

It's playtime!

The motor development
of the child: A key pillar
of global development





It's playtime!

Title of original document:

À nous de jouer! Le développement moteur de l'enfant, un pilier important du développement global

© Gouvernement du Québec

Ministère de l'Éducation et de l'Enseignement supérieur

ISBN : **978-2-550-76240-9** (PDF)

ISBN : 978-2-550-77831-8 (French version)

Legal deposit: Bibliothèque et Archives nationales du Québec ©



This document, an initiative of the Table sur le mode de vie physiquement actif (TMVPA)¹, was written by Suzanne Gravel of the Consortium québécois de développement des pratiques psychomotrices and by Véronique Martin of the Ministère de la Famille.



1. To learn more about the Table sur le mode de vie physiquement actif, go to tmvpa.com.

Global development

The expression “global development” refers to the specific way in which children develop and learn in all areas: physical and motor, emotional, social, cognitive and linguistic.² These areas develop simultaneously and mutually reinforce each other.³

The maturation process of children up to the age of seven is characterized by the gradual integration of sensorimotor information⁴ that enables them to discover themselves as unique and independent individuals. This process is largely genetically determined and only slightly influenced by external factors such as education and cultural environment.

As they mature, children develop “their capacity to integrate motor functions, using them to move around, act, position themselves in space and time, perceive reality, learn, enter into relationships with others, communicate, integrate into social life, ensure their psychological equilibrium and well-being, and be responsible and autonomous.”⁵

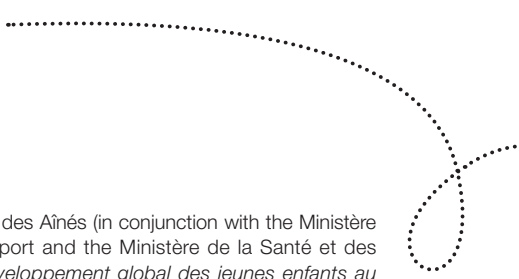
- 
2. Québec, Ministère de la Famille et des Aînés (in conjunction with the Ministère de l'Éducation, du Loisir et du Sport and the Ministère de la Santé et des Services sociaux) *Favoriser le développement global des jeunes enfants au Québec: Une vision partagée pour des interventions concertées* (Québec : Gouvernement du Québec, 2014), 7.
 3. For more information relating to the various dimensions of child development, see Joly (2010), Robert-Ouvray (1997) and Bouchard (2008).
 4. Sensorimotor information stems from the senses and from the body in motion.
 5. Frédérique Wauters-Krings, *(Psycho)motricité: Soutenir, prévenir et compenser*, 2nd edition (Brussels: De Boeck, 2013), 8. [Translation]

Illustration of the global development of the child through symbolic play

Symbolic play, or make-believe, allows children to **ACT OUT** their ideas and express themselves. This type of play helps children to develop their motor skills (e.g. use props, take up different positions, move around) and their ability to think (e.g. organize games, problem solve, invent scenarios) while also enabling them to communicate and interact with others (e.g. listen to their peers, explain their actions, engage in dialogue) and express their emotions and their understanding of the world (e.g. share their concerns, demonstrate their knowledge).

Symbolic play initially involves direct imitation of the actions and expressions of people in the immediate environment. Children then learn deferred imitation, putting off mimicry until sometime after the actions to be modelled have already happened. Each child's form of play is then parallel to that of others. Toward the age of three, children create their first rudimentary play scenarios. During this period, they gradually shift from parallel play to associative play: their activities become similar, but not in terms of organization or objectives. Symbolic play is created through action and develops as the child matures. Real cooperation in play activities appears toward the end of early childhood, making way for increasingly structured and organized play activities.



Physical and motor development

Physical development involves the child's growth and physical health. It is related to the child's inherited characteristics as well as to ways in which the human and physical environments meet his or her physiological needs for sleep, food, etc.

Motor development refers first and foremost to the appearance and natural evolution of motor functions. It can encompass comprehensive, or global, body movements such as sitting, crawling, walking, running, climbing, throwing and catching (an object), as well as dexterous hand movements (fine motor skills) such as eating with utensils, holding a pencil or using scissors. These skills develop quickly during the period of increasing awareness that childhood essentially is. They are acquired through practice and correspond to where a child fits on the maturity continuum.



Motor development refers to the evolution of the child's physical abilities and motor functions under the twofold influence of maturity and practice.⁶

The potential for practice depends on the opportunities offered to the child in his or her environment. The motor development of the young child is fundamental since it is a prerequisite for all further development.

The role of movement *and motor activity* **in early** **child development**

Through movement (motor activity), children discover the range of actions and possibilities of which their bodies are capable. Over time, they become increasingly able to adapt their actions to the requirements of the environment, becoming more independent as well. Indeed it is by moving and acting that they come to know themselves as independent from others. From birth to the age of three, the child's primary mission is to realize that he or she exists as a whole person, and has a body that is under his or her exclusive control. This new awareness can be seen in children's desire to affirm themselves, which typically happens at a time in which they are markedly oppositional. This also leads children to begin taking an interest in themselves. Between the ages of four and seven, children enjoy experimenting and exploring, and in the process familiarize themselves with new bodily, visual, auditory, tactile and other sensations. At this stage of life, children are still highly egocentric. Between the ages of seven and nine, they acquire the capacity to picture their own bodies, and reach a stage of development that allows them to learn techniques such as the breaststroke in swimming and dribbling in basketball. The awareness of their own wholeness also enables them to open up to others.

6. Renald E. Legendre, *Dictionnaire actuel de l'éducation* (Montréal: Guérin, 2005), 392. [Translation]

Children structure and develop their thinking through activities of their own making. Up to the age of 2, they have to act in order to think. Then, from age 2 to 7, they think while acting. Then, generally starting at the age of 7, they learn to think apart from acting.⁷ Moreover, the problem solving that children are called upon to do once they begin to play and explore, facilitates the development of executive functions and cognitive skills, such as concentrating, planning, organizing information and decision making.⁸



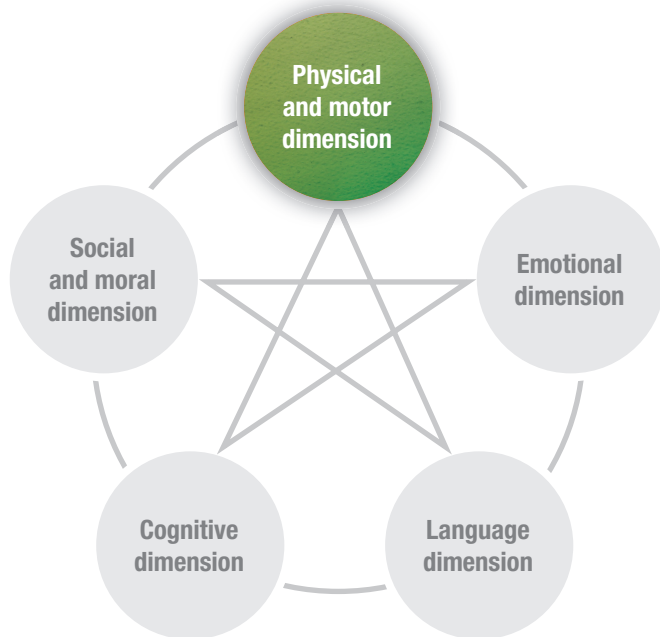
Finally, it is through movement and the body that children express themselves. Babies become agitated and cry when they are in need of something. Once their needs have been met, however, they become calm again. Children's motor expressiveness diminishes as they acquire spoken-language skills. In stressful situations, or when they are overcome with emotion, children act out spontaneously, because by doing so they can regulate the emotional tension they feel. Hence the importance of observation, which makes it possible to identify children's needs from their behaviour. Likewise, children must also be allowed to work off emotional tension through regular-to-numerous physical activities in which they can move and act freely, and in the process restore their energy.

7. Piaget calls this "de-centring."

8. Adèle Diamond, "Apprendre à apprendre," *La Recherche: Les dossiers de la Recherche*, no. 34 (2009): 88- 92.

In other words, motor skills do not evolve apart from the other areas of child development: they are all linked. Motor skill development is a key pillar, however, since it is by moving around and handling objects that young children learn about themselves and go on to explore their physical and social environment. This in turn enables them to make gains in all the other areas as well. Likewise, their level of emotional security, which is associated mainly with the process of attachment, motivates them to act and explore.

Figure 1.
Global development and the interrelatedness
of the various areas of development⁹



9. Québec, Ministère de la famille, *Meeting Early Childhood Needs: Québec's Educational Program for Childcare Services* (Québec: Gouvernement du Québec, 2007), 24.

Motor development *influences:*

- 1) emotional development, because children's new abilities foster feelings of pride and a sense of autonomy, in addition to bolstering confidence and self-esteem
- 2) social development, because children's motor skills enable them to augment their interactions and to adapt their behaviour to social norms
- 3) cognitive development, because by improving their ability to handle objects and move about, children develop their capacity for observation, knowledge, understanding and problem solving
- 4) language development, because adults' verbalization of children's experiences give children opportunities to talk and to integrate the vocabulary associated with their body, their movements, and space and time. Language learning requires interaction with others.

Motor development *is influenced by:*

- 1) emotional development, because a secure sense of belonging allows children to feel safe enough to explore, take risks and seek help when they need it
- 2) social development, because the more children interact with others, the more they learn, particularly through imitation. The growth of children's social skills makes it possible for them to carry out tasks requiring increasingly complex motor skills
- 3) cognitive development, because an increased capacity for thinking and reflection bolsters children's ability to anticipate the consequences of their actions, adjust accordingly and meet challenges that require more complex and efficient motor skills
- 4) language development, because the more proficient children become at speaking a language, the more capable they are of adapting their actions to new information (e.g. instructions or advice) and their motor expression to more precise statements or concepts

Motor development and the autonomy of the child

Childhood is that phase of life in which human beings lay the groundwork for their personal development. Grabbing an object, crawling, walking, climbing, running, throwing a ball and tracing an image are all examples of basic motor skills that stem from the interaction between biological maturity and the child's experience. What children learn when they use these skills affects all aspects of their development, including how they think, how they see others and how they interact with them.

Children's personal autonomy grows as they develop. Children learn by doing and moving. As they mature, they gain access to new possibilities, which they explore and ultimately try to master. Increased proficiency in their locomotor skills (crawling, walking, running, etc.), non-locomotor skills (turning around an axis, maintaining balance, etc.) and handling skills (throwing, catching, kicking, etc.) is accompanied by a growing capacity for exploration. **It is essential that children do these things on their own, rather than being hurried into doing them.** If children are placed in situations requiring skills that exceed their level of maturity, they encounter failure and all the consequences this can have for their development, particularly on the emotional and social levels. On the other



hand, if the situations in which they are placed do not offer them sufficient challenges, or actually prevent them from exploring, they become bored and passive. Pronounced periods of development are times in which “learning can take place with minimum effort and maximum efficiency.”¹⁰ Children then find, on their own, the energy required to sustain the efforts they must make for their personal development, and they enjoy the resulting success. This is the very basis of intrinsic motivation, which is the strongest form of motivation for continuing to enjoy acting and moving.

The maturation process

Child development is strongly influenced by the phenomenon of biological maturation, which is linked to the development of the nervous system. While children’s experience and environment are obviously significant factors in their development, the maturation process takes its own time. For example, a six-month-old will be unable to walk before his or her nervous system has provided access to the voluntary control of all muscle areas involved in this basic motor skill.



10. Robert Rigal, *Motricité humaine: Fondements et applications pédagogiques* (Québec: Presses de l'Université du Québec, 1985). [translation]

All of a child's skills and abilities are subject to this process. **All children go through the same steps and phases of development, but not necessarily at the same pace.** For example, while one child may take his or her first steps at the age of ten months, and another at fourteen months, both can be considered to be developing normally. A little girl may begin talking at the age of twelve months and her brother at the age of eighteen months, without any developmental delay on the latter's part. The same holds for all the basic motor skills, such as throwing, catching, climbing and running.

It is important to keep in mind this variability in child development when working with groups of children who are more or less the same age. For example, it is easy to forget that, in a group of four-year-olds, the age gap between two of them could be up to a year (born in August, born in October). If all are asked to do the same task, the challenge obviously will not be as great for some as it will for others. While this difference is most obvious between birth and eleven months, the maturation process influences the pace of development throughout childhood. Moreover, we must not forget the differences in the pace of maturation that have been observed between boys and girls, nor the phenomenon of children born prematurely.¹¹ Some of the latter take up to five years to bridge the gap between their actual age and their level of biological maturity.

11. Richard Cloutier, *Les vulnérabilités masculines: Une approche biopsychosociale* (Montréal: CHU Sainte-Justine, 2004); Égide Royer, *Leçons d'éléphants: Pour la réussite des garçons à l'école* (Québec: École et comportement, 2010).

Illustration of the maturation process through the experience of learning to walk

Learning to walk starts at birth. From the newborn's involuntary movements to the toddler's first steps, the child has to master a series of body movements in order to confidently go about learning to walk. Each part of the body must be called into play as soon as the development of the nervous system makes it possible to do this. Meanwhile, the child will turn his or her head around to follow an object of interest, attempt to roll over onto his or her stomach, and so on. All that children really need in this context is to be able to do things on their own. Adults, who are often keen to see early progress, may be tempted to have their children master specific positions or actions before they are ready to do so. This undercuts the child's sense of initiative and self-confidence, which normally develops with each achievement. The free and unimpeded movement approach stems mainly from the idea that children are genetically programmed to develop their motor skills and that the corresponding process must be respected. Children must be placed in situations where they can move freely and where the adult can observe them and help them to learn, and all within the context of challenges appropriate to their developmental levels.



The importance of *global motor* development

In early childhood, it is essential to make room for global motor activities that involve the whole body, such as walking, running, jumping and dancing. This is the basic principle of active play, which should be promoted because it enables children to discover their potential for action, gradually master the different parts of their body, and develop their coordination, balance and muscle tone. Global motor development, moreover, constitutes the foundation for the development of fine motor skills, which are required for all activities involving the handling of objects and materials. And it is also through movement that children develop their spatiotemporal sense and body image, and learn to recognize their dominant side.¹² Good development in each of these components is a prerequisite for learning reading and writing.



12. In this process, called “lateralization,” children come to realize that they have a dominant side (left or right).

Illustration of the importance of global motor development in learning to write

The process of learning to write, which is directly linked to the development of manual dexterity, is rooted, in fact, in the development of the child's motor skills. Before a child can pick up a pencil and scribble on paper, he or she must have acquired sufficient postural control to use his or her arm in the appropriate way(s). It is through such gross motor activities that children gradually attain postural control and are able to make the finer movements of arm and hand required to control a pencil. Moreover, children must have experimented with these movements enough to realize which hand they favour, and they must be able to position it in the right place on the paper. Children also need time to explore and to prepare themselves for academic learning. Although society and parents often want children to be precocious, the maturation process takes its own time and cannot be hurried.

Activities and games that develop gross motor skills

From birth until the age of two, it is essential that children be allowed to explore their bodies. During the first months, the supine position is ideal for this since it forms the foundation, as it were, for movements that follow. To ensure their harmonious development, children must not be placed in positions they cannot hold, or get out of, on their own. They are encouraged to move and explore when they have sufficient space to do so, and when surrounding toys are eye-catching enough to prompt forays in their direction that involve rolling, crawling, walking, etc. This is indeed the principle of free motor activity.



From the ages of two to five, the repeated exercise of a range of movements enables children to develop the various aspects of their gross motor capacity, namely, the relative independence of different parts of the body, the control of muscle tone, balance and coordination. The best activities are those that involve the entire body: moving across surfaces with different inclines, running and chasing, climbing, running obstacle courses, dancing and performing other types of movement to music, playing ball, pedalling a tricycle or a bicycle. In addition to fostering the gross motor skills, these activities enable children to develop their spatiotemporal sense and body image. These activities can vary in intensity and be carried out alone or in a group, with or without equipment. Each activity draws on the child's cognitive skills and emotional and relational skills. Keep in mind that unstructured play, as initiated by the child, is to be given priority during this period of life.

From the ages of six to nine, children reach a developmental level in which they are receptive to technical learning. Although their movements are more fluid and coordinated, overall motor versatility should remain the focus at this stage. Making a variety of activities available to students should be the first priority in fostering their development. Children between the ages of six and nine typically consolidate the basic motor skills they have acquired so far. They have attained a level of maturity that enables them to play with others. While group activities in which everyone has a chance to be active are winning strategies for this age group, they still need to be able to freely play and explore to consolidate what they have learned.

Obstacles to the child's motor development

This Western society in which our children grow up is characterized by tremendous physical inactivity and all the problems that come with it: obesity, nervous tension, cardiac problems, etc. Many young children spend a large part of their day sitting or lying down, whether in a high chair, car seat, baby seat, etc. Screens are playing an increasingly bigger part in this problem; new technologies are captivating young people and may interfere with the development of their basic motor skills.



A pedagogy that enables children to move and be physically active

Organization of space

Children's environments should allow them to freely and safely move about and use their motor skills. However, the spaces they spend time in on a daily basis are often cluttered with furniture and other items. It is time to think about organizing these spaces to meet their natural and essential need to move and explore their motor skills.

Outdoor play

Outdoor play areas are often the best places for children to engage in unstructured play and explore a variety of motor skills. Well-designed play areas that foster manipulation skills provide children with numerous opportunities to explore with their bodies and find out more about their environment. Natural spaces encourage them to make many of the discoveries and experiments that are necessary for their development: playing in the snow, jumping in sand, running around, and so on.

Room for exploration and discovery

The prime characteristic of early childhood pedagogy is that it provides opportunities for development adapted to the child's abilities. In light of what was said above, the best form of pedagogy is that which makes ample room for children's own sense of initiative and allows them to meet challenges in their own way. Play and other activities that are initiated by children or that reflect their likes and individual needs are the best ways to support their development.

The presence of adults

Children obviously need to be active; but they also have a need for interaction with others, and for recognition. The emotional security they derive from close attachments enables them to take the risks they need to take for their development. The presence of well-meaning adults who are capable of supporting them in their efforts and adapting challenges to their abilities, remains a key factor in their development. Loving parents, and professionals who have been trained to meet children's needs, must both be taken into consideration when contemplating action on behalf of child development.



Conclusion

The pleasures of moving and handling objects are essential to the development of the young child. This principle must be applied in all areas of the child's life because it forms the base for all subsequent learning.

Suggestions for further reading

Bouchard, Caroline. *Le développement global de l'enfant de 0 à 5 ans en contextes éducatifs*. Québec: Presses de l'Université du Québec, 2008.

Cloutier, Richard. *Les vulnérabilités masculines: Une approche biopsychosociale*. Montréal: CHU Sainte-Justine, 2004.

Diamond, Adele. "Apprendre à apprendre." *La Recherche: Les dossiers de la Recherche*, no. 34. 2009, 88-92.

Dugas, Claude, and Mathieu Point. *Portrait du développement moteur et de l'activité physique au Québec chez les enfants de 0 à 9 ans*, 2012.

Gravel, Suzanne, and Jackie Tremblay. *Développer l'intervention en psychomotricité auprès des enfants*, Parea research report. Jonquière: Cégep de Jonquière, 2012. http://www.cdc.qc.ca/parea/785046_gravel_tremblay_psychomotricite_PAREA_2005.pdf.

Jensen, Eric. *Teaching With the Brain in Mind*, 2nd edition. Association for Supervision & Curriculum Development, 2005.

Joly, Fabien. "Psychomotricité: une motricité ludique en relation," in Catherine Potel, ed. *Psychomotricité: entre théorie et pratique*, 3rd edition. Paris: In Press, 2010, 23-42.

Lauzon, Francine. *L'éducation psychomotrice: Source d'autonomie et de dynamisme*. Québec: Presses de l'Université du Québec, 2010.

Legendre, Renald. *Dictionnaire actuel de l'éducation*. Montréal: Guérin, 2005.

Martin, Jocelyne, Céline Poulin, and Isabelle Falardeau. *Le bébé en services éducatifs*. Québec: Presses de l'Université du Québec, 2008.

Melsbach, Sylvie. *Bouger c'est naturel: Comprendre les mouvements de l'enfant pour mieux le soutenir*. Claudette Pitre-Robin ed. St-Hubert: Regroupement des centres de la petite enfance de la Montérégie, 2015.

Meunier, Lucie. *Le bébé en mouvement: Savoir accompagner son développement psychomoteur*. Paris: Dunod, 2015.

Pelletier, Danielle et al. *Activité-projet: Pour le développement global de l'enfant*, 2nd edition. Montréal: Modulo 2011.

Québec. Ministère de l'Éducation, du Loisir et du Sport. *L'activité physique, le sport et les jeunes*. Brief of the Comité scientifique de Kino-Québec. Québec: Gouvernement du Québec, 2011.

Québec. Ministère de la Famille. *Gazelle et Potiron: Cadre de référence pour créer des environnements favorables à la saine alimentation, au jeu actif et au développement moteur en services de garde éducatifs à l'enfance*. Québec: Gouvernement du Québec, 2014.

Québec. Ministère de la Famille. *Accueillir la petite enfance: Le programme éducatif des services de garde du Québec*. Québec: Gouvernement du Québec, 2007.

Québec. Ministère de la Famille et des Aînés (in collaboration with the Ministère de l'Éducation, du Loisir et du Sport and the Ministère de la Santé et des Services sociaux). *Favoriser le développement global des jeunes enfants au Québec: Une vision partagée pour des interventions concertées*. Québec: Gouvernement du Québec, 2014.

Rigal, Robert. *L'éducation motrice et l'éducation psychomotrice au préscolaire et au primaire*. Montréal: Presses de l'Université du Québec, 2009.

Rigal, Robert. *Motricité humaine: Fondements et applications pédagogiques – Tome 1*. Québec: Presses de l'Université du Québec, 1985.

Robert-Ouvray, Suzanne. *Intégration motrice et développement psychique: Une théorie de la psychomotricité*. Paris: Desclée de Brouwer, 1997.

Royer, Égide. *Leçons d'éléphants: Pour la réussite des garçons à l'école*. Québec: École et comportement, 2010.

Wauters-Krings, Frédérique. *(Psycho)motricité: Soutenir, prévenir et compenser*, 2nd edition. Brussels: De Boeck, 2012.

SUGGESTED WEBSITES:

Blog: The Brain from Top to Bottom

“Neural communication”

http://thebrain.mcgill.ca/flash/i/i_01/i_01_cl/i_01_cl_fon/i_01_cl_fon.html

“Individual behaviour”

http://thebrain.mcgill.ca/flash/d/d_01/d_01_p/d_01_p_ana/d_01_p_ana.html

“Piaget’s model of cognitive development”

http://thebrain.mcgill.ca/flash/d/d_09/d_09_p/d_09_p_dev/d_09_p_dev.html



It's playtime!



76-4016-050A