on an object. it also means the child can now develop hands/eye coordination, a very importation skill needed for independent living
- Being able to reach and grasp means a child can being to learn about object in his world or being able to sit means more use of the hands and arms for playing. It means the child can begin to learn about his position in space. Sitting is an essential skill if the child is to eat easily, dress himself, get the attention of others when speaking, look at computer screens, television etc.
- Being able to increase the child's learning opportunities. It means he can touch things that were only visible before, so much more can be learned about how much space his body takes up by crawling into, under around and over objects.
- Being able to walk means a child is able to carry things. It also means the child can explore and more in his environment than before.
- Being able to move independently means a child has more opportunities for social interaction and language learning. Because children can now follow their caregivers from place to place it means they can be talked to and include in more everyday activities. The can

run, jump and catch a ball and play with other children, socializing and making friends.

Any movement means the brain; nerves and muscles have to work together. At first, movement in the very young baby appears haphazard and disorganized. All the joint of the arm and legs are flexed. Primitive reflexes such as the Moro reflex and the Grasp reflex are also present. These disappear as the nervous system matures, movement becomes more organized and meaningful and the child develops. The child first learns to control and support his head in all positions. Another important development is learning to bring his hands together in the midline, beginning to reach for object and to grasp them. A variety of different movement will now develop and the child learns to roll over from his back to his tummy and back again. He will also be able to sit alone at this stage. Most children learn to crawl and to kneel before they are able to pull themselves to a standing position, balance themselves while standing and finally walk without help. (Remember! All children are different and not everyone crawls, but eventually walk well.)

#### **Integrate Physical Activity into the Curriculum**

According to National Association for Sport and Physical Education (NASPE, 2010.) Teachers should:

- Use movement vocabulary, such as, “balance,” “sideways,” “low-level” and “curved pathway.”
- On the class word wall, list the names of skills and concepts that children have practiced.
- Teach proper names of body parts when children use them to move.
- Introduce some basic body organs and functions that relate to movement (e.g., heart, lungs, muscles and bones)
- Use colors, letters and numbers during movement activities and games.
- Read action book aloud so that children can move to the words in a variety of creative ways.
- Ask the children to draw pictures of people moving.
- Include motor skill challenges during transition times (e.g., “Please hop back your seat”).

The National Association for sport and physical Education (NASPE, 2010) has developed Physical Education Standards for children and a position statement on appropriate practices in movement program for young children age three to five.

**Standard 1-** Demonstrate competency in motor skills and movement patterns needed to perform a variety of physical activities.

**Standard 2-** Demonstrate understanding of movement concepts, principles, strategies and tactics as they apply to the learning and performance of physical activities.

**Standard 3-** Participates regularly in physical activity.

**Standard 4-** Achieves and maintain a health-enhancing level of physical fitness.

**Standard 5 –** Exhibits responsible personal and social behavior that respects self and others in physical activity setting.

**Standard 6-** Values physical activity for health, enjoyment, challenge, self-expression and social interaction.

This standard presents the expectation that teachers provide opportunities for development and/ or children develop:

- Overall physical ability (strength, stamina and flexibility)
- Locomotors skill (proficiency, control and balance in walking, climbing, running, jumping hopping, skipping marching and galloping.
- Object control skills (coordinating, throwing, catching, kicking, bouncing balls and using slide and swings.
- A disposition to participating actively in games, play and other forms of exercising physical fitness.

#### **CONCLUSION**

Integrating physical activity into young children’s lives is essential for creating a foundation for movement and activity that they will carry with them throughout the rest of their lives. Physically, active children learn habits in early childhood that help to increase their chances of remaining physically active throughout their lifetime. Active children have fewer chronic health problems, are sick less frequently, miss school less, and have significantly reduced risk for a number of childhood and adult diseases, including heart disease, diabetes obesity, depression, and mental illness.

Since cognitive learning and physical activity go hand-in-hand and reinforce one another in early childhood development, it is essential for daycare centre’s preschools to adopt a curriculum that emphasizes both and uses movement to promote and teach cognitive development. Since young children do not have to sit still for long period and respond better to activities that change efficiently from using a movement-based program to teach cognitive skills. There are significant advances in motor control during the preschool period. These advances depend on physical maturation of brain and body systems and on the increasing skill that comes through practice. They involve both the large muscle such as those used in running, jumping and climbing, and the

small muscles such as those used in drawing and tying a knot. Several factors contribute to the growth in motor development. In the first instance, this development reflects the gradual transition from the reflex behavior of the newborn to the voluntary actions of the preschooler. A second factor is the child's increasing ability to accurately perceive body size, shape and position of its parts. Increasing bilateral coordination, the coordination of the two halves of the body, also contributes to increased motor performance. Virtually every motor skill requires some sort of cooperation between the two sides of the body. Moving in some kind of alternatively timed relationship.

The capacity to perform activities as walking, running, and jumping did not necessarily impact the ability to perform them skillfully or smoothly. For example, the young toddler's are awkward. The stride lengthens, speed increases, balance stabilize, and the child can walk for long period without resting. By the age of 4, the child's walk is essential the same as the adult's. In most cases the development of a motor skill involves the gradual integration of existing movements into a smooth, continuous pattern. In other cases new movements must be acquired. For example learning to throw a ball skillfully involves the integration of existing movements and the acquisition of new ones.

## REFERENCE

Adolph, K. E. (1997). Learning in the Development of Infant Locomotion, *Motor of the society for Research in Child Development*, Vol. 62, No. 3, Serial No. 251.

Adolph, .K. E, & A. M. Avolio. (2000). "Walking Infant Adapt Locomotion to Changing Body Dimensions," *Journal of Experimental Psychology Human Perception and Performance*, Vol. 26, No. 3, 1148-66.

Adolph, K. E.; B. Vereijken; and P. E. Shrout. (2003) "What changes in infant Walking and Why," *Child Development*, Vol. 74, No. 2, 475-97.

Adolph, K. E; & S. E. Berger. (2006). Motor Development," in *Handbook of Child Psychology: Volume 2 :cognition, perception, and Language* (Sixth edition).Series Editors: W. Damon and R. Lerner. Volume Editors: D. Kuhn and others, New York: John Wiley and Sons.

Adolph, .K. E, & A.S. joh. (2007). "Motor Development: How Infants Get Into the Act," In *Introduction to infant Development* (second edition). Edited by A. Slater and M. Lewis. New York: Oxford University Press.

CDC (centers for Disease Control and Prevention).(2000).promoting better health for young people through physical activity and sport: a report to the president from the secretary of Health and Human Services and Secretary of Education. Atlanta, GA:U.S .Department of health and Human Services CDC National for Chronic Disease Prevention and Health Promotion.

Davies, D. (2004) *Child Development: A Practitioner' Guide* (Second edition). New York: Guilford Press.

De Onis, M & Blossner, M (2000). Prevalence and trends of overweight among preschool children in developing Countries. *American Journal of Clinical nutrition*, 74 (4), 1032-1039.

Dietz, W. H. (2001). The obesity epidemic in young children. *The British Medical Journal*, 322 (7282), 313.

Gabbard, C. P. (2004). *Lifelong motor development* (4<sup>th</sup> Ed.). San Francisco, CA: Benjamin Cummins/Pearson.

Gallahue, D. (1993). Motor development and movement skill acquisition in Early childhood education. In B .Spode (Ed, *Handbook of research on the education of young children* (pp. 24-41). New York: Macmillan.

Haith, M. M.; C. Hazen; G. S. Goodman. (1988). "Expectation and Anticipation of Dynamic Visual Events by 3.5-Month-Old Babies," *Child Development*, Vol. 59, 467-79.

Leppo, M .L; Davis, D & Crim, B (2000). The basics of exercising the mind and body, *Childhood education*, 76(3)142-147

Sanders, S. W(2002). Active for life: Developmentally appropriate movement programmes for young children. Washington, DC: NAEYC.

Payne, V. G; & Isaacs, L. D. (2007). *Human motor development: a lifespan approach* (7<sup>th</sup>, ed). New York, NY: McGraw-Hill.

National Association for Sport and physical Education (2004). *Moving into the future: National standards for physical education* (2<sup>nd</sup> ed). Reston, VA: American Alliance for Health, Physical Education, Recreation & Dance.